

**EFFECTS OF INTEREST RATE SPREADS ON FINANCIAL PERFORMANCE
OF MORTGAGE BANKS IN KENYA**

BY:

GEORGE NGUGI GITAU

SUPERVISOR:

Dr. Josiah Aduda

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DECLARATION

The research project is my original work and has not been submitted for the award of a degree at any other university.

George Ngugi Gitau.....D61/72049/2008 SIGNATURE.....

The Research Project has been submitted for the examination with my approval as the University supervisor

Signed

Date

.....

.....

Dr. Josiah Aduda

Senior Lecturer

Department of Finance and Accounting

University of Nairobi

DEDICATION

I dedicate this research Project to the almighty God for giving me a chance to complete what I had started and to my wife and children for their love and support.

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ABBREVIATIONS

CBK-	Central Bank of Kenya
CBR-	Central Bank rate
IRS-	Interest rate spreads
KBA-	Kenya Banker's Association
KBRR-	Kenya banks Reference Rate
MPC-	Monetary Policy Committee
NGOs-	Non Governmental Organizations
OECD-	Organization for economic cooperation and development
SACCOs-	Savings and Credit Co - operative organizations
WADR-	Weighted Average Deposit rate
WALR-	Weighted Average Lending rate

ABSTRACT

It is widely believed that fluctuations of market interest rates exert significant influence on the activities of commercial banks. The effect of interest rate spread changes on banks' profitability is shown to be asymmetric with the effect originating from lending rates being greater than those of deposit rates. The objective of this study was to determine the relationship between interest rates spread and the performance of mortgage banks in Kenya. This was a census study of all registered 43 commercial banks in Kenya and relied heavily on documentary secondary data for 5 year study period (2009-2013). The study found that interest rates spreads are higher for larger banks than for medium and small banks. On average, small banks have lower spreads. This could possibly be due to the fact that small and low-capitalized banks find it relatively difficult to raise funds and have to increase their deposit rates to attract funds and compensate for the perception that they are more risky relative to large, more liquid, well capitalized banks that are perceived to be 'too-big-to-fail'. If the higher spreads are merely interpreted as an indicator of inefficiency, one can easily be tempted to conclude from the positive relationship between bank size and interest rate spreads that big banks are less efficient, which may not necessarily be the case. The results are not surprising given that big banks are associated with market power—they control a bigger share of the market both in terms of deposits and loans and advances. The study concludes that there is a positive linear relationship between interest rate spread and financial performance measured as return on assets (ROA) and return on equity (ROE). There are also statistically significant positive relationships between market power, liquidity, operating efficiency and return on assets (ROA) and return on equity (ROE). The study recommends that a study should be replicated in other commercial banks and microfinance institutions across East Africa and beyond to validate such results.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The subject of interest rate spread (IRS), defined as the difference between average interest rate earned on interest earning assets (loans) and average interest rate paid on deposits by Crowley (2007); Barajas, Roberto & Natalia (1998) has been receiving attention for some time both in the popular press and among investors. According to Pittman (2008), access to mortgage in today's market is so complicated and involves so many procedures and processes. This plus other factors like interest rates, identifying a good service provider, low incomes, and hidden costs among other factors has lead to low up take of mortgage products.

To a large extent, mortgage products and mortgage industry are affected by mortgage interest spreads. In a nutshell, interest rates are the single and most critical factor that drives the mortgage market and drives mortgage up take (Mburu & Ka'kumu, 2013). They further posit that the mortgage market should be viewed as a large capital market with investors who can assess risk and returns of alternative investments in relation to the mortgage market thus affecting the mortgage products up take and consumers are rational beings too. Hence the study of effects of mortgage interest rate spreads on mortgage industry performance in Kenya.

1.1.1 Interest Rates Spreads

An interest rate is described as the price a borrower pays for the use of money he does not own, and has to return to the lender who receives for deferring his consumption, by

lending to the borrower. Interest can also be expressed as a percentage of money taken over the period of one year (Devereux, and Yetman, 2002). An interest rate is very well stated as the rate of increase over time of a bank deposit. An Interest, which is charged or paid for the use of money, is often expressed as an annual percentage of the principal. It is calculated by dividing the amount of interest by the amount of principal. Interest rates often change as a result of the inflation and Government policies. The real interest rate shows the nominal interest rate – inflation.

A negative real interest rate means that the nominal interest rate is less than the inflation rate (Gagnon, and Ihrig, 2004). Interest rate is the tool used by the central bank of a country to keep a check on any major currency fluctuation. An increase in interest rate is necessary to stabilize the exchange rate depreciation and to curb the inflationary pressure and thereby helps to avoid many adverse economic consequences.

Crowley (2007), Barajas, Roberto et al. (1998) define interest rate spread as the difference between the weighted average lending rate (WALR) and the weighted average deposit rate (WADR). Wider spreads are always a proxy for an underdeveloped financial system characterized by inefficiency, lack of competition and higher concentration of the banking sector among others and the reverse is also perceived to be true (Demirguc -Kunt and Huizinga, 1999; Mlachila and Chirwa, 2002; Mugume and Ojwiya, 2009). Banking systems in developing countries have been shown to exhibit significantly and persistently large intermediation spreads on average than those in developed countries. However the difference arises in the causal factors.

1.1.2 Financial Performance

Financial performance is a subjective measure of how well a firm can use its' assets from its' primary business to generate revenues. Erasmus (2008) noted that financial performance measures like profitability and liquidity among others provided a valuable tool to stakeholders to evaluate the past financial performance and the current position of a firm.

A firm's financial performance, in the view of the shareholder, is measured by how better off the shareholder is at the end of a period, than he was at the beginning and this can be determined using ratios derived from financial statements; mainly the balance sheet and income statement, or using data on stock market prices (Berger and Patti, 2002).). These ratios give an indication of whether the firm is achieving the owners' objectives of making them wealthier, and can be used to compare a firm's ratios with other firms or to find trends of performance over time. Charreaux (1997) in Severin (2002), states that an adequate performance measure ought to give an account of all the consequences of investments, on the wealth of shareholders.

The main objective of shareholders in investing in a business is to increase their wealth. Thus the measurement of performance of the business must give an indication of how wealthier the shareholder, has become as a result of the investment over a specific time.

