THE EFFECT OF INTEREST MARGINS ON PROFITABILITY OF COMMERCIAL BANKS IN KENYA

BY

FREDRICK MWENDA MUTUNGI

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE MASTER OF BUSINESS ADMINISTRATION DEGREE, UNIVERSITY OF NAIROBI

NOVEMBER 2012

DECLARATION

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

Signature: _____ Date: _____

FREDRICK MWENDA MUTUNGI

D61/8833/2006

This project has been submitted for presentation with my approval as University of Nairobi supervisor.

Signature _____ Date: _____

DR. JOSIAH ADUDA

CHAIRMAN,

DEPARTMENT OF FINANCE AND ACCOUNTING

UNIVERSITY OF NAIROBI

DEDICATION

This work is dedicated to my parents Hon Justice John Mutungi and Prof (Mrs) Alice Mutungi for their love, support and encouragement which have been my strength.

ACKNOWLEDGEMENT

I thank God for giving me the wisdom and courage and for guiding me throughout my life for without Him I would not have come this far.

Secondly, special thanks go to my supervisor, Dr. Josiah Aduda, for providing unlimited, invaluable and active guidance throughout the study. His immense command and knowledge of the subject matter enabled me to shape this research project to the product that it is now.

Thirdly, I also thank my family for letting me use their valuable time to work on this project. It is my hope that their sacrifice has finally paid off.

Finally, I owe my gratitude to a number of people who in one way or another contributed towards completion of this project especially my fellow colleagues at work and students.

ABSTRACT

Despite the removal of restrictions and reforms in the banking sector to facilitate the adoption of a market oriented interest rate policy, interest rates are yet to become fully responsive to the market. The Central Bank of Kenya as the regulatory authority of the country's banking and financial system has been urging the banks to reduce the interest rate spread (IRS) in a rational manner. Despite these efforts, the IRS has remained high in the banking sector of the country. The objective of the study is to determine the relationship between interest margins and profitability of commercial banks in Kenya.

This study adopted an explanatory approach by using panel research design to fulfill the research objective. The population of this study comprised of all licensed commercial banks in Kenya between the period of 2006 and 2010. A sample of 35 banks was selected for the study. The study employed secondary data. The data was collected from the Central Bank of Kenya and Banking survey 2010. The collected data was analyzed using descriptive statistics, graphs, multiple linear regression analysis and inferential statistics.

The study found that that both net interest margin and return on assets rose over the period under analysis. The study further found that the relationship was not significant given the non-significance of the F-statistic (F=4.550, p=0.123). The study also found that net interest margin had a negative effect on return on assets (-3.926). However, the impact was not significant at 5% level (p = 0.123). The study concludes that commercial banks in Kenya were making better investment decisions over the period of study. The study further concludes that commercial banks in Kenya were profitable over the period covered in the study. Additionally, the study concludes that net interest margin does not have a significant impact on bank profitability.

The levels of net interest margins among commercial banks, though positive, were low. The study recommends that banks should look for better and more ways of investing their funds in order to gain larger net interest margins. The study recommends that there is need for commercial banks in Kenya to devise other ways of driving up their profitability. This is because, over the period of analysis, the overall profitability of banks was low, declining even in some years and it is therefore important that measures be devised to drive up profitability in the banking industry.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

CBK-Central Bank of Kenya

IMF-International Monetary Fund

IRM-Interest Rate Margin

IRS-Interest Rate Spread

MFIS-Micro Finance Institutions

NIMS-Net Interest Margins

NPL-Non Performing Loans

OECD-Organisation for Economic Co-operation and Development

SSA-Sub-Saharan Africa

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE
INTRODUCTION

1.1 Background

Commercial banks' activities greatly rely on their intermediation services, filling the gap between suppliers and demanders of funds. Their profitability is partly due to the difference in interest rates charged on loans and what is paid to suppliers of funds that is the interest rate spread. Pyle (1971) argues that the larger the spread between loan and deposit rates, the more likely the necessary condition for intermediation to occur can be met. Earlier explanations that allow positive spread to be maintained rest on the ability of commercial banks to minimize transaction costs in loans originating through their intermediation services (Boucher, 1996). Benston and Smith (1976) suggest that transaction costs are central to the theory of financial intermediation and the ability of the financial intermediary to exploit the returns to scale implicit in the structure of the transaction costs by purchasing large blocks of securities, repackaging, and reselling them at a lower cost supports the existence of intermediaries. to informational asymmetries prevailing in the economy (Ramakrishnan and Thakor, 1984).

The factors that determine the level of commercial bank lending rates are important concerns to policy makers, the banking industry and the public at large. From a policy perspective, lower lending rates are desirable, as they tend to have a positive influence on new and existing investments, improve the competitiveness of Kenyans businesses and contribute to growth and development. These welfare effects would lead to generally higher living standards and financial surpluses. On the other hand, developed country markets have shown that profits in the commercial banks tend to rise as interest rates increase (Ramakrishnan and Thakor, 2000). The rapid expansion

in the local industry since 1990 would also lend itself to the perception that such a relationship would also hold in the Kenyan context. There is little wonder therefore that the commercial interest rates charged by local banks have been a sensitive and recurring policy issue in Kenya and one which requires an objective examination of all the factors behind the structure of commercial bank lending rates (Jayaraman, and Sharma, Rajesh ,2003). The market for commercial loans from commercial banks is competitive and rates on these loans have tended to respond to reductions in deposits rates and other costs. Tennant, D (2006), indicated that compensation for the direct cost incurred in loan administration and the risk profile of the borrower also plays a great role on determining commercial bank lending rates. The stance of the competition, the overall risk profile of the portfolio and the liquidity of the commercial banks would determine the final cost to the borrower. .Investors negotiate with banks for the best terms available and, where possible, shift their business to take advantage of the best financing package (Njoka, 2003).

The impact of variations in commercial lending rates on banks' profitability largely depends on the degree of responses of asset and liability rates. In general, since both sides of banks' balance sheets are affected by commercial bank lending rates in a parallel fashion, the net impact on banks' profitability can be deduced by tracing the responses of both assets and liabilities as market interest rates change (Gemmill and Thomas 2004),. The impulse response functions show that low and lagged response of lending rates contribute to the decline in banking spread following an increase in money market rates, thus, adversely affecting banking activities. Commercial banks lending policy determine who the target customer is. It is widely believed that fluctuations of lending rates exert significant influence on the activities of commercial banks in Kenya (Chirwa and Mlachila (2004). Kenya's economy has experienced

tremendous growth in recent years, with real GDP growing at 7.1% in 2009. This achievement is collaborated by the improved performance of the Banking Sector in Kenya. The Sector remained stable in 2009 with positive developments recorded in all key financial indicators. Total assets expanded by 19.5% from Kshs. 640 billion as at December 2009 to Kshs. 760 billion as at December 2010. As a result of the improved performance, the level of non-performing advances declined from the previous year's level of 99 billion to 95 billion as at end of December 2009.

The difference between lending and deposit interest rates, known as the interest rate spread (IRS), is an important determinant of the efficacy of the financial system in a country. There are, however, alternative ways of measuring IRS such as the difference between the ratio of interest received and all interest bearing assets and the ratio of interest paid and all interest earning liabilities. A high (IRS) acts as an impediment to the expansion of financial intermediation necessary for growth and development of an economy. It is often argued that the higher the (IRS) the higher would be the cost of credit to the borrowers for any given deposit rate. Alternatively, a high IRS raises the cost of investments and limiting growth potential of the economy. Moreover, problems become more acute for small businesses, household enterprises and rural industries which are vital to promoting equitable growth and reducing poverty in low income countries.

The net interest margin of banks is defined as the ratio of net interest income total earning assets of banks. There are many studies on elements affecting net interest margins in banking sectors. Ho and Saunders (1981) conclude that the degree of competition of the markets and the interest rate risk to which the bank is exposed are two basic components of the interest margin. Allen (1988) argues that credit risk is important to setting interest margin. McShane and Sharpe (1985) associate the interest

rate risk of the money market with the interest margin. Angbazo (1997) considers both credit risk and interest rate risk as factors affecting interest rate risk. Maudos and Guevara (2004) identify a number of determinants on interest margins and show that the degree of competition and operational costs are both important to the interest margin.

Demirguc-Kunt, Laeven and Levine (2003) analyze the impact of bank regulations, concentration, macroeconomic factors, and national institutions on bank net interest margins using data from over 1,400 banks across 72 countries over the years 1995-1999. The findings show that bank-specific characteristics including bank size, liquidity risk, overhead costs, fee-income and market share influence significantly bank interest margins within countries. Wide spreads seem to be related to small banks, to having low fraction assets, to those having a relatively low amount of equity, to those without significant fees income and to market power. Moreover, the empirical findings indicate a statistically positive relationship between inflation and interest margins and high regulatory conditions, especially on bank entry, bank activities, and bank freedom to conduct their business.

The recent literature links the efficiency of a financial sector with a country economic growth. Developing countries, following IMF and World Bank inspired programmes, have sought to improve the performance of their financial sector with the aim to improve the country's overall economic performance. A strong and stable banking system has been advocated as being the cornerstone in the many liberalization programmes (Saunders & Sommariva, 1993).

