

**THE RELATIONSHIP BETWEEN PROFITABILITY AND CAPITAL
ADEQUACY OF COMMERCIAL BANKS IN KENYA**

BY:

CHRIS MAINA KIRAGU

**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF MASTER OF BUSINESS ADMINISTRATION (MBA),
SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

NOVEMBER, 2010

DECLARATION

This research paper is my original work and has not been presented for the award of any degree in any university.

Signature: 

Date: 14/11/2010

Name: CHRIS MAINA KIRAGU

Admission No: D61/70128/2008

This research has been submitted with my approval as university supervisor.

Signature: 

Date: 15.11.2010

Name: MR. MOSES ANYANGU

DEDICATION

This research paper is dedicated to my mum Wambui Kiragu and my brothers Migwe, Gitonga and Thuo.

ACKNOWLEDGEMENT

I would like to acknowledge the invaluable guidance of my supervisor, Mr. Moses Anyangu for his assistance throughout the stages of the research paper. Without his tireless efforts in guidance, this research work would not have come to its conclusion.

I am also especially grateful to Mr. Sifunjo for his guidance when completing the data analysis of this paper. I also thank all my lecturers for sharing with me their knowledge during this MBA course.

I also thank my employer, KCB for providing me with the opportunity and resources to complete this course.

To all those who participated in this research, I thank you and may God bless you abundantly.

ABSTRACT

This study set out to establish the relationship between profitability and capital adequacy of commercial banks in Kenya.

The population of the study included all the licensed commercial banks in Kenya that have been in operation over the last 6 years from 2004 to 2009.

The end year measures used for profitability were Return on Equity (ROE) and Return on Assets (ROA) while the end year measure for capital adequacy was Capital Asset Ratio (CAR). An empirical analysis was done and a regression model was used to establish whether the independent variables including CAR, have a significant relationship with the dependent variables, ROE and ROA. The regression model was then further modified and control variables included in the model to investigate further this relationship between the dependent and independent variables. The control variables included have been identified to have an effect on bank profitability and are credit risk, market power, operating efficiency, activity mix and size.

The findings of the study indicated that there is an insignificant relationship between ROE and capital. Even with the inclusion of control variables, the relationship remained insignificant.

On the other hand, the study found that there was a significant negative relationship between ROA and capital. On inclusion of control variables, the relationship between the two variables remained significant.

TABLE OF CONTENTS

CHAPTER ONE	1
1. Introduction	1
1.1. Background of the study	1
1.2. Statement of the Problem	6
1.3. Objectives of the Study	9
1.4. Significance of the Study	9
CHAPTER TWO	11
2. Literature Review	11
2.1. Introduction	11
2.2. Empirical Studies	11
2.3. Theories behind Financing Decisions	12
2.4. Determinants of Bank Earnings	14
2.5. Profitability Measures	19
2.6. Challenges Facing the Banking Sector.....	20
2.7. Approaches to Assessing the Relationship between Bank Capital and Earnings.....	21
2.8. Conclusion.....	21
CHAPTER THREE.....	23
3. Research Methodology	23
3.1. Introduction	23
3.2. Research Design.....	23
3.3. Population	23
3.4. Sample	23
3.5. Data Collection.....	24
3.6. Data Analysis	24
CHAPTER FOUR.....	27
4. Data Analysis, Results and Discussion	27
4.1 Introduction	27
4.2 Results	27
4.3 Discussion	34
CHAPTER FIVE.....	35