There are various measures of firm performance which include the return on assets (ROA), return on investments (ROI), return on equity (ROE) and earnings after tax (EAT). According to Boehlje et al. (1999), Rate of return on assets (ROA) is the net

income generated by all assets, after labor has been compensated but before interest payments. Rate of return on equity (ROE) is the return after all labor and interest expenses have been deducted from the earnings. It measures the return to the owner of the business for their capital investment and can be compared to alternative investments. Earnings after Tax (EAT)/ Net Profit after Tax (NPT) equal sales revenue after deducting all expenses, including taxes. Return on investment (ROI) is performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments.

1.1.3 Relationship between Interest rate Spreads and Financial Performance of Mortgage Banks

Interest rate changes have been shown to directly affect the revenues and costs of financial institutions (Edmister and Merriken, 1989). As the largest US banks have a significant proportion of their operations in foreign countries (Madura and Zarruk, 1995), interest rate changes are likely to substantially impact on their revenue and cost streams beyond the protection that is afforded by hedging.

Interest has indirect impact on financial performance through impacting on the economy, Ngugi (2004) note that high interest rate on borrowers discourages borrowing which results to shrunked investment through multiplier effects. Savings are reduced and this will have a negative impact on banks performance. The opposite is true during period of low interest rate. In conclusion interest rate affects financial performance positively and negatively depending on interest rate movements.

The impact of interest rate on bank's profits operates via two main channels of the revenues side. First, a rise in interest rate scales up the amount of income a bank earns on new assets it acquires. But, the speed of revenue adjustment will be a function of speed of interest rate adjustment. Second, the effect hinges on the amount of loans and securities held. Indeed, in case of rising interest rates, rates on loans are higher than marketable securities so that strong incentives prevail for banks to have more loans rather than buying securities (Okech, 2013).

1.1.4 Mortgage Industry in Kenya

The World Bank estimates that the Kenyan mortgage market has the potential to grow to Sh800 billion, which is about nine times the current size. The 16,000 mortgages valued at Sh91.2 billion in 2011 account for 2.5 per cent of the GDP, which pales in comparison with other countries such as South Africa which has a 26.4 per cent ratio. Kenya's ratio also lags behind Namibia 19.6 per cent, Morocco 16.9 per cent, Mauritius 12.2 per cent, Tunisia 12 per cent (2010), and Seychelles 3.94 per cent (Gachiri, 2012).

According to Ruitha, (2010), Kenya has low mortgage industry growth and home ownership is at a paltry 16%. Also, the demand for low income housing units outweighs the supply. But this does not mean that the mortgage industry is dormant since the industry has seen a steady growth with various mortgage products flooding the market and developed by commercial banks. Also, the demand for housing units in Kenya is immense and driven by the ever surging population growth and urbanization.

According to the Central Bank of Kenya Report on Mortgage finance in Kenya (2011), although the number of mortgage loans has been increasing since 2006, the mortgage market is still relatively very small by international standards with only 13,803 loans. The report further states that while the growth rate in mortgage loans has been rapid and growing steadily at 14% annually, the loan portfolio remains small. The report further states that although the mortgage debt is better than its East African neighbors, at under 2.5%, it is not as developed as its developing country peers such as India (6%) and Colombia (7%). The average loan size has grown steadily but is still concentrated on the higher end clientele. Kenyan mortgage is yet to move to the medium and low income mortgage market.

The mortgage market in Kenya is facing huge challenges and there exists a large housing gap growing each year and prevalent in the urban areas with a deficit placed at 156,000 units each year (World Bank report, 2011). This problem is compounded by other factors like low incomes, high inflation levels, high costs of developing distribution networks, high interest rates, restrictive repayment periods, complex legal systems and regulatory frameworks, Land and property registration (The multiplicity of forms of tenure and transfer methods creates confusion, increases costs, creates legal uncertainties and lack of a one stop registry system) lack of proper information among other factors, mortgage funding and general market infrastructures (World Bank 2011).

1.2 Research Problem

Interest rate spreads (IRS) have been observed to be relatively high in Kenya and other developing countries when compared to the ones prevailing in developed countries. The chief reason behind high interest rate spread in developing countries has been argued to be the presence of high intermediation costs, reflecting the weaknesses and inadequacies of their financial sectors. Njunguna and Ngugi (2000) explain that Kenyan banks incorporate charges on intermediation services offered under uncertainty, and set the interest rate levels for deposits and loans. Interest rate spread discourages the potential saver due to low returns on deposits and thus limit financing for potential borrowers. Kenya has a burgeoning mortgage market and it going to be instrumental in the coming years in providing housing units as the population continues to grow and Kenya's economic center shifts towards its urban settlements. There however exist factors that are slowing Kenya's mortgage industry hence lower up take. These include challenges like high interest rates, complex legal systems, need for risk management, affordability among others (World Bank, 2011).

Local studies have focused on determinants of interest rate spreads but fail to focus on the effect of interest rate spread on the level of nonperforming loans. Ngugi (2001) conducted an empirical analysis of interest rate spread in Kenya but failed to study the effect of interest rate spreads on performance of mortgage companies in Kenya. Njuguna and Ngugi (2000) reviewed banking sector interest rate spread in Kenya but failed to link the interest rate spread to performance of mortgage banks. This implies that a research gap exists. This study therefore seeks to fill this gap by establishing the links between

interest rate spreads and performance of mortgage companies in Kenya. The research question therefore is; what is the effect of interest rate spread on the performance of mortgage banks in Kenya?

1.3 Research Objective

The objective of the study is to establish the effect of mortgage interest rate spreads on the performance of Mortgage banks in Kenya.

1.4 Value of the Study

The findings of the study will make the following contributions:

This study will be of importance to the management of players in the Kenyan mortgage industry as the information into the effects of interest rate spreads on financial performance of mortgage banks would be useful for decision making on enhancing the banks' performance. The outcome of the study will thus help managers in making informed decisions about the macroeconomic effects on the industry.