According to the International Monetary Fund (IMF) Structural Adjustment Programme, which was implemented in Tunisia in 1987, redesigned the Tunisian

financial landscape. This plan aimed at establishing a market-based financial sector to boost competition within banks through improved mobilization of savings, enhanced market-based allocation of resources and hence more efficient risk-management capabilities. The strengthening of the financial system was articulated around various reforms inspired by the IMF. These were: the gradual liberalization of interest rates; the complete abolishment of preferential interest rates, which used to be given to priority and some public enterprises, and the elimination of prior authorization by the Central Bank to commercial banks to allocate credits. Prudential regulation of the banking system was introduced in 1987 and it was later set in accordance with international capital adequacy standards.

The recent literature links the efficiency of a financial sector with a country economic growth. Financial intermediation affects both saving and investment rates and the spread between this two can be proxied by banks interest margins. Therefore, bank interest spreads could be interpreted as an indicator of the efficiency of the financial system (Demigurc-Kunt and Huizinga 1999). High spreads can hinder the growth of savings and investments and imply that the cost of using the financial system may become prohibitive for certain borrowers. The impact of high spreads is likely to be more severe for developing countries where, given that capital markets are generally small and under-developed, a larger percentage of firms and individuals tend to depend on banks to meet their financial needs.

Commercial banks continue to face difficulties due to several reasons. However, the major cause of serious financial problems continues to be directly related to credit standards for borrowers, poor portfolio risk management. Credit decisions should be used on thorough evaluation of the risk condition of the lending and characteristics of the borrower. Saunders, (1996), states that banks needs to gather adequate information

about potential borrowers to be able to calibrate the bank in assessing the probability of borrower default and price the loan accordingly. Banks should go the extra mile and seek additional information from third parties like credit reference bureaus before advancing credit.

1.1.1 The Commercial Banking Industry 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 commercial banks in Kenya is paramount because they execute monetary

policy and provide means for facilitating payment for goods and services in the domestic and international trade.

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).

From the perspective of the banks, IRS shows the additional cost of borrowing that the banks take on to perform intermediation activities between borrowers and fund lenders. The IRS is also a premium for the risk that the banks undertake; it compensates for loan defaults and for risk related to cost of funding. As such, IRS as a measure of bank efficiency and determinant of intermediation cost and profitability of the banks has drawn increasing attention of researchers and policymakers in recent years in Kenya.

1.2 Research Problem

Despite the removal of restrictions and reforms in the banking sector to facilitate the adoption of a market oriented interest rate policy, interest rates are yet to become fully responsive to the market. The Central Bank of Kenya as the regulatory authority of the country's banking and financial system has been urging the banks to reduce the IRS in a rational manner. Despite these efforts, the IRS has remained high in the banking sector of the country.

From 1992, when the Kenyan banking system was liberalized, there has been intense competition among the commercial banks. This has led to banks consistently making huge profits and outdoing other sectors of the economy. Studies have tried to establish

relationships between profits made by banks relative to various aspects of the organization, size, growth, control, etc. their results may not explain fully the specifics of the risk faced by banks. Moreover, no credible statistical analysis has been undertaken to identify the factors that influence IRS in Kenya.

Several studies have been undertaken locally on the field on interest rates in commercial banks. Mwindi (2002) carried out a study on the relationship between interest rates charged by MFIS and performance of micro and small enterprises in Nairobi, and found out that the higher interest rates hinders financial performance of the Microfinance institutions. Kibe (2003) carried out a study on the relationship between interest rate spread and profitability of commercial banks in Kenya and found out that comprehensive set of bank characteristics such as size, leverage, type of business, foreign ownership, macro indicators, such as taxation and regulatory variables, financial structure variables, legal and institutional indices influence bank interest rate spread and profitability, Muriithi (2003) conducted a study on comparison of interest rates between short and long term financial debt securities while Kimutai, (2003) carried out a study between lending interest rate and financial performance of micro finance institutions in Kenya, and found out that the impulse response functions show that low and lagged response of lending rates contribute to the decline in lending spread following an increase in money market rates, adversely affecting micro financing activities and that high level of interest rates hinders financial institutions' profitability. None of these local and international researchers have focused on the determinants of the interest rate margins of commercial banks in Kenya. Moreover, no credible statistical analysis has been undertaken to identify the factors that influence IRS in Kenya. Therefore there is a gap in literature on the various factors that determine the interest rates margins among commercial banks.

This study therefore seeks to fill existing knowledge gap investigating determinants of interest rates margins in commercial banks in Kenya by answering the question, what are the determinants of interest rates margins and their impact on performance of commercial banks in Kenya?

1.3 Objective of the Study

The objective of the study is to determine the relationship between interest margins and profitability of commercial banks in Kenya

1.4 Value of the Study

This study will be of significance to the banking sector. All banks could use the knowledge derived from this study to better understand the impact of interest rate margins on profitability. In addition management and directors of banks could use results of the study to guide them in coming up with the firm's credit policy.

Government and financial policy makers will benefit from this study as they will be able to gain insight on factor influencing lending rate and formulate policies that will enable commercial bank determine effective lending rates. The CBK could use the results of this study to establish the interest rate policies in use by the commercial banks and this would help them in formulating regulatory policies for commercial banks.

Academicians will benefit from the findings of this study as it will add to the body of existing knowledge in finance. The results will establish the factors that determine the interest rate spread of commercial banks in Kenya.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents critical reviews concerning the study on issues of determinants of interest rates margins of commercial banks in Kenya. This is done through discussing, Commercial bank Lending Rates, the relevant theories, empirical and factors that determine rates in banks.

2.2 Commercial bank Interest Rates Spreads

There is a vast literature of the determinants of interest rates spreads, both on developing and developed countries. This kind of analysis mainly draws on the theoretical model of net interest margins as proposed by Ho and Saunders (1981) and extended, among others, by McCone and Sharpe (1985).In these models, known as "dealership models", the net interest margin is a function of interest rate risk and institutional factors, which affect the price of banking products. Bank Net Interest Margins are seen as a summary measure of banks' net interest rate return, reflecting both volume and mix of assets and liabilities and are set by banks to cover the cost of intermediation (Angbazo, 1997). Interest margins are therefore an important component of banks' profitability as well as an indicator of the efficiency of a country financial system.

Recent studies investigate the impact of bank regulation and market characteristics on banks interest margins and profitability. Demirguc-Kunt and Huizinga (1999) analyze data for 80 countries during the years 1988-1995; investigating a variety of determinants: bank-specific variables, such as the default risk and bank size, macroeconomic variables, such as inflation and output growth, and regulatory

components such as explicit and implicit bank taxation, financial structure, legal and institutional indicators in addition to deposit insurance regulation. Their findings show that high ratio of equity to assets, high ratio of loans to total assets, greater bank size, overhead costs, high foreign ownership and high inflation lead to increase in the bank interest margins. Nonetheless, the study documents a statistically negative relationship between implicit tax and the bank mark-up and the insignificant influence of annual rate of growth. Demigurc-Kunt and Huizinga (2001) investigate the relationship between financial development and bank performance. Using a cross-country annual data on profitability, interest margins, and financial structure for large number of developed and developing countries over the years 1990-1997, they found that financial development influences bank performance, in the sense that underdeveloped financial systems have wider margins and higher profits, whereas well-bank developed systems lead to higher degrees of competition and hence to greater efficiency and lower profits.

A number of studies have concentrated on the behavior of banks spreads in developing countries. Using a panel data with random effects, Ben Naceur and Goaid (2001) investigate the determinant of the Tunisian banking industry performance. Their results suggest that the best performing Tunisian banks are those that have accumulated a high volume of deposits relative to their assets and that have been able to reinforce their equity. Furthermore, Ben Naceur (2003) analysis of the impact of the bank's characteristics, financial structure and macroeconomic indicator on bank's net interest margins, reports that high net interest margin and profitability are related positively with relatively highly capitalized banks and banks with large overheads. NIMs seem to be negatively correlated with bank size, reflecting therefore various

degrees of inefficiencies. In addition, Ben Naceur's study indicates that inflation and growth have no influence on NIMs.

Efficient financial intermediation is an important factor in economic development process as it has implication for effective mobilization of investible resources. Consequently, banking sector efficiency plays a significant role in an economy. A major indication of banking sector efficiency is interest rate spreads, which have been found to be higher in African, Latin American and the Caribbean countries than in the OECD countries (Randall, 1998). A wide deposit-lending rate margin is not only indicative of banking sector inefficiency; it also reflects the level of development of the financial sector.