5. Summary, Conclusions and Recommendations35

5.1. Introduction35

5.2. Summary35

5.3. Conclusions36

5.4. Limitations of the Study36

5.5. Suggestions for Further Research36

References37

Appendices41

List of Tables

Table 1: ANOVA for ROE without Control Variables.....	28
Table 2: Model Summary for ROE without Control Variables	28
Table 3: Coefficients for ROE without Control Variables.....	29
Table 4: ANOVA for ROA without Control Variables	29
Table 5: Model Summary for ROA without Control Variables.....	30
Table 6: Coefficients for ROA without Control Variables	30
Table 7: ANOVA for ROE with Control Variables.....	31
Table 8: Model Summary for ROE with Control Variables	31
Table 9: Coefficients for ROE with Control Variables.....	32
Table 10: ANOVA for ROA with Control Variables.....	32
Table 11: Model Summary for ROA with Control Variables.....	33
Table 12: Coefficients for ROA with Control Variables	33
Table 13: Banks' Ratios For 2004.....	41
Table 14: Banks' Ratios For 2005.....	43
Table 15: Banks' Ratios For 2006.....	45
Table 16: Banks' Ratios For 2007.....	47
Table 17: Banks' Ratios For 2008.....	49
Table 18: Banks' Ratios For 2009.....	51

List of Abbreviations

- CAR:** Capital Adequacy Ratio
- CBK:** Central Bank of Kenya
- CRB:** Credit Reference Bureau
- DFI:** Development Financial Institutions
- FSD:** Financial Sector Deepening
- GDP:** Gross Domestic Product
- Kshs:** Kenya Shilling
- MP:** Market Power
- NSE:** Nairobi Stock Exchange
- ROA:** Return on Assets
- ROE:** Return on Equity
- USA:** United States of America

CHAPTER ONE

1. Introduction

This chapter provides the general area of the research which refers to the relationship between earnings and capital adequacy among commercial banks. It also provides the background of the study and the problem statement hence providing the need for the research to be undertaken. The objectives of the research project are also explained together with the research question which the researcher wishes to get answers. Finally the importance and scope of the study have also been covered in this chapter.

1.1. Background of the study

The financial sector plays an important role in the development process of a country through financial intermediation. Strong financial institutions are critical for increased investment, economic growth, employment and poverty alleviation, Kyalo (2002).

Banking in Kenya and the financial services sector in general has been identified as a key success pillar to attaining vision 2030 of making Kenya a middle income country by providing a facilitating macro-economic stability for long term development, (The Kenya Vision 2030 Blue print, 2007). Since banks are such critical entities in an economy their stability and success as going concerns is given a lot of attention by various stakeholders including the government through the regulator, the central bank of Kenya (CBK) and the public.

Bank capital is defined as the buffer storage of cash and safe assets that banks hold and to which they need access in order to protect creditors in case the banks assets are liquidated. Capital is one aspect that is critical to the sustainability and success of banks. The premise of the capital regulation framework is the Basel Committee on Banking Supervision set up by the developed economies to govern their banks. Currently, Kenyan banks operate under the Basel I framework of which among other pillars, sets out the minimum capital levels of banks and provides an approach of calculating minimum capital for a banking institution operating as a going concern.

There are plans underway to implement the Basel II framework of 2004 which goes further and improves on the previous framework to cover three key areas; minimum capital requirements, supervisory review and market discipline. Many banks in the developed economies have already implemented this framework and are now completing the formulation of the Basel III framework.

Here in Kenya however, Basel II implementation has begun but is not yet complete and the central bank has over the years been focusing on providing a roadmap for preparedness of implementation of Basel II. The year 2010 will mark the implementation of the framework across all the banks in the country according to the CBK Basel II implementation survey results (2008).

One important aspect of Basel I dealt with capital adequacy, where banks are required to set aside adequate capital to cover the credit, market and operational risks they face. Capital ratios of Total Regulatory capital expressed as a percentage of Total risk-weighted assets and Tier 1 capital expressed as a percentage of Total risk weighted assets

of 12% and 8% respectively had been clearly defined and stipulated and banks were required to follow them. This has been implemented, with banks whenever their reporting their quarterly results includes these ratios as part of their disclosures.

Bank capital is categorized in to two according to the CBK prudential guidelines; Core Capital (Tier I) and Supplemental capital (Tier II).