The study findings will be informative to existing and potential mortgage borrowers from mortgage banks as they are able to infer the relationships between the differences between the deposit and lending rates and the performance of the institutions. The Mortgage industry regulators would use the information to develop a regulatory framework for management of interest rate spreads and subsequently optimizing performance of the mortgage banks which play a critical role in enhancing home ownership in Kenya. The information is suitable when understanding the setting of mortgage banks deposit rates.

Provide relevant information and knowledge that will help financial institutions, real estate developers and real estate investors identify factors that may affect mortgage financing and performance of real estate industry. The study findings add to the body of knowledge for scholars and researchers on the concepts of interest rate spreads and firm performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses other studies that have been conducted in the area of study. The areas covered include the theoretical framework, empirical literature and summary.

2.2 Theoretical Review

There are different theories in this area of study each identifying own paradigm and concept about the interest rates behavior. The study is greatly interested in theories that identify its relationship between interest rate spreads and lending institutions performance. Highlighted below are some of such theories.

2.2.1 Liquidity Preference Theory

According to Keynes, the speculative demand for money is sensitive to changes in the interest rate (Carpenter & Lange, 2002). In other words, it is interest-elastic and extremely so at very low rates of interest. The speculative demand for money is contrasted with the transactions demand the latter being a stable function of income (Carpenter and Lange, 2002). In the Keynesian model, the accumulation of large speculative balances implies that people expect the rate of interest to (rise, fall).

They (want, do not want) to hold bonds because the interest rate and bond prices are (directly, inversely) related to one another. If the supply of money remains constant, the high speculative demand implies a (high, low) level of transactions balances, which corresponds to a (high, low) level of income. If, with a given money supply and an

equilibrium rate of interest, people are suddenly overcome by the fetish of liquidity, the demand for speculative balances would shift (rightward, leftward), putting (upward, downward) pressure on the rate of interest (Carpenter & Lange, 2002).

If people are suddenly overcome by the fetish of liquidity, the Federal Reserve should (increase, decrease) the money supply. Once full-employment income has been achieved, the Fed's policy rule of "Print money to (hold, spend), but not money to (hold, spend)" may not be a viable policy rule because the speculative demand for money is too (stable, unstable). Besides, the Fed may not have an unambiguous indicator of the needed policy: its timely information includes (the interest rate, income) but not (the interest rate, income) (Carpenter & Lange, 2002).

2.2.2 Financial Intermediation Theory

Current financial intermediation theory builds on the notion that intermediaries serve to reduce transaction costs and informational asymmetries (Diamond, 1984). As developments in information technology, deregulation, deepening of financial markets, etc. tend to reduce transaction costs and informational asymmetries, financial intermediation theory shall come to the conclusion that intermediation becomes useless. This contrasts with the practitioner's view of financial intermediation as a value-creating economic process. It also conflicts with the continuing and increasing economic importance of financial intermediaries. From this paradox, we conclude that current financial intermediation theory fails to provide a satisfactory understanding of the existence of financial intermediaries.

Different participants in financial markets firms, financial intermediaries, rating agencies, and investors typically have varying amounts of information about, or differing abilities to determine, the value of securities offered in the market. Two types of asymmetric information problems commonly arising for non-financial firms include the following: a firm issuing a security has more information about the potential cash flows associated with the security than do investors; some investors have more information about a security's value (or better ability to value the security) than other investors; i.e., some investors are "informed" whereas others are "uninformed." (Hirschleifer & Riley, 1979). The relevance of this to the study is that the principle purpose of a bank is to lead money for a given rate of interest therefore a bank is justified interest on its role of financial intermediation. Different financial institution charge different rates and therefore this leads to different interest rate spreads.

2.2.3 Classical Theory

The classical theory of interest rates applies the classical theory of economics to determining interest rates. Classical theory of interest rates compares the supply of savings with the demand for borrowing (Oost, 2002). Using supply and demand curves the equilibrium rate is calculated by determining the curves intersection point. Thus if savings are greater than investments the interest rate drops until they reach equilibrium and vice versa, if savings are less than investment the interest rate increases until the reward for savings encourages increased savings rates causing the market to again reach equilibrium (Rogers, 1985). However the classical theory of interest rates fails to account for factors besides supply and demand that may affect interest rates such as the creation

of funds, the importance of income and wealth and changes in the primary borrowers in an economy.

2.2.4 Rational Expectations Theory

The rational expectations theory of interest rates is based on the idea that people formulate expectations based on all the information that is available in the market. Rational expectation theory holds that the best estimation for future interest rates is the current spot rate and that changes in interest rates are primarily due to unexpected information or changes in economic factors. The rational expectations theory can be incorporated with the loanable funds theory in order to better consider the available information with the economy. The limiting factors of rational expectation theory are mostly related to the difficulty in gathering information and understanding how the public uses its information to form its expectations (Moore, 1988).

2.3 Determinants of Financial performance of Mortgage Banks

2.3.1 The Market Value of a Company

The value of shareholders, defined as market value of a company is dependent on several factors: the current profitability of the company, its risks, and its economic growth essential for future company earnings (Chiorazzo, Milani and Salvini, 2008). According to D'Souza and Lai (2009) financial indicators based on accounting information are sufficient in order to determine the value for shareholders. A company's financial performance is directly influenced by its market position. Profitability can be decomposed into its main components: net turnover and net profit margin. Jones & Hill

(2008) argues that both can influence the profitability of a company one time. If a high turnover means better use of assets owned by the company and therefore better efficiency, a higher profit margin means that the entity has substantial market power.

2.3.2 Risk and Growth

Montgomery (2008) suggests that risk and growth are two other important factors influencing a firm's financial performance. Since market value is conditioned by the company's results, the level of risk exposure can cause changes in its market value. Economic growth is another component that helps to achieve a better position on the financial markets, because market value also takes into consideration expected future profits.

In the scientific literature, the mentioned factors, a number of other variables that have a greater or less influence on corporate financial performance include: The size of the company can have a positive effect on financial performance because larger firms can use this advantage to get some financial benefits in business relations. Large companies have easier access to the most important factors of production, including human resources. Also, large organizations often get cheaper funding (Morgan and Samolyk, 2009).