The prevailing margin between deposit-lending rates, the interest rate spreads (IRS) in an economy has important implications for the growth and development of such economy, as numerous authors suggest, a critical link between the efficiency of bank intermediation and economic growth. Quaden (2004), for example, argues that a more efficient banking system benefits the real economy by allowing 'higher expected returns for savers with a financial surplus, and lower borrowing costs for investing in new projects that need external finance'. Therefore, if the banking sector's interest rate spread is larger it discourages potential savers due to low returns on deposits and thus limits financing for potential borrowers (Ndung'u and Ngugi, 2000). Valverde et al (2004) elucidate by noting that because costs of intermediating between savers and borrowers, only a fraction of the savings mobilize by banks can be finally channeled into investments. An increase in the efficiency of banks increases these intermediation costs, and thereby increases the fraction of savings that is 'lost' in the process of intermediation. This ultimately reduces lending, investment and economic growth.

These implications of banking sector inefficiency have spurred numerous debates in developing countries about the determinant of banking sector interest rate spreads, studies have shown that there is a pervasive view amongst some stakeholders that high interest rate spreads are caused by the internal characteristics of the banks themselves, such as their tendency to maximize profits in an oligopolistic market, regulatory and institutional environment in which banks operate. These debates can only be resolved through objective, quantitative analysis of the determinants of banking sector interest rate spreads in developing countries.

Demigurc-Kunt and Huizinga (1998) concur by noting that 'while net interest margin can be interpreted as a rough index of bank (in) efficiency, this does not mean that a reduction in net margins always signals improved bank efficiency. In addition to the traditional macroeconomic indicators highlighted by Demigurc-Kunt and Huizinga (1998), this paper investigates the effect the effect of government policy measures, such as changes in the Treasury bill and discount rates, public-sector crowding out, government deficit financing, and money supply activities. This is an important addition to the literature, as it highlights the policy changes which will have the greatest and most direct impact in reducing spreads and increasing the efficiency of the banking sector.

2.3 Interest Rate Spreads in Developing Nations

An argument made to explain the failure of spreads in developing countries to converge to international levels even after financial liberalization, suggests that high rate spreads in developing countries will persist if financial sector reforms 'do not significantly alter the structure within which banks operate' (Chirwa and Mlachila, 2004). This structure refers to the market/industry and macroeconomic environment in developing countries. The market-specific determinants of commercial bank

interest rate spreads highlighted in the literature typically include lack of adequate competition in the banking sector and consequent market power of commercial banks, the degree of development of the banking sector, and explicit and implicit taxation-such as profit taxes and reserve requirements. Evidence has been found that interest rate spreads (as provided by NIMS) are increased by: Greater market power of commercial banks; Poorly-developed banking sectors; High reserve requirements; and Inefficiency of the legal system and high corruption.

Chirwa and Mlachila (2004) concur and assert that macroeconomic instability and the policy environment have important impacts on the pricing behavior of commercial banks. They note that the macroeconomic variables typically thought to be determinants of interest rate spreads include inflation, growth of output, and money market real interest rates. Brock and Franken (1998) also includes the share of commercial bank public sector loans, in her list of determinants of spreads in the Caribbean.

The macroeconomic variables which have been empirically shown to increase interest rate spreads include: High and variable inflation and real interest rates; Interest rate uncertainty – proxied by inter-bank interest rate volatility; Broad money growth; Increased fiscal deficits; A high share of commercial bank public sector loans.

Maudos and Fernandez de Guevara (2004) argue that the intermediation role of banks is furthermore reflected in their operating costs since even in the absence of market power and of any kind of risk; banks will have to cover their operating costs, which are a function of deposits taken and loans granted. Thus banks operating at higher cost levels will need to charge higher margins. As in a perfectly competitive environment

the prices are set by market-a process which simply results in the market exit of banks with high expenses, some doubts about this line of argumentation are justified.

The model further predicts the IRM to be an increasing function of the average size of a bank's operations because in this case more risk is concentrated in a single customer. To sum up the theoretical model of Maudos and Fernandez de Guevara (2004) lists the following determinants of a bank's IRM and their predicted directions of influence: A bank's degree of *risk aversion*: The higher the risk aversion, the higher the IRM; The *competitive structure* of the banking market: The lower the competition, the higher the IRM; *Interest rate risks*: The more volatile the money market rates, the higher reinvestment and refinancing risks, whish in turn results in higher IRM for risk-averse agents; *Credit risks*: The higher the credit risks, the higher the IRM; The *interaction* credit and internet rate risks: Higher interest rate risks will ceteris paribus increase the default probability of loans; Bank's *operating costs*: The higher the operating costs the higher the IRM a bank may charge; The *average size* of bank operations: The higher the average size of operations, the higher the risk concentrated in single customers and the IRM a risk averse agent demands; *Credit risks* are captured by the ratio of loan loss provisions to customer loans or (again as robustness exercise) by the ratio of risk-weighted assets to total assets. The *operating costs* are simply operating expenses in relation to total assets.

2.4 Theoretical Literature

2.4.1 Fisher Effect

Madura (2003) notes that more than 50 years ago, Irving Fisher proposed a theory of interest rate determination that is still widely used today. It does not contradict the loanable funds theory but simply offers an additional explanation for interest rate movements. Fisher proposed that nominal interest payments compensate savers in two

ways. First, they compensate for a saver's reduced purchasing power. Second, they provide an additional premium to savers for foregoing present consumption. Savers are willing to forgo consumption only if they receive a premium on their savings above the anticipated rate of inflation as shown in the following equation:

$I=ECINF + i_R$

Where i=nominal or quoted rate of interest

ECINF=expected inflation rate

I_R=real interest rate.

This relationship between interest rates and expected inflation is often referred to as the Fisher effect. The difference between the nominal interest rate and the expected inflation rate is the real return to a saver after adjusting for the reduced purchasing power over the time period of concern. It is referred to as the real interest rate because, unlike the nominal rate of interest, it adjusts for the expected rate of inflation.

2.4.2 The Classical Theory of Interest Rates

One of the oldest theories concerning the determinants of the pure or risk-free rate is the classical theory of interest rates, developed during the nineteenth and early twentieth centuries by a number of British economists and elaborated on by Irving Fisher (1930) and others more recently. The classical theory argues that the rate of interest is determined by two forces: the supply of savings, derived mainly from households; the demand for investment capital, coming mainly from the business sector.

The classical theory considers the payment of interest a reward for waiting-the postponement of current consumption in favor of greater future consumption. Higher interest rates increase the attractiveness of savings relative to consumption, spending, encouraging more individuals to substitute current saving for some quantity of current consumption. This so called substitution effect calls for a positive relationship between interest rates and the volumes of savings. Higher interest rates bring forth a greater volume of current savings.

Financial reform emphasizes the abolition of interest rate and credit ceilings and the promotion of a competitive environment with reduced government control and ownership. Although achieving competitiveness does not imply nonexistence of an interest rate spread. It has been noted that the size of the spread is much higher in a non-competitive market, which also calls for strengthening the regulatory and legal framework to enhance the stability of the market. Caprio (1996) notes that a weak legal system, where the courts are not oriented toward prompt enforcement of contracts and property rights are ill defined, increases credit riskiness and banks have no incentive to charge lower rates. In addition, the liberalization theory overlooks endogenous constraints to efficient allocation of resources by the banking sector, where, in the absence of a well functioning equities market, efficient allocation of capital is not realized even with financial liberalization. In the absence of direct financial markets and an equity bonds market, financial institutions absorb too much risk, as business enterprises rely excessively on debt finance. Thus, conclude Demirguc-Kunt and Huizinga (1997), the interest spread fluctuates, reflecting the substitution between debt and equity financing. As the equity market expands, offering competitive returns, banks increase their deposit rates to compete for funds from the public. The expanded market also reduces the risk absorbed by the banking

sector and banks charge competitive lower lending rates, reducing the interest rate margin. Thus, even in an oligopolistic banking system, there is need for competition from the direct financial market.

Empirical results show that market imperfections widen the interest rate spread. Ho and Saunders (1981), approximating market power with bank size, found a significant difference in spread in that small banks had higher spreads than the large banks. Barajas et al. (1996) also show a significant influence of loan market power on the interest spread. Elkayam (1996) observes that in a competitive banking system, the interest rate spread derives solely from central bank variables (including the discount window loans, reserve requirement and interest on liquid assets on deposit with the central bank), while under a monopolistic (or oligopolistic) structure the interest rate spread is in addition affected by elasticity of demand for credit and deposits. He also found that there was more market power in the credit market than the deposit market. In addition, considering monetary policy, Elkayam (1996) found that an increase in money supply under elastic demand reduces the spread more in a monopolistic than on a competitive market. With adequate supervision an increase in interest rates results in banks' rationing credit instead of taking new borrowers. However, regulatory differences across financial institutions destabilize the financial sector by diverting intermediation into the informal, less regulated and less taxed part of the sector.

The legal framework incorporates the adequacy of commercial law and the efficiency with which the judicial system makes and enforces legal decisions. Weakness in enforcement of financial contracts creates credit management problems and the premium charged on credit increases. This is because banks are unable to make agreements that limit the liability of borrowers to divert funds from the intended

purpose, to disclose accurate information on borrowers, and to write easily enforceable legal contracts. On the other hand, a weak legal system without clearly spelled out property rights denies the diversity of institutions a chance to diversify risk. Banks have no incentive to invest in information and human capital, which propels the information asymmetry problem. In their study, Demigurc-Kunt and Huizinga (1997) found that better contract enforcement, efficiency of the legal system and lack of corruption are associated with lower realized interest margins. This is because of the reduced risk premium attached to the bank lending rate. As Fry (1995) explains, liberalization in the presence of inadequate prudential supervision and regulation magnifies the impact of exogenous shocks by accommodating distress borrowing. Notable is that in developing countries, regulations exist on paper but in practice they are not enforced consistently and effectively.