2.3.3 Capital Structure

In the classical theory, capital structure is irrelevant for measuring company performance, considering that in a perfectly competitive world performance is influenced only by real factors. Recent studies contradict this theory, arguing that capital structure play an

important role in determining corporate performance. Stiroh (2008a) suggest that entities with higher profit rates will remain low leveraged because of their ability to finance their own sources. On the other hand, a high degree of leverage increases the risk of bankruptcy of companies. Total assets are considered to positively influence the company's financial performance, assets greater meaning less risk.

2.3.4 Sales (Turnover)

A large volume of sales (turnover) is not necessarily correlated with improved performance. Studies that have examined the relationship between turnover and corporate performance were inconclusive. The main objective of the company has evolved over time; the need for short term profit is replaced by the need for long-term growth of the company (sustainable growth). Therefore, a sustainable growth rate higher would have a positive impact on performance. For the companies listed at the stock exchange, its ability to distribute dividends is a proof of stability. However, until now there is no proof of a link between this factor and profitability, since profits can be used for purposes other than to distribute dividends (Tabak, Fazio and Cajuerio, 2010).

2.4 Interest Rate Spread and Financial Performance

A large number of studies have investigated the relationship between interest rate movements and changes in the values of firms. However, there is far from being a consensus over the impact of interest rate changes on firm performance. Studies based on US data often uncover mixed findings, suggesting that the level of exposure is limited.

Jorion (1990) examines the extent of interest rate exposure in the US multinationals using a two factor model incorporating both market returns and changes in interest rates finding that there are significant differences across industries. Jorion (1991) shows that industries such as Chemicals, Mining and Retail have significant interest rate exposure. Chemicals and Mining industries react positively to a change in the interest rate while Retail adjusts negatively, i.e. heavy industry (exporters) benefit from depreciation in the interest rate while importers (Retail) suffer.

Interest rate changes have been shown to directly affect the revenues and costs of financial institutions (Edmister and Merriken, 1989; Saunders and Yourougou, 1990). As the largest US banks have a significant proportion of their operations in foreign countries (Madura and Zarruk, 1995), interest rate changes are likely to substantially impact on their revenue and cost streams beyond the protection that is afforded by hedging.

2.5 Empirical Literature

Ngugi and Kabubo (1998) studied financial sector reforms and interest rate liberalization. Study intended to explore the sequencing and actions so far taken in the liberalization process in Kenya. Study also examined the interest rate levels, spreads and determining factors, as an indicator of financial sector response to the reform process. The study found that although much had been accomplished, the financial system was characterized by repression factors including negative real interest rates, inefficiency in financial intermediation and underdeveloped financial markets. This may indicate that the economy is facing secondary financial repression. Interest rates were more responsive to

the policy activities during the period than to the fundamentals. The study concluded that there are several loose knots that need to be tightened for the economy to experience significant positive effects of financial liberalization.

Chirwa and Mlachila (2002) investigated financial reforms and interest rate spread in the commercial banks in Malawi. The study investigated the impact of financial sector reforms on interest rate spreads in the commercial banking system in Malawi. The study used 7 commercial bank in Malawi and 6 deposit taking institutions. Using alternative definitions of spreads, their analysis showed that spreads increased significantly following liberalization, and panel regression results suggested that the observed high spreads can be attributed to high monopoly power, high reserve requirements, high central bank discount rate and high inflation.

Wensheng (2002) studied the Impact of Interest Rate Shocks on the Performance of the Banking Sector. The study intended to establish the impact of interest variation on the bank performance. Study sampled two banks and analyzed data from 1992 to 2002 a period of ten years. The study found out rise in the Hong Kong dollar risk premium, signified by a widening of the spread between Hong Kong dollar and US dollar interest rates would influence banks' profitability mainly through its impact on (i) asset quality that affects provisioning charges and (ii) net interest margin. Empirical estimates on data from 1992-2002 show the net interest margin declined in response to increases in the risk premium, because deposit interest rates were more sensitive to changes in the risk

premium than the lending rate. A change in the domestic interest rate along with the US interest rate had little impact on the margin in the period under study.

Boldbaatar (2006) examined commercial banks' interest rate spreads between lending and deposit rates. The study intended to examine factors that affect interest rate spread in SEACEN countries banks. Study sampled 40 banks from 6 different countries covering the period from 4th quarter of 1998 until 4th quarter of 2004. Data was obtained from financial statements which were distributed to member central bank. The study revealed that banks' spreads are influenced by bank specifics, market forces and the regulatory environment. The findings of the study indicate that the factors that increase the spread in the selected SEACEN countries include market concentration and credit risks. However, bigger banks tend to operate with lower spreads due to better managerial efficiency. Reserve requirements are also costly for customers but statutory reserve remuneration appears to mitigate this burden effectively, at least in some countries. Consolidation through mergers and acquisitions can give banks the market power to operate with higher spreads, contributing to long term stability and profitability of banks.

Grenade (2007) studied determinants of commercial Banks interest rate spreads in Eastern Caribbean Currency Union. A trend analysis of commercial banks' interest rate spreads in the Eastern Caribbean Currency Union (ECCU) over the period 1993 to 2003. The study sampled 8 foreign banks and 8 indigenous banks. Study employed panel data techniques to measure the relevance of micro and macro factors in determining commercial banks interest rate spread over the period. Study found that, first, spreads

have been strong and persistently showing little signs of narrowing and second, foreign owned banks have been operating with larger spreads compared to their indigenous counterparts. The results also indicated that the observed spreads can be attributed to the high level of market concentration, high operating costs and non- performing loans and the central bank's regulated savings deposit rate.

Gavin (2010) studied the factors affecting banking sector interest rate spread in Kenya. This study sought to establish the factors that influence interest rate spreads in commercial banks in Kenya. The study adopted a descriptive and quantitative research design on a sample of 15 commercial banks in Kenya which accounted for 85% of all the loans disbursed between 2002 and 2009. The study used secondary data obtained from the Banking Survey publication, Africa Development indicators and the Central Bank of Kenya reports. Study found that intermediary efficiency is affected by bank market share of assets, overheads, and return on assets, liquidity, and market share of loans and proportion of non interest income to total income. There is evidence of capital adequacy ratio, treasury bills rate and the discount rate also having a significant impact on interest rate spreads. The study could not find evidence to support the impact of market share of deposits, inflation and cash reserve ratios on banking interest rate spreads. The study concludes that the bank-specific factors are the most significant factors influencing interest rate spreads of commercial banks in Kenya than macroeconomic factors. It reveals that there are two types of spread; one influenced by commercial bank ability to mobilize funds at a lower cost and one influenced by high non operational costs

(overheads). Interest rate spreads influenced by ability to mobilize funds at a low cost are usually associated with large banks by market share of assets.

Ngetich and Wanjau (2011) carried study on the effects of interest rate spread on the level of non-performing assets in Kenya commercial banks. Study sought to establish the effects of interest rate spread on the level of nonperforming Assets in commercial banks in Kenya. The study adopted a descriptive research design on a sample of all commercial banks in Kenya operating by 2008 which were 43 in number. The study used questionnaires to collect data from primary source data sources and secondary data, collected from Bank supervision report, to augment the primary data findings. Study used both quantitative and qualitative techniques in data analysis to establish relationship between the interest rate and loan non-performance. The study found that interest rate spread affect performance assets in banks as it increases the cost of loans charged on the borrowers, regulation on interest rates have far reaching effects on assets non-performance, for such regulations determine the interest rate spread in banks and also help mitigate moral hazards incidental to NPAs.

Ngugi (2013) investigated the impact financial intermediaries' inefficiency. Data was collected from 43 financial institutions operating in Kenya economy and analyzed using various methods. The study found that the wedge between the lending and deposit rates also proxy's efficiency of the intermediation process. For example, under perfect competition the wedge is narrower, composed only of the transaction cost, while in an imperfect market, the wedge is wider, reflecting inefficiency in market operation.

Inefficiency in the intermediation process is a characteristic of a repressed financial system. This is because in a control policy regime selective credit policies involve substantial administrative costs, and interest rates with set ceilings fail to reflect the true cost of capital. Such a policy regime constrains the growth of the financial system in terms of diversity of institutions and financial assets and encourages non-price competition.

Were and Wambua (2013) carried out a study to establish determinants of interest rate spread of Kenya commercial banks. Study intended to investigate the determinants of interest rate spreads in Kenya's banking sector. Study collected data from all 44 commercial banks. The empirical results showed that bank-specific factors play a significant role in the determination of interest rate spreads. These include bank size based on bank assets, credit risk as measured by non-performing loans to total loans ratio, liquidity risk, return on average assets and operating costs. The impact of macroeconomic factors such as real economic growth and inflation is not significant. Similarly, the impact of policy rate as an indicator of monetary policy is found to be positive but weak. On average, big banks have higher spreads compared to small banks.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology as a way to systematically solve the research problem. It involves; drawing the research design, determination of the population, sampling, data collection and data analysis.

3.2 Research Design

This research is descriptive in design; descriptive research includes surveys and fact finding enquiries of different kinds (Kothari, 2004). Therefore it was used to find out and collect facts in the market and describe the causal linkage between mortgage interest rates and growth of the mortgage industry in Kenya. It was appropriate to use this design because the research aimed to establish the actual situation in the mortgage market in regards to fixed interest rate mortgages effect. The researcher had to employ more of secondary data as compared to primary data.

3.3 Population and Sampling

Target population is the specific population about which information is desired. According to Ngechu (2004), a population is a well defined or set of people, services, elements, events, group of things or households that are being investigated. The target population was comprised of the 44 commercial banks in Kenya as attached in appendix one. The study focused on the commercial banks or bank subsidiaries that specialize in mortgage financing.

3.4 Data Collection

The study shall use data from secondary sources. Statement on financial performance was to be extracted from the financial statements for the commercial banks for a five year period (2009 to 2013). Weighted average deposit rates and weighted average lending rates data was established from the Central bank of Kenya and Kenya national bureau of statistics databases.

3.6 Data Analysis

After data collection data analysis was done. The quantitative data in this research was analyzed by descriptive statistics using statistical package for social sciences (SPSS V 19.0). Descriptive statistics includes mean, frequency, standard deviation and percentages. In addition to measures of central tendencies, measures of dispersion and graphical representations will be used to tabulate the information. Findings were to be presented in tables, charts and graphs. Linear relationship between dependent and independent variables will be determined through panel approach for the regression analysis and inferences was to be drawn based on the regression model below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \dots \dots \dots \text{Eq (ii)}$$

Where:

Y= Financial Performance or Mortgage Banks in Kenya over time measured as ROA and ROE

X₁= is the interest rate spread

X₂= is the liquidity = Liquid assets/ Total Assets

X₃= is the provision for loans = Provision for loans/ Total Earning Assets

X₄= is the market power

X_5 = is the operating efficiency = Operating costs/ Total operating income

β_i = Coefficients of the independent variables

β_0 will be estimated by OLS (Ordinary Least Squares) method.

A key statistic is R squared which will show the percentage variance in the dependent variable (Mortgage banks performance) that can be explained by the independent variables (Mortgage industry Interest rate spread).

3.7 Test of significance

T-tests was used to test the significance of the relationship between mortgage banks financial performance and interest rate spreads. Also, the F-Statistic (ANOVA table) was to be employed.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter presents the research findings on the study on the relationship between financial performance of commercial banks in Kenya and interest rate spreads, liquidity risks, provision for loans, market power and operating efficiency. The data was collected on a sample of 42 commercial banks for the period ranging from 2009 to 2013. In addition, this chapter discusses the results of the analysis and findings of the study with reference to the study objective i.e. to determine the relationship between the effects of mortgage interest rates on the performance of Mortgage banks in Kenya. The Financial Performance of Mortgage Banks in Kenya over time is measured by ROA (Return on Assets), ROE (Return on Equity) and profitability

4.2 Descriptive Statistics

Descriptive statistics was used to provide insights into the pattern of the trend of the data. The descriptive statistics techniques used in the study include mean, mode and standard deviations, variance, maximum and minimum.