In Kenya interest rates were liberalized in July 1991. Financial repression theory predicts that after liberalization positive real interest rates should be realized as nominal interest rates increase from the government set low levels when price stability is achieved. The financial system also gains efficiency in the intermediation process such that the interest spread between the lending and deposit rate narrows. In Kenya, however, nominal interest rates increased minimally immediately after liberalization, and as inflation accelerated very high negative real rates were recorded. Interest rate widened, indicating either inefficiency in the intermediation process with weak institutional infrastructure, and/or macroeconomic instability, and/or a non-competitive structure in the banking sector. Deposit rates remained at low and almost constant levels, while lending rates began moving upwards. This may be explained by several factors: Lack of diversity in financial institutions and assets creating an uncompetitive financial market; Inflationary pressure because of the lack of an

appropriate mechanism to hedge against future inflation; Uncertainty on bank income earnings with macro and financial instability, and accumulated high liquidity coupled with lower credit demand. This reduced banks' commitment to payment of costs for deposits; A Treasury bill rate maintained at persistently high levels encourages banks to hold Treasury bills and thus relegate to the background their screening and monitoring roles in the financial intermediation process.

Lending rates increased gradually after liberalization and were accelerating as the sector faced a more risky environment. In addition, Treasury bill rates were kept high so that the lending rates tended to follow the Treasury bill rate over time. Even with a favorable environment for flexible interest rates, the lending rates were sticky downwards, and even when they did decline they settled at relatively high levels. The persistently high lending rates were attributed to inflationary expectations, expectations regarding exchange rate depreciation, high implicit taxes, poor loans portfolios, a non-competitive financial system, and an inefficient intermediation process.

There are many aspects of the performance of commercial bank that can be analyzed. This study focuses on the profitability performance of commercial banks in Kenya. Aburine (2009) observed that the importance of bank profitability can be appraised at the micro and macro levels of the economy. At the micro level, profit is the essential prerequisite of a competitive banking institution and the cheapest source of funds. It is not merely a result, but also a necessity for successful banking in a period of growing competition on financial markets. Hence the basic aim of every bank management is to maximize profit, as an essential requirement for conducting business.

The banking environment in Kenya has, for the past decade, undergone many regulatory and financial reforms. These reforms have brought about many structural changes in the sector and have also encouraged foreign banks to enter and expand their operations in the country. Kenya's financial sector is largely bank-based as the capital market is still considered narrow and shallow. Banks dominate the financial sector in Kenya and as such the process of financial intermediation in the country depends heavily on commercial banks (Kamau, 2009). The banking sector in Kenya has been described as the bond that holds the country's economy together. Sectors such as the agricultural and manufacturing virtually depend on the banking sector for their survival and growth. The performance of the banking industry in Kenya has improved tremendously over the last ten years, as only two banks have been put under CBK statutory management during this period compared to 37 bank-failures between 1986 and 1998 (Mwega, 2009).

Since liberation IRS has remained high in Kenya relative to both world and regional standards. The policy makers and private businesses in particular have repeatedly expressed their concern over the persistence of high IRS in the banking sector. The concern emerges from the apprehension that high IRS acts against stimulating private investment and hence economic growth in the country and is a reflection of inefficiencies in the banking system. It has been argued that high cost of borrowed fund has been filtering out economically viable projects and reducing their expected returns with consequent adverse impact on private investment. On the other hand, low deposit rates are discouraging savings mobilization.

2.5 Impact of the Money Supply on Interest Rates

The Central Bank can affect the supply of loanable funds by increasing or reducing the total amount of deposits held at commercial banks or other depository institutions.

When the Central Bank increases the supply of loanable funds which places downward pressure on interest rates. On the other hand, if the Central Banks' affect inflammatory expectations, there would be an increase in the demand for loanable funds and this would affect the effect of the increase in supply of funds.

If the Central Bank reduces the money supply, it reduces the supply of loanable funds. Assuming no change in demand, this action places upward pressure on interest rates.

2.5.1 Impact of Budget Deficit on Interest Rates

When the government enacts fiscal policies that result in more expenditures than tax revenue, the budget is increased. A higher government deficit increases the quantity of loanable funds demandable at any prevailing interest rate causing an outward shift in the demand schedule. Assuming no offsetting increase in the supply schedule, interest rates will rise. Given a certain amount of loanable funds supplied to the market excessive government demand for these funds tends to crowd out the private demand (by consumers and corporations) for funds (Madura, 2003). The government may be willing to pay whatever is necessary to borrow these funds, but the private sector may not. This impact is known as the "crowding-out effect".

2.5.2 Fundamental Determinants of Interest Rates

A multitude of factors initiate shifts in the supply or demand for funds producing change in interest rates. Four particularly important forces affecting interest rates are inflation expectations, Federal Reserve (government) policy, the business cycle, and the state of the federal budget, that is, the magnitude of budget government surplus or deficit.

2.5.3 Inflation Expectations

Interest rates rise when expected inflation increases. Interest rates fall when expected inflation declines. The loanable funds framework easily explains the prosperity for interest rates to vary directly with the magnitude of inflation expectations.

The rate of interest performs several important functions in the economy: It helps guarantee that current savings will flow into investment to promote economic growth; It allocates the available supply of credit generally providing loanable funds to those investment projects with the highest expected returns; It brings the supply of money into balance with the public's demand for money; It is an important tool of government policy through its influence on the volume of savings and investments. If the economy is growing too slowly and unemployment is rising, the government can use its policy tools to lower interest rates in order to stimulate borrowing and investment. On the other hand, an economy experiencing rapid inflation has traditionally called for a government policy of higher interest rates to slow borrowing and spending and encourage more spending.

2.6 Factors Influencing Bank Profitability

In accordance with the above theories and models, many studies have introduced some useful variables in the profit function of commercial banks to shed light on key factors that make a difference in bank profits. Such studies are not without ambiguity especially with regard to the measurement of the variables and the results reported thereafter. However there is general agreement that bank profitability is a function of internal and external factors.

2.6.1 Capital Adequacy and its effect on Profitability

Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience. The capital structure of banks is highly regulated. This is because capital plays a crucial role in reducing the number of bank failures and losses to depositors when a bank fails as highly leveraged firms are likely to take excessive risk in order to maximize shareholder value at the expense of finance providers (Kamau, 2009).

Although there is general agreement that statutory capital requirements are necessary to reduce moral hazard, the debate is on how much capital is enough. Regulators would like to have higher minimum requirements to reduce cases of bank failures, whilst bankers in contrast argue that it is expensive and difficult to obtain additional equity and higher requirements restrict their competitiveness.

However Gavila *et al* (2009) argues that, although capital is expensive in terms of expected return, highly capitalized banks face lower cost of bankruptcy, lower need for external funding especially in emerging economies where external borrowing is difficult. Thus well capitalized banks should be profitable than lowly capitalized banks.

The banking sector in Kenya provides an interesting case to examine the impact of capital because the minimum statutory requirement has been upgraded to Kshs 1 billion in 2012.

2.6.2 Assets Quality and its effect on Profitability

Credit risk is one of the factors that affect the health of an individual bank. The extent of the credit risk depends on the quality of assets held by an individual bank. The quality of assets held by a bank depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrowers asserts that the

profitability of a bank depends on its ability to foresee, avoid and monitor risks, possibly to cover losses brought about by risks arisen. Hence, in making decisions on the allocation of resources to asset deals, a bank must take into account the level of risk to the assets.

Poor asset quality and low levels of liquidity are the two major causes of bank failures. Poor asset quality led to many bank failures in Kenya in the early 1980s. During that period 37 banks collapsed following the banking crises of 1986-1989, 1993-1994 and 1998 (Mwega, 2009). Many of the financial institutions that collapsed in 1986 failed due to non-performing loans (NPLs) and that most of the larger bank-failures involved extensive insider lending, often to politicians. The CBK measures asset quality by the ratio of net non-performing loans to gross loans.

2.6.3 Liquidity Management and its effect on Profitability

The importance of liquidity goes beyond the individual bank as a liquidity shortfall at an individual bank can have systemic repercussions (CBK, 2009). It is argued that when banks hold high liquidity, they do so at the opportunity cost of some investment, which could generate high returns (Kamau, 2009). The trade-offs that generally exist between return and liquidity risks are demonstrated by observing that a shift from short term securities to long term securities or loans raises a bank's return but also increases its liquidity risks and the inverse is true. Thus a high liquidity ratio indicates a less risky and less profitable bank. Thus management is faced with the dilemma of liquidity and profitability. Myers and Rajan (1998) emphasized the adverse effect of increased liquidity for financial institutions stating that, "although more liquid assets increase the ability to raise cash on short-notice, they also reduce management's ability to commit credibly to an investment strategy that protects investors" which

finally, can result in reduction of the "firm's capacity to raise external finance" in some cases.