Table 4.1: Descriptive Statistics

	N		Mean	Mode	Std. Deviation	Minimum	Maximum
	Valid	Missing					
ROA	215	0	.4047	.50	.11429	.20	.60
ROE	215	0	.3249	.25	.11458	.22	.55
Liquidity	215	0	.2256	.25	.05638	.15	.33
Provision for Loans	215	0	.3521	.25	.11572	.20	.55
Market Power	215	0	.4470	.01	.03122	.01	.10
Operating Efficiency	215	0	.2702	.30	.04984	.15	.35
Interest rate spreads	215	0	.0633	.05 ^a	.01053	.05	.08

a. Multiple modes exist. The smallest value is shown

Table 4.1 above shows the descriptive statistics for the variables under study with 215 observations each from the time series data and industry. As indicated in table 4.1 above, the returns on assets had a mean of 0.40497, the return on equity had a mean of 0.3249, mean bank liquidity was at 0.2256, mean provision for bad loans was at 0.3521, mean market power was 0.4470, mean operating efficiency was 0.2702 and mean interest rate spreads was 0.0633.

4.3 Interest Rate Spreads

The objective of the study was to analyze the level and trends in interest rates spreads and their effects on financial performance of Mortgage Banks in Kenya. Secondary data obtained from the Central bank of Kenya and Kenya national bureau of statistics databases which was compiled and analyzed in the Statistical Package for Social Sciences

(SPSS). Figure 4.1 below presents the movement in interest spreads over the years under study.

Figure 4.1: Interest Rate Spreads

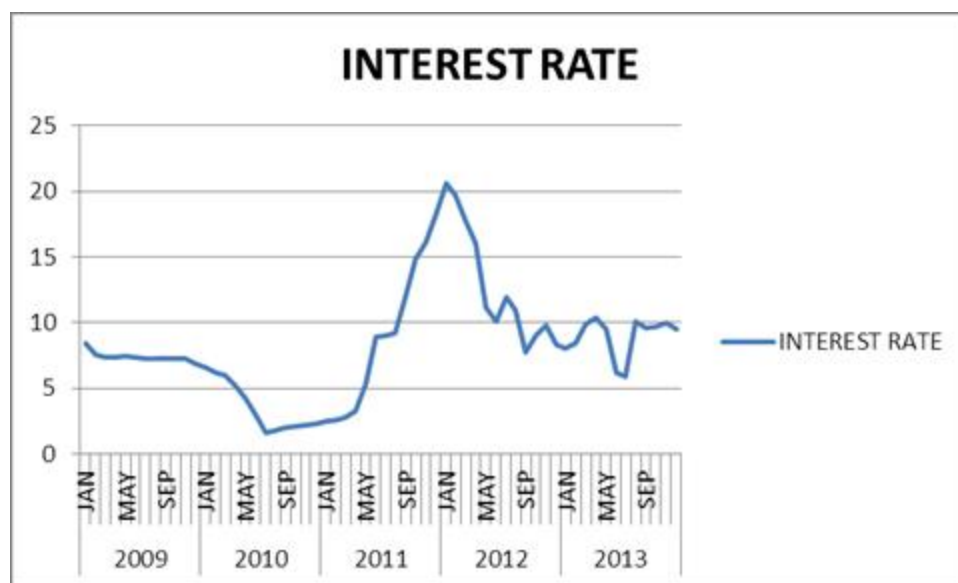


Figure 4.1 above show that there was a general gradual decline in interest rates in 2009 and 2010. This is the case even for period that witnessed monetary easing, with the policy rates having been reduced from 8.5% in January 2009 to 5.75 % in January 2011, complimented by lowering of the cash reserve ratio from 5% to 4.5% in June 2009. The interest rates increased sharply between 2011 and 2012 but started to decline in 2013 due to tightening of CBK's monetary policy.

In addition, during this period, interest rate on the risk free treasury bills declined from an average of about 8.46% in January 2009 to a low of about 1.63% in July 2010 whereas the average lending rate declined marginally from 14.78% to 14.29% over the same period. On the contrary, the shift to monetary policy tightening that saw CBR increased

to 18% in December 2011 was almost instantaneously followed by a corresponding shift in lending rates to an average of about 20%. Arguably, the lending rates are relatively more flexible upwards but sticky downwards in response to changes in policy conditions. In general, the rigidity in the lending rates, particularly the downward inflexibility of the lending rates remains a subject of debate.

Moreover, an examination of interest rate spreads by banks size (figure 4.4) shows that interest rates spreads are higher for larger banks than for medium and small banks¹. On average, small banks have lower spreads. This could possibly be due to the fact that small and low-capitalized banks find it relatively difficult to raise funds and have to increase their deposit rates to attract funds and compensate for the perception that they are more risky relative to large, more liquid, well capitalized banks that are perceived to be ‘too-big-to-fail’². The latest classification of banks is based on weighted market size index—large (5% above), medium (1%-5%) and small (below 1%) (See Bank Supervision Annual Report 2011 by Central Bank of Kenya).

4.4 Relationship between Interest rate spreads and bank performance

OLS Regression was conducted using interest rate spreads as one of the determinant variables of ROA and ROE.

As presented in table 4.2 below, 25.5% variations in return on assets (ROA) is explained by variations in the identified determinants. From the model, there is a statistically significant positive relationship between liquidity ($\beta=0.684$, $t= -5.525$, $p<0.05$) and bank return on assets. There is also a statistically significant positive relationship between operating efficiency ($\beta=0.594$, $t =-4.193$, $p<0.05$) and return on assets. The model

establishes statistically significant positive relationship between market power ($\beta=0.782$, $t=3.484$, $p<0.05$) and return on assets.

Table 4.2: ROA and its determinants

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.505 ^a	.255	.237	.09982

a. Predictors: (Constant), Interest rate spreads, Operating Efficiency, Market Power, Liquidity, Provision for Loans

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.713	5	.143	14.304	.000 ^a
	Residual	2.083	209	.010		
	Total	2.795	214			

a. Predictors: (Constant), Interest rate spreads, Operating Efficiency, Market Power, Liquidity, Provision for Loans

b. Dependent Variable: ROA

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.622	.071		8.746	.000
	Liquidity	.684	.124	-.337	-5.525	.000
	Provision for Loans	-.051	.061	-.052	-.848	.397
	Market Power	.782	.225	.214	3.484	.001
	Operating Efficiency	.594	.142	-.259	-4.193	.000
	Interest rate spreads	.547	.662	.115	1.883	.061

a. Dependent Variable: ROA

The study establishes a positive relationship between interest rate spreads ($\beta=0.547$, $t=1.883$, $p>0.05$) and return on assets and a negative relationship between provision for loans ($\beta=-0.051$, $t=-0.848$, $p>0.05$) and return on assets.