In Kenya the statutory minimum liquidity requirement is 20%. However, according to CBK Bank Supervision Annual Report (2009), the average liquidity ratio for the sector was 39% in 2009, 37.0% in 2008 and way above the minimum requirements. The CBK attributes this to the banking industry's preference to invest in less risky government securities while Ndung'u and Ngugi (2000) attributes this liquidity problem to the restrictions placed on commercial banks at the discount window, coupled with thin interbank market, a high reserve requirement and preference of government securities.

2.6.4 Operational Costs Efficiency and its effect on Profitability

In the literature on bank performance, operational expense is usually used to assess managerial efficiency in banks. Mathuva (2009) observed that the CIR of local banks is high when compared to other countries and thus there is need for local banks to reduce their operational costs to be competitive globally. Beck and Fuchs (2004) examined the various factors that contribute to high interests spread in Kenyan banks. Overheads were found to be one of the most important components of the high interest rate spreads. An analysis of the overheads showed that they were driven by staff wages costs which were comparatively higher than other banks in the SSA countries.

Although the relationship between expenditure and profits appears straightforward implying that higher expenses mean lower profits and the opposite, this may not always be the case. The reason is that higher amounts of expenses may be associated with higher volume of banking activities and therefore higher revenues. In relatively

uncompetitive markets where banks enjoy market power, costs are passed on to customers; hence there would be a positive correlation between overheads costs and profitability.

2.6.5 The Effects of Market Structural Factors on bank Profitability

2.6.5.1 Ownership and its Effects on Profitability

Kamau (2009) argued that foreign banks usually bring with them better know-how and technical capacity, which then spills over to the rest of the banking system. They impose competitive pressure on domestic banks, thus increasing efficiency of financial intermediation and they provide more stability to the financial system because they are able to draw on liquidity resources from their parents banks and provide access to international markets. Beck and Fuchs (2004) argued that foreign-owned banks are more profitable than their domestic counterparts in developing countries and less profitable that domestic banks in industrial countries, perhaps due to benefits derived from tax breaks, technological efficiencies and other preferential treatments. However domestic banks are likely to gain from information advantage they have about the local market compared to foreign banks.

2.6.5.2 Market Concentration and its Effect on Profitability

The market power theory posits that the more concentrated the market, the less the degree of competition. High degrees of market share concentration are inextricably associated with high levels of profits at the detriment of efficiency and effectiveness of the financial system due to increased competition. Secondly, since commercial banks are the primary suppliers of funds to the business firm, the availability of bank credit at affordable rates is crucial importance for the level of investments of the firms, and consequently, for the health of the economy. In situation of increased

concentration, the possibility of rising costs of credits is reflected by a reduction of the demand for bank loans and the level of business investments. The effect multiplies many folds in as much as bank management capitalizes on the market share concentration factor

2.6.6 Some Factors Affecting Interest Rate Spread in Kenya

Conceptually, the IRS reflects the cost of intermediation activities including operating costs and liquidity risks that the banks bear in linking the savers and investors. In addition, banks in Kenya incur several other costs which are relatively high, such as cost of non-performing loans (NPLs), administrative and incidental costs including expenses that the banks incur in setting up new branches and attracting and retaining skilled personnel, advertising, and other expenditures that the banks undertake to increase market share and business. Such conditions are not uncommon in low income countries which underdeveloped financial markets where IRS remains high due to many factors, including high operating costs of banks, absence of competition in the banking system, high inflation and corporate tax rates, and other characteristics of the financial system.

For identifying the factors that contribute to the persistence of high IRS, it is important to focus on variables which influence the decisions of the banks regarding the levels at which the deposit and lending rates would be set. In practice, such factors could cover elements which are both internal and external to the banking sector. It is likely that the IRS in Kenya is indicative of interactions of three sets of factors: high costs of intermediation as a consequence of large non performing loan (NPL); practice of setting higher than competitive deposit interest rates, resulting in high lending rates and hence IRS; and existence of forces favoring high IRS in a segmented and non-competitive banking sector.

2.6.6.1 Costs of Liquidity

High IRS in Kenya has a long history that dates back to the initial years after independence. Traditionally, the financial policies including monetary policy have been influenced significantly by fiscal activism in Kenya.

The banking system accumulated a huge amount of classified loans due to unviable projects and build up of bad loans due to corruption, low technical skills especially in risk management and inefficient portfolio management. This led to high ratios of NPLs and with limited supply of funds, higher cost of capital to prospective borrowers.

Besides, the deposit rates in the banking sector remain highly insensitive to the market due to significant public sector borrowing.

As for the banks, high IRS is seen as a premium for bearing credit in the country's banking system. Obviously, the single most important source of the risk is the possibility of loan default. In addition, there exist several other sources of perceived risk, such as funding longer term credit with short term deposits by the banks in the absence of a well-functioning and vibrant capital market that precludes better risk sharing, and potentially higher future interest rates with rising rate of inflation.

Moreover, the perceived risk of an individual bank depends on many other factors, such as its risk aversion behavior, its share of transaction in the credit market, and the degree of volatility of interest rates in the financial market. Necessarily, IRS would be higher in a market where interest rate volatility is high and mechanisms to hedge interest rate uncertainty are absent. Under the circumstances, setting a high IRS is considered as a convenient mechanism for the banks to screen out borrowers who are

considered high-risk although the mechanism has not worked out well as revealed by the high rate of loan defaults in the banking sector.

2.6.6.2 Interest and Non-interest Income and Expenditure

The actual IRS consists of the impact of different components that the banks consider in setting the margin, such as reserve costs, loss provision. And the target level of profitability. In addition, the banks are likely to consider operating costs (non-interest costs) as well as non-interest income flows (e.g. commission and fee income) in setting the IRS. Obviously, low operating and reserve costs could induce the banks to reduce the spread. On the other hand, inefficiencies in bank operations and adverse economic and market conditions are likely to contribute to high overhead costs. This shows that differences in IRS across banks may be the reflection of conscious choice regarding whether to bear high overhead cost and set high IRS on the other hand or ensure efficiency and better performance and operate under low IRS on the other. Moreover, variations in IRS over different banks reflect relative costs of portfolio choices and credit allocations of the banks.

The balance sheets and income statements of the banks can provide important clues relating to areas where actions could be targeted to yield positive results in reducing the IRS. In general, the banks could be induced to lower IRS if non-interest income increases. Similarly, the banks are likely to keep IRS high if they suffer or foresee credit losses, increasing operating expenses, and are obliged to maintain high return on capital. High interest rates or inflation expectations are also likely to lead to high IRS. Moreover, the ability to deploy short term surplus funds and/or raise funds in the event of liquidity crisis can have important implications on the level of IRS set by the banks.

For increasing non-interest income, it is important for the banks to target on providing value added services. For example, the traditional fee and commission based income streams can be broad based to cover both modern and expanding consumer, corporate and investment banking services. In addition, many areas in retail banking may be tapped covering advisory and asset management services including sale of insurance and mutual fund products, payment products, electronic bill payments, credit and smart cards and other prospective areas. In the corporate sector, fee based revenue arising out of traditional trade finances can be significantly enhanced through capital raising and similar other activities, such as syndicated loan, primary capital market offering, securitization, and debt and equity placements. As the capital market develops, secondary market broking, international fund raising and corporate trust services can also emerge as useful sources of raising non-interest income.

2.6.6.3 Access to Information and Distribution of Market Power

Within the structure and the level of efficiency at which the banks operate at present, imperfect access to information has significant influence on IRS especially through its effect on the cost of credit. Thus, ensuring greater access to credible information could play an important role in reducing uncertainty in the credit environment and thereby reduce the IRS. Obviously, interest rate volatility and broader socioeconomic uncertainty contribute to widening of IRS. This indicates that reducing such uncertainties and removing the asymmetric access to information constitute important elements of an effective IRS management policy.

Similarly, operating costs including non-interest expenditure which contribute to high IRS are linked, among others, to market power and the market share of individual bank/bank group that affect its cost of doing business. For efficiently managing

operating costs, it is important for the banks to bring greater efficiency in bank operation, especially relating to management of personnel, processes and technology. By making judicious choices with respect to these elements, the banks can significantly improve productivity in different operations and achieve substantial reduction in operating costs.

It would also be important for the banks to manage interest rate volatility through adopting best practices in fund management. Regular monitoring of risk elements and asset-liability gaps for example, enables the banks to better manage liquidity risks that can contribute to lowering the IRS. Similarly, introduction to hedging mechanisms can play useful role that may start with short-term derivatives such as forward rate agreements and interest rate swaps before moving to sophisticated options and longer dated transactions.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methodology. The research design that was used by the researcher is first described, followed by the target population, sample size and characteristics of the population to be studied. This chapter also gives the data collection method that was used in conducting the study and how the data was analyzed.