Table 4.3: ROE and its determinants

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489 ^a	.239	.220	.10116

a. Predictors: (Constant), Interest rate spreads, Operating Efficiency, Market Power, Liquidity, Provision for Loans

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.670	5	.134	13.103	.000 ^a
	Residual	2.139	209	.010		
	Total	2.809	214			

a. Predictors: (Constant), Interest rate spreads, Operating Efficiency, Market Power, Liquidity, Provision for Loans

b. Dependent Variable: ROE

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.319	.072		4.421	.000
	Liquidity	.611	.125	-.301	-4.873	.000
	Provision for Loans	-.042	.061	.043	.690	.491
	Market Power	.962	.228	.262	4.228	.000
	Operating Efficiency	.541	.144	.235	3.767	.000
	Interest rate spreads	.580	.671	-.090	-1.461	.146

a. Dependent Variable: ROE

As presented in table 4.3 above, there is a statistically significant positive relationship between liquidity ($\beta=0.611$, $t=-4.873$, $p<0.05$) and return on equity. There is a statistically significant positive relationship between market power ($\beta=0.962$, $t=4.228$, $p<0.05$) and return on equity. There is also a statistically significant positive relationship

between operating efficiency ($\beta=0.541$, $t=3.767$, $p<0.05$) and return on equity. The model shows a positive relationship between interest rate spreads ($\beta=0.580$, $t=-1.461$, $p>0.05$) and return on equity and a negative relationship between provision for non performing loans ($\beta=-0.042$, $t=0.690$, $p>0.05$) and return on equity.

Table 4.4: Correlation of Performance and its determinants

Correlations

	ROA	ROE	Liquidity	Provision for Loans	Market Power	Operating Efficiency	Interest rate spreads
ROA	1						
ROE	.698**	1					
Liquidity	.396**	.292**	1				
Provision for Loans	-.001	-.039	-.013	1			
Market Power	.594**	.535**	-.093	.083	1		
Operating Efficiency	.246**	.236**	.089	-.170*	.143*	1	
Interest rate spreads	.143*	.167	-.141*	-.113	.584	.130	1

** . Correlation is significant at the 0.01 level (2 tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

There are statistically significant strong positive relationships between ROA and ROE ($r = 0.698$), market power and ROA ($r=0.594$) and market power and ROE ($r=0.535$). The study notes statistically weak positive relationships between liquidity and ROA ($r=0.396$) and liquidity and ROE ($r=0.292$). There are statistically significant weak positive relationships between operating efficiency and ROA ($r=0.246$).

4.5 Summary and Interpretation of Findings

The study findings reveal that interest rate spreads vary from one bank to another with big banks charging high interest rate spreads as compared to small banks. The positive relationship between bank size and the spreads is thus shaped by the nature and structure of Kenya's banking sector. Additionally, there is a positive relationship between return

on average assets and interest rate spreads. The positive effect could be interpreted as an indication of profit-maximizing behavior whereby banks with higher profitability relative to average assets are also inclined to charge higher borrowing rates relative to the deposit rates. There is also a positive relationship between bank market power and interest rate spreads, further confirming the positive relationship observed under the analysis that is, the bigger the bank size, the higher the spread hence high performance. This finding is robust, yielding the highest t-values. However, the magnitude of the impact is rather small given the size of the coefficient.

In addition, the positive relationship between interest rate spread and bank size might explain why big banks in Kenya perform much better than small banks in terms ROA, ROE and Profitability. But this may be due to other underlying factors besides size. The increase in interest rate spreads over the years with a huge increase in 2011 and part of 2012 may be attributed to high exchange rates and inflation rates over the same period. The decline in interest rate spreads was experienced in 2013 and this may be attributed to adjustment in CBK policies like reduced CBR. Some scholars suggest that a company's financial performance is directly influenced by its market position (Chiorazzo, Milani & Salvini, 2008; D'Souza & Lai, 2009). This could be interpreted to mean market size.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions drawn from the data findings analyzed and presented in chapter four. The chapter is structured into summary of findings, conclusions, Policy recommendations and areas for further research.

5.2 Summary of findings

The main aim of the study was to establish the effect of mortgage interest rate spreads on the performance of Mortgage banks in Kenya with the financial performance indicators as ROA, ROE and Profitability. The study found out that the regression equation for the period 2009 to 2013 to determine the relationship between interest rate spread and financial performance of commercial banks in Kenya. Other control variables were liquidity, provision for bad loans, market power and operating efficiency.

From the regression model for the five years, the study found out that there exist a positive relationship between interest rate spread and performance (ROA, ROE and Profitability) of commercial banks in Kenya. The study model shows that 25.5% variations in return on assets (ROA) are explained by variations in the identified determinants and 23.9% of variations in return on assets (ROA) are explained by variations in the identified determinants. The study establishes statistically significant positive relationship between liquidity and bank return on assets and return on equity, operating efficiency and return on assets and return on equity and market power and return on assets and return on equity.

In addition the study found that interest rates spreads have been increasing over the years under study with a slight decrease in 2013. Also, interest rate spreads are higher for larger banks than for medium and small banks. On average, small banks have lower spreads as explained by Were and Wambua (2013). This could possibly be due to the fact that small

and low-capitalized banks find it relatively difficult to raise funds and have to increase their deposit rates to attract funds and compensate for the perception that they are more risky relative to large, more liquid, well capitalized banks that are perceived to be ‘too-big-to-fail’. If the higher spreads are merely interpreted as an indicator of inefficiency, one can easily be tempted to conclude from the positive relationship between bank size, type of bank, type of loans and interest rate spreads that big banks are less efficient, which may not necessarily be the case. The results are not surprising given that big banks are associated with market power they control a bigger share of the market both in terms of deposits and loans and advances. They also enjoy good reputation and trust (perceived to be more stable, reliable, well-managed, among other positive attributes) and hence can easily mobilize deposits even at lower rates and attract higher loan demand even at higher rates.