3.2 Research Design

This study adopted an explanatory approach by using panel research design to fulfill the research objective. The advantage of using panel data is that it controls for individual heterogeneity, less collinearity variables and tracks trends in the data something which simple time-series and cross-sectional data cannot provide

3.3 Population and Sampling

The population of this study comprised of all licensed commercial banks in Kenya between the period of 2006 and 2010. As at 31 December 2010, there were 43 registered commercial banks comprising of 14 large banks, 17 medium banks and, 12 small banks Only 35 banks were considered for this study. The study did not consider banks that started operations or those that merged during the period of the study.

3.4 Data Collection

The study employed secondary data. The data was collected from the Central Bank of Kenya and Banking survey 2010. The banking survey is an annual publication that publishes annual financial statement of all banks covering a period of ten years, while the Central Bank of Kenya publishes annually, major financial indicators of the

sector. Data was also collected from journals and reports of commercial banks for the years 2006 to 2010.

3.5 Data Analysis

The collected data was analyzed using descriptive statistics, graphs, multiple linear regression analysis and inferential statistics. The collected data was thoroughly examined and checked for completeness and comprehensibility. The data was then summarized, coded and tabulated. Descriptive statistics such as means, standard deviation and frequency distribution were used to analyze the data. Data was coded and entered into the Statistical Package for Social Sciences (SPSS 17) for analysis. SPSS was used to perform the analysis as it aids in organizing and summarizing the data by the use of descriptive statistics such as tables. Data presentation was done by the use of graphs, percentages and frequency tables. The inferential statistic regression and correlation was done to establish the extent to which interest rates margins determine profitability of commercial banks.

A linear regression model of factors influencing interest rate margins and profitability of the commercial banks was applied to examine the relationship between the variables. The model treats profitability of the commercial bank as the dependent variable while the independent variable was the net interest margin. The model below was therefore employed:

$$ROA = \alpha + \beta_1 NIM + \pi$$

Where

ROA	is the profitability measured as net profit/average assets
NIM	is the net interest margin calculated as a percentage of interest bearing assets

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

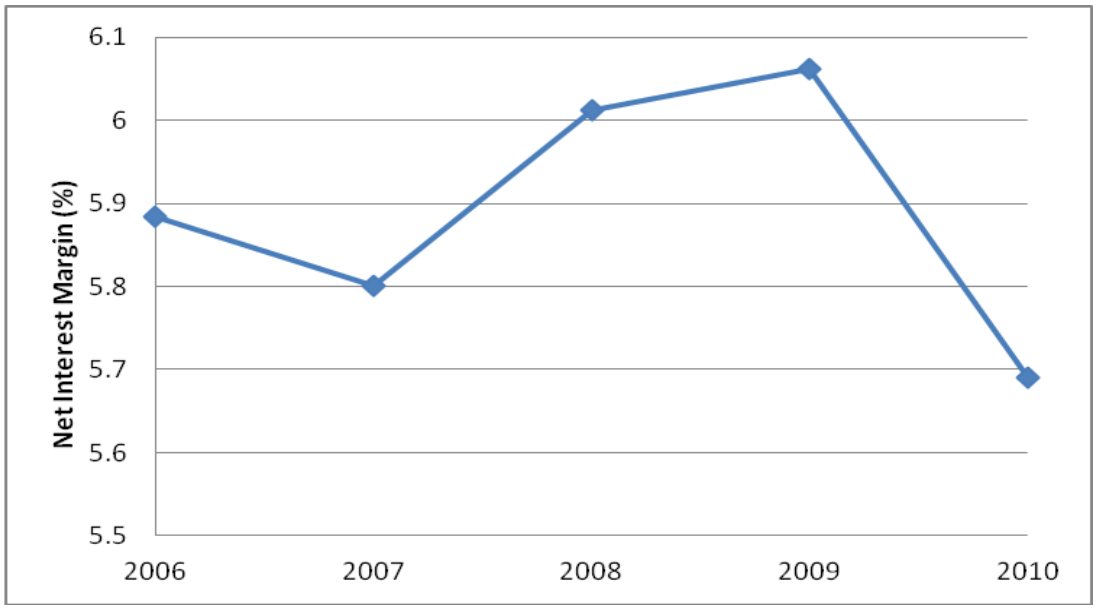
4.1 Introduction

This chapter presents the results of data analysis performed on 35 commercial banks in Kenya between 2006 and 2010 inclusive of both years. The descriptive results are first presented where graphical presentation of the trends in both net interest margin and profitability is shown.

4.2 Descriptive Statistics

Figure 4.1 presents the results of the trend of net interest margin of commercial banks in Kenya from 2006 to 2010.

Figure 4.1: Trend of Net Interest Margin for Banks in Kenya (2006 – 2010)

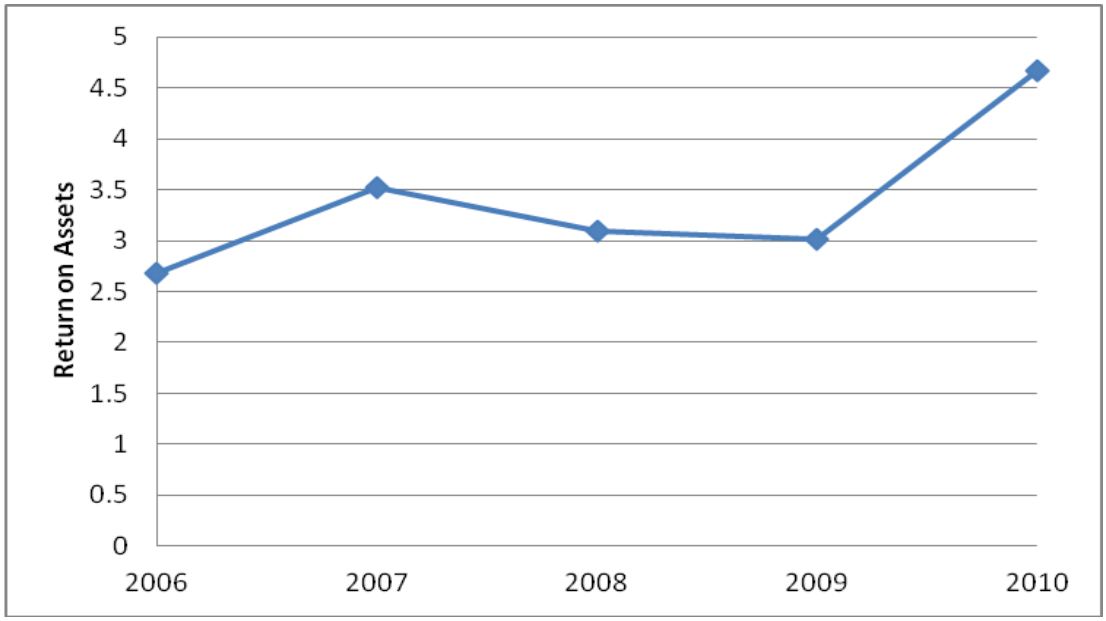


Source: Author (2012)

The results in Figure 4.1 show that there was a general fall in net interest margin for commercial banks in Kenya over the period of study. NIM fell in 2007, rose in 2008 through to 2009 before declining sharply in 2010.

Figure 4.2 shows the results of the trend of return on assets (profitability) of commercial banks in Kenya from 2006 to 2010.

Figure 4.2: Trend of Return on Assets for Banks in Kenya (2006 – 2010)



Source: Author (2012)

The results in Figure 4.2 reveal that there was a general rise in profitability of commercial banks over the period of analysis. As shown, ROA rose in 2007 before marginally declining in 2008 through to 2009 and then sharply rose in 2010.

Table 4.1 shows the summary results of the descriptive analysis especially the minimum, maximum, mean, and standard deviation for the five year panel data.

Table 4.1: Summary of Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Net Interest Margin (%)	5	5.69	6.06	5.8898	.15202
Return on Assets	5	2.69	4.66	3.3985	.76872

Source: Author (2012)

The results in Table 4.1 reveal that net interest margin ranged from a low of 5.69% to a high of 6.06%. The mean NIM was 5.88% with a standard deviation of 0.15%.

These results mean that over the period study, banks were able to make optimal investment decisions that earned an average of 5.88%.

The results in Table 4.1 also show that return on assets ranged from a minimum of 2.69 to a maximum of 4.66 with a mean of 3.39 and a standard deviation of 0.76. The results mean that the banks were profitable over the period of analysis making an average of 3 times returns on their average assets.

4.2 Impact of Interest Margins on Bank Profitability

The regression results of a balanced panel data are presented in this section. Table 4.2 shows the model summary results where r, r-square, adjusted r-square, and standard error of estimate results are given.

Table 4.2: Model Summary Results

R	R Square	Adjusted R Square	Std. Error of the Estimate
.776	.603	.470	.55952

Source: Author (2012)

The results in Table 4.2 show that net interest margin had a large effect on profitability (r = 0.776). The r-square value of 0.603 suggests that 60.3% of the variance in profitability of banks.

Table 4.3 shows the ANOVA results which was done to test the model fit. The F statistic and its significance (p-value) are presented and interpreted.