5.3 Conclusions

The study concludes that there is a positive relationship between interest rate spread and ROA and ROE which is consistent with the findings by Edmister & Merriken (1989); Saunders & Yourougou (1990); Madura & Zarruk (1995); Gavin (2010); Ngetich & Wanjau, (2011). This result contradicts European banks findings by Merceica *et al.* (2007) of inverse relationship between interest rate spread and profitability. The study also concludes that interest rates spreads are higher for larger banks than for medium and small banks when size is measured by market power. On average, small banks have lower spreads. In addition, the independent variable, that is, the interest rate spreads increasing over the years under study with a slight decline in 2013. Also, ROA and ROE for the Mortgage Banks have shown an increasing trend over the years although, the financial performance figures and rates do not correspondingly increase as there are instances of increase in financial performance and other instances of decline in the financial performance.

The study establishes that interest rate spreads in Kenya has been on the rise though there are periods that they have declined. In general, the study finds that exchange rate volatility and inflation rates are linked to interest rate spreads such that high fluctuations in interest spreads are as a result of fluctuations in exchange rates and inflation rates which affect financial performance of mortgage banks in Kenya.

5.3 Policy Recommendations

The interest rate spread plays an important role in determining the financial performance of Mortgage Banks in Kenya's. The Central Bank should endeavor to reduce Interest rate spreads as a way of reducing the spread as commercial Banks tend to transfer the cost of borrowing from the central bank to its customers and hence an increase in the spreads. The policy frameworks that the CBK has undertaken in curbing increases in lending rates is a step in the right direction but follows ups should be done to ensure that Commercial Banks reduce lending rates for long-term sustainability.

In addition, the Central Bank should apply stringent regulations on interest rates charged by banks so as to regulate their interest rate spread. Although competition in the banking sector has increased over time, it still needs to be further enhanced and supported by policies that encourage and foster competition in the financial sector. These should be complemented with measures to promote the growth and image of small and medium sized banks in a bid to enhance their ability to penetrate the market so as to break market dominance by a few banks. These could include public education about the stability and soundness of small and medium banks and the industry as whole. Such efforts can be undertaken jointly between the regulator, the industry and individual banks.

Moreover, banks should explore internally and industry-driven strategies that militate against or counter some of the bank-specific factors associated with higher spreads, even as further policies that may be deemed important are explored. These include a mix of strategies that could range from diversification of products to reduce reliance on interest

income and the associated risks, to investment in cost-saving and efficient forms of technology.

Also, Commercial Banks should be encouraged to improve their liquidity by diversifying their sources of funds for example issuing of bonds. Internally generated funds helps to reduce risks and cost of funds leading to low interest rate spreads which in turn enhances borrowings and financial performance.

5.4 Limitation of study

This study only focuses on the market and macroeconomic determinants of Banking Sector interest rate spreads. This is just one side of the determinants of financial performance. There are other determinants whose data is not available in the public domain and hence there is need to investigate such determinants of financial performance. There is need for further investigation of the influence of bank specific characteristics as these can influence financial performance.

The study uses a linear regression model to establish the relationships between financial performance and its determinant. The study does not address the issue of dual causality in the determinant itself and between interest spreads and financial performance.

The study findings are as accurate as the data used and the regression analysis. This research has not been able to establish the accuracy of the data used beyond the authenticity of the source. This means it cannot be deduced whether the records are accurate and if so, to what extent.

Also, a limitation for the purpose of this research was regarded as a factor that was present and contributed to the researcher getting either inadequate information. The main limitations of this study were; some data was not readily available. This reduced the probability of reaching a more conclusive study.

5.5 Suggestion for further studies

In addition, further studies in this area should investigate other factors that influence the financial performance of Mortgage Banks in Kenya other than interest rate spread as the model explains 65.9% of variations in financial performance which suggests that 34.1% of the variations in market returns are possibly explained by other factors not considered in this study.

Moreover, further studies should be conducted in this area looking at the dependent variables in isolation. ROA, ROE and Profitability and how they are influenced by factors like Interest rate spreads should be considered in isolation.

In this study, financial performance determinant i.e. interest rate spreads is the independent variable. This determinant is affected by various other factors. There is therefore the need to further investigate the characteristics that affect the independent variable interest rate spreads especially the annual macro-economic variables.

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Appendix 1: List of commercial banks in Kenya as at December 2012

1. African Banking Corporation Ltd
2. Bank Of India
3. Bank of Africa Kenya Ltd
4. Bank Of Baroda (Kenya) Ltd.
5. Barclays bank of Kenya Ltd
6. CFC Stanbic Bank Limited
7. Chase Bank Kenya Ltd
8. Charterhouse Bank Ltd
9. Citibank N A Kenya
10. Co-operative Bank of Kenya Ltd
11. Commercial Bank of Africa
12. Consolidated Bank
13. Credit Bank Ltd
14. Development Bank Of Kenya Ltd
15. Diamond Trust Bank
16. Dubai Bank Kenya Ltd
17. Ecobank Kenya Ltd
18. Equatorial Commercial Bank Limited
19. Equity Bank
20. Family Bank ltd
21. Fidelity Commercial Bank Ltd
22. Fina Bank
23. First community Bank Ltd
24. Giro Commercial Bank Ltd
25. Guardian Bank Ltd.
26. Gulf African Bank Ltd
27. Habib Bank A.G Zurich
28. Habib Bank Ltd

29. Imperial Bank Ltd
 30. Investments & Mortgages Bank Limited – I&M Bank
 31. Jamii Bora Bank Ltd
 32. K-Rep Bank
 33. KCB Bank
 34. Middle East Bank (K) Ltd
 35. National Bank
 36. NIC Bank
 37. Oriental Commercial Bank Ltd.
 38. Paramount Universal Bank Ltd
 39. Prime Bank
 40. Standard Chartered Bank Kenya Ltd
 41. Trans-National Bank(K) Ltd
 42. UBA Kenya Bank Ltd
 43. Victoria commercial Bank Ltd
- Non-Banking Financial Institution
1. Housing Finance Company Ltd