Table 4.3: ANOVA Results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.425	1	1.425	4.550	.123[b]
Residual	.939	3	.313		
Total	2.364	4			

Source: Author (2012)

The results in Table 4.3 show that the F statistic was 4.550 and was not significant at 5% level of confidence (p = 0.123). This means that the model was not fit to explain the relationship between net interest margin and bank profitability.

Table 4.4 shows the coefficients of the model which indicate the direction of relationship and significance of the impact of net interest margin on bank profitability. The t-test value and the p values are shown.

Table 4.4: Impact of Interest Margin on Bank Profitability

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	26.519	10.842		2.446	.092
Net Interest Margin	-3.926	1.840	-.776	-2.133	.123

Source: Author (2012)

As shown in Table 4.4, the study found that net interest margin had a negative impact on return on assets (-3.926). The t-value of -2.133 and the p-value of 0.123 show that the impact of net interest margin on return on assets was not significant. This therefore suggests that interest margin did not affect the profitability of bank performance in Kenya.

4.4 Summary and Interpretation of Findings

The study sought to determine the impact of interest margin on bank profitability in Kenya. A balanced panel data was used to perform the analysis for a five year period from 2006 – 2010. The trend analysis has shown that there was a mixed pattern in net interest margin for commercial banks in Kenya over the period of study, with a fall in NIM in 2007, a rise in 2008 through to 2009 and then declined sharply in 2010.

The results further reveal that there was a general rise in profitability of commercial banks over the period of analysis. As shown, ROA rose in 2007 before marginally declining in 2008 through to 2009 and then sharply rose in 2010. This implies that more profits were being generated per asset with the same investment thus pointing to increased efficiency in operations of the studied commercial banks in Kenya. This suggests that the banks were making better investment decisions as well as being profitable over the period of study.

With regard to interest margins, the results reveal that the net interest margin ranged from a low of 5.69% to a high of 6.06%, with a mean NIM of 5.88% and a standard deviation of 0.15%. This means that over the period of study, banks were able to make optimal investment decisions that earned an average NIM of 5.88%.

The results further show that return on assets ranged from a minimum of 2.69 to a maximum of 4.66 with a mean of 3.39 and a standard deviation of 0.76. This means that the banks were profitable over the period of analysis making an average of 3 times returns on their average assets.

In addition, the results show that net interest margin had a large effect on profitability (r = 0.776). The r-square value of 0.603 suggests that 60.3% of the variance in profitability of banks.

The ANOVA results done to test the model fit showed that the F statistic was 4.550 and was not significant at 5% level of confidence (p = 0.123). This means that the model was not fit to explain the relationship between net interest margin and bank profitability.

Analysis of impact of interest margins on Bank profitability showed that the net interest margin had a negative impact on return on assets (-3.926). This means that bank profitability declined when interest margins rose. This may be because when interest rates rise they lock out a number of borrowers as they would imply that a business should be able to make a return greater than the cost of funds which may be unrealistic hence most of them desist from borrowing or their applications are declined by the commercial banks.

However, the t-value and p-value of -2.133 and 0.123 respectively at 5% level implies that profitability of banks was not influenced by net interest margins or the impact of net interest margin on return on assets was not significant. This therefore suggests that interest margin did not significantly affect the profitability of bank performance in Kenya. However, the general trend of the results is consistent with general expectation that in an efficient self regulated economy, an increase in net interest margins has a negative effect on profitability or return on assets.

The study found that both net interest margin and return on assets rose over the period under analysis. Thus the banks were making better investment decisions (mean of NIM = 5.88) over the period of study as well as being profitable (mean of ROA = 3.39) over the period. This is an interesting finding as the expectation is that ideally the profitability should also have decreased. This compares well with the observation by Demigurc-Kunt and Huizinga (1998) that 'while net interest margin can be interpreted as a rough index of bank (in) efficiency, it does not mean that a reduction in net margins always signals improved bank efficiency.

The study also found that net interest margin had a negative effect on return on assets (-3.926). This means that bank profitability declined when interest margins rose. However, the impact was not significant at 5% level (p = 0.123). Although the impact was not significant, the findings are in the direction of the existing literature which links the efficiency of a financial sector with a country economic growth, and consistent with assertions by Demigurc-Kunt and Huizinga that bank interest spreads could be interpreted as an indicator of the efficiency of the financial system (Demigurc-Kunt and Huizinga 1999). This implies that high spreads can hinder the growth of savings and investments and imply that the cost of using the financial system may become prohibitive for certain borrowers.

.

The study also compares favorably with the results of Kibe (2003) in which he found that the performance of commercial banks is linked to a comprehensive set of bank characteristics.. This implies that we cannot correctly determine the impact interest rates have directly on the profitability of banks without taking into consideration these other factors.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Study Findings

This chapter presents the summary of the study in section 5.1, conclusion in 5.2, recommendations in 5.3, limitations of the study in 5.4, and suggestions for further research in 5.5.

The purpose of this study was to examine and understand the impact of interest margins on the profitability of commercial banks in Kenya. The study used the return on assets as the dependent variable while the net interest margin was the independent variable. To this end, the research showed that the interest margin and return on assets were negatively related as when the interest margins rose, the return on assets declined and vice versa.

The study found that both net interest margin and return on assets rose over the period under analysis. Thus the banks were making better investment decisions (mean of NIM = 5.88) over the period of study as well as being profitable (mean of ROA = 3.39) over the period. This is an interesting finding as the expectation is that ideally the profitability should also have decreased. This compares well with the observation by Demigurc-Kunt and Huizinga (1998) that ‘while net interest margin can be interpreted as a rough index of bank (in) efficiency, it does not mean that a reduction in net margins always signals improved bank efficiency.

The study further found that the profitability model used in this study was not significant in explaining the relationships given the non-significance of the F-statistic (F=4.550, p=0.123). Hence, the model used in this study was not fit to explain the variance in bank profitability in Kenya.

The study also found that net interest margin had a negative effect on return on assets (-3.926). This means that bank profitability declined when interest margins rose. However, the impact was not significant at 5% level (p = 0.123). Athough the impact was not significant, the findings are in the direction of the existing literature which links the efficiency of a financial sector with a country economic growth, and consistent with assertions by Demigurc-Kunt and Huizinga that bank interest spreads could be interpreted as an indicator of the efficiency of the financial system (Demigurc-Kunt and Huizinga 1999). This implies that high spreads can hinder the growth of savings and investments and imply that the cost of using the financial system may become prohibitive for certain borrowers.

5.2 Conclusion

The study concludes that commercial banks in Kenya were making better investment decisions over the period of study as the net interest margins were positive and rose over the period covered in the study.

The study further concludes that commercial banks in Kenya were profitable over the period covered in the study. This is shown by the positive ROA as well as the rising ROA over the period of analysis.

Additionally, the study concludes that the model used in this study was not fit to explain the variance in bank profitability in Kenya. This is because, though the model explained most of the variance, the F statistic was insignificant.

Lastly, the study concludes that net interest margin does not have a significant impact on bank profitability. This is so because the impact failed to pass significance tests leading to the conclusion that interest margin does not affect bank profitability in Kenya.

5.3 Policy Recommendations

The levels of net interest margins among commercial banks, though positive, were mostly low. The study recommends that banks should look for better and more ways of investing their funds in order to gain larger net interest margins.

Despite the liberalization process, bank margins have remained generally high. This may be attributed either to an increase in banks risk appetite or the market power of banks. Thereby in order to foster competition it is imperative that the government together with the Central Bank of Kenya foster competition through the establishment of alternative financial institutions such as mortgage companies and credit unions. With the establishment of such institutions, borrowers will get alternative sources of credit and this may lead to the narrowing of interest margins.

The study recommends that there is need for commercial banks in Kenya to devise other ways of driving up their profitability. This is because, over the period of analysis, the overall profitability of banks was low, declining even in some years and it is therefore important that industry measures be put up to drive up profitability in the banking industry.

5.4 Limitations of the Study

The study faces a number of limitations. First, the study was specific to Kenya and therefore suffers from the limitations of country specific studies thus cannot be generalized to banks in other countries other than Kenya,

Secondly, the study was based on five-year data on performance and also on net interest margin. Thus the period covered may be recent but is not long enough to take care of the fluctuations in the variables as well as major events in the banking industry in Kenya.

Another limitation that the study faced was that there were a broad number of fiscal activities that took place during the time period examined that clearly influenced banks' profitability either positively or negatively over the short term while failing to provide any indication of its long term impact on the profitability of the banks.

Lastly, the study relied on secondary data from the Banking Survey (2011). The reliability of the results are therefore limited to the source of data as it was not possible to get specific financial reports of the banks in the sample within time.

5.5 Suggestions for Further Research

The study suggests that future studies be done on panel data for a longer period, at least a ten year period, in order to better capture the trend and well as the impacts that provide the effects of fluctuations in the variables.

The study also suggests that this study be done with all the banks using unbalanced panel data in order to be applicable to the whole industry. An unbalanced panel data

will be useful because all the banks irrespective of whether they merged or whether they were new would be used in the analysis.

Lastly, the study recommends that there is need to do another study in the banking industry that makes use of other control variables in order to show the impact of interest margins on bank performance. More importantly, it is important that a study be conducted to find out the determinants of net interest margins in commercial banks in Kenya.

REFERENCES

Allen, Linda, Rai, Anoop, 1996. 'Operational efficiency in banking: an international comparison.' Journal of Banking and Finance 20, 655-672.

Angbazo, L. (1997). Commercial bank interest margins, default risk, interest rate risk and off-balance sheet banking. Journal of Banking and Finance, 21, 55-87.

Barajas, A., R. Steiner and N. Salazar (1998). Interest spreads in banking: costs, financial taxation, market power, and loan quality in the Columbian case, 1974-96. IMF Working Paper No. 110.

Berger, Allen N., 1995. The profit-structure relationship in banking: tests of market-power and efficient-structure hypotheses. Journal of Money, Credit and Banking 27, 404-431.

Brock, P.L. and L.R. Suarez (2000). Understanding the behavior of bank spreads in Latin America." Journal of Development Economics, 63,113-134.

Central Bank of Kenya website http://www.centralbank.go.ke

Chirwa, E.W. & Mlachila, M. (2004). Financial reforms and Interest Rate Spreads in the Commercial Banking System in Malawi. *IMF Staff Papers*, 51(1), 96-122

Demigurc-Kunt, A. and H. Huizinga (1999). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence: The World Bank Economic Review, vol 13, No.2, 379-408.

Elkayama, D, (1994), The effect of monetary policy on the interest rate spread in the un-indexed local currency segment in Israel, 1986-90. Bank of Israel Research Department, Economic Review No. 68.

Hancock, D. (1985) Bank Profitability, Interest Rates, and Monetary Policy.Journal of Money, Credit, and Banking 17, no. 2.

Kibe M.M. (2003) The Relationship Between Interest Rate Spread And Profitability Of Commercial Banks In Kenya. Unpublished MBA project. University of Nairobi.

Madura, Jeff (2003). Financial Markets and Institutions 6th Ed. Thomson South Western

Maudos, Joachin and Fernandez de Guevara (2004). Factors explaining the Interest Margin in the Banking Sectors of the European Union. Journal of Banking and Finance 28, 2259-2281

McShane, R.W. and I. G. Sharpe (1985). A time series cross-section analysis of the determinants of Australian trading bank loan-deposit interest margins: 1962-1981. Journal of Banking and Finance, 9, 115-136.

Muriithi L.N. (2003) A Study On Comparison Of Interest Rates Between Short And Long Term Financial Debt Securities. Unpublished MBA project. University of Nairobi.

Mwindi G.A. (2002). The Relationship between Interest Rates Charged By Mfis and Performance of Micro and Small Enterprises in Nairobi. Unpublished MBA project. University of Nairobi.

Ngugi, Rose W, (2001), An empirical analysis of interest rate spread in Kenya. AERC Research Paper No. 106.

Ngugi.R.W & Kabubo J.W (1998), Financial Sector Reforms and Interest Rates Liberalisation: The Kenyan Experience, African Economic Research Consortium.

Njoka, C. (2003), Interest Rates under the Treasury Bill Regime. Unpublished MBA project. University of Nairobi.

Ndung'u S. Njuguna and Rose W. Ngugi (2000). Banking sector interest rate spread in Kenya. KIPPRA Discussion Paper No. 5. Nairobi: Kenya Institute for Public Policy Research and Analysis.

Pyle (1971)Measuring operational efficiency: a guide for commercial bankers, *Commercial Lending Review*, Vol. 17 No.1, pp.45-52.

Quaden, G (2004). Efficiency and Stability in an Evolving Financial System

Randall, Ruby (1998). Interest Rates Spread in the Eastern Carribean. IMF Working Paper 98/59

Saunders, A. and L. Schumacher (2000). The determination of bank interest margins: an international study. Journal of International Money and Finance, 813-832.

APPENDICES

Appendix 1: List of Commercial Banks in Kenya

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

32. Kenya Commercial Bank Ltd
33. K-REP BANK
34. Middle East Bank of Kenya
35. National Bank of Kenya Ltd
36. National Industrial Credit Bank
37. Oriental Commercial Bank
38. Paramount-Universal Bank
39. Prime Bank Limited
40. Standard Chartered Bank Ltd
41. Transnational Bank Limited
42. UBA Kenya bank Ltd
43. Victoria Commercial Bank

Appendix 2: Net Interest Margin Data

Name of bank	2010	2009	2008	2007	2006
ABC	6.71	6.31	6.74	6.68	6.53
Bank of Africa	3.33	3.21	2.89	4.37	3.85
Bank of Baroda	5.19	5.09	6.47	5.27	5.25
Bank of India	4.9	5.12	5.91	5.76	4.72
Barclays Bank	9.09	8.96	8.31	7.22	7.59
Chase Bank	5.02	5.18	5.13	5.22	5.4
Citibank	3.85	4.94	5.12	3.78	4.37
CBA	4.98	4.31	4.37	4.47	4.15
Consolidated Bank	5.92	7.46	7.91	7.75	7.57
Cooperative bank	5.95	6.12	6.79	7.04	5.75
Credit Bank	6.13	7.29	5.63	6.84	6.78
Development Bank	3.77	3.58	4.09	5.27	6.46
Diamond Trust	5.76	5.28	4.34	4.78	4.69
Dubai Bank	6.62	7.58	10.65	8.12	9.21
Equity Bank	8.19	9.1	8.39	5.2	7.53
Fidelity Bank	2.74	2.96	3.78	4.41	4.17
Fina Bank	5.5	5.28	5.98	5.42	5.38
Giro Bank	3.99	5.24	5.72	5.05	4.99
Guardian Bank	3.56	5.22	5.88	4.17	4.87
Habib AG Zurich	4.29	5.66	5.93	5.38	5.4
Habib Bank	6.11	6.41	5.3	5.62	5.31
Imperial Bank	10.67	8.74	8.44	8.03	7.54
KCB	7.82	7.42	6.16	7.01	6.82
K-Rep	11.4	13.53	9.64	10.99	10.5
Middle East	3.97	4.75	4.63	5.88	5.15
National Bank	7.27	6.48	6.94	7.05	10.94
NIC bank	5.76	5.08	4.73	5.24	5.58
Oriental	3.22	3.05	3.15	2.66	2.23
Paramount	3.45	4.83	4.87	4.18	3.65
Prime bank	3.47	3.77	4.23	4.01	3.77
SCB	5.87	6.24	6.18	6.14	6.22
Transnational bank	7.3	9.94	8.88	7.96	7.93
Victoria bank	5.96	5.9	5.23	4.47	3.88

Source: Banking Survey (2011) Booklet

Appendix 3: Profitability (ROA) Data

Name of bank	2010	2009	2008	2007	2006
ABC	4.93	3.28	3.48	3.21	2.67
Bank of Africa	2.22	1.85	0.94	2.23	1.03
Bank of Baroda	6.73	4.43	4.8	3.95	3.54
Bank of India	5.63	4.44	5.09	4.97	3.49
Barclays Bank	6.39	5.4	4.92	5.14	5.83
Chase Bank	3.07	2.73	3.08	3.63	3.3
Citibank	5.07	6.18	7.07	4.19	4.45
CBA	4.09	3.19	3.63	3.57	4.01
Consolidated Bank	2.97	2.12	1.94	0.68	0.51
Cooperative bank	4.26	3.84	4.49	3.38	2.29
Credit Bank	13.47	2.53	2.28	4.39	3.32
Development Bank	2.47	1.47	3.03	3.93	4.26
Diamond Trust	4.61	3.27	3.45	3.66	3.57
Dubai Bank	0.02	0.54	0.42	0.98	1.68
Equity Bank	7.34	5.81	7.56	6.46	7.01
Fidelity Bank	3.29	1.06	1.98	1.77	1.28
Fina Bank	1.15	0.98	1.07	1.4	1.64
Giro Bank	7.4	2.88	2.18	0.77	1.18
Guardian Bank	1.51	1.85	0.79	0.48	1.03
Habib AG Zurich	3.2	4.12	3.79	3.54	3.28
Habib Bank	4.66	4.3	3.5	3.13	0.19
Imperial Bank	7.11	5.57	5.35	5.32	4.48
KCB	4.39	3.26	3.86	3.97	3.71
K-Rep	1.49	-3.77	-6.5	3.1	3.37
Middle East	5.74	1.35	0.94	2.89	2.68
National Bank	4.48	4.59	4.27	4.15	2.72
NIC bank	4.9	3.39	4.02	3.66	2.9
Oriental	4.8	1.24	3.42	11.24	-4.61
Paramount	8.63	1.46	2.04	1.89	1.67
Prime bank	2.74	2.58	2.72	2.61	2.17
SCB	5.76	6.04	4.96	5.71	4.95
Transnational bank	3.9	3.16	3.65	2.79	2.01
Victoria bank	5.52	4.51	3.96	3.59	3

Source: Banking Survey (2011) Booklet