Core capital consists of permanent shareholders equity (issued and fully paid-up ordinary shares and perpetual non-cumulative preference shares), disclosed reserves such as share premium, retained earnings and 50% un-audited after tax profits less investments in subsidiaries conducting banking business, investment in equity instruments of other institutions, intangible assets (excluding computer software) and goodwill. (The current year to date 50% un-audited after tax profits will qualify as part of core capital, if and only if, the institution has made adequate provisions for loans and advances, proposed dividends and other appropriations have been deducted).

Supplemental capital consists of 25% of asset revaluation reserves which have received prior Central Bank's approval, subordinated debt, hybrid (debt equity) capital instruments or any other capital instrument approved by Central Bank. Supplementary capital however, must not exceed core capital. (Central Bank of Kenya, Prudential Guidelines for Banks Licensed under the Banking Act).

It is an area that the regulator, the CBK can exercise some form of control over to protect the economy from collapse. Focus on bank capital became more obvious during the global financial crisis that escalated in late 2008, when banks in the developed economies

were on the verge of collapse having to be saved by tax payer funds from the government. The minimum statutory core capital of commercial banks in Kenya is expected to hit Kshs 1 billion by 2012 through annual graduation. This follows a review in 2008 where the amount was raised from Kshs 250 million, with banks expected to have Kshs 350 million by the end of 2009, Kshs 500 million by the end of 2010 and Kshs 700 million by the end of 2011, (CBK, Bank Supervision Annual Report, 2009).

Apart from regulation, there are various other reasons for banks to hold capital. They include guarding against moral hazard. Moral hazard is inversely related to bank capital. The owners of poorly capitalized banks have little of their own money to lose from risky investment strategies. By implication, financial distress in the bank itself worsens moral hazard, because, as the value of the bank's capital falls, the incentives on its owners to pursue strategies which might preserve its solvency are reduced, Berger et al (1995).

In addition, Financial markets frictions and adverse selection force banks to invest heavily in private information to avoid risk insolvency. Diamond (1984), proposed that some banks avoid insolvency through a variety of means, including holding a capital buffer of sufficient size, holding enough liquid assets and engaging in risk management.

A capital level of sufficient size in commercial banks signals a bank's own bet on asset quality to less informed creditors, and by banks signaling their asset quality they reduce probability of liquidity crisis, lower cost of borrowed funds and hence increases market value, Hughes et al (1998). Banks hold funds that are demandable in nature, and the nature of these funds instill the discipline of bank risk-taking, which influences the level of capital banks hold. Banks that signal efficient allocation of their capital as well as hold

a sufficient size of capital are likely to maximize the market value, and the net effect could be an improvement in the value of bank's assets, Kyalo (2002).

Bank capital is also a determinant of earnings; in imperfect capital markets, well-capitalized banks need to borrow less in order to support a given level of assets, and tend to face lower cost of funding due to lower prospective bankruptcy costs. Also, in the presence of asymmetric information, a well-capitalized bank could provide a signal to the market that a better-than-average performance should be expected, Berger (1995).

Bank profitability has been a focus point here in Kenya. The sector recorded a 13% increase in pre-tax profit in 2009 of Kshs 48.9 billion. This performance was registered in the midst of global and local shocks. Bank earnings consist of interest income which forms the majority of total income (70%) and non-interest income. Bank expenses consist of operating expenses that form the majority of expenses (70%) and interest expenses. There have been recent developments in the banking sector that may have an affect bank earnings; introduction of agency banking that allows approved third party agents to conduct banking business as well as the setting up of a Credit Reference Bureau (CRB) that allows banks to share credit information. As the level of competition increases, the determinants of profitability are receiving additional focus as banks attempt to differentiate themselves. (CBK, Bank Supervision Annual Report, 2009).

In addition, banks that cater for the bottom of the pyramid segment have become major competitors to the bigger more established banks. New branches have been opened all over the country to cater for the unbanked and the result has been an increase in level of penetration of financial services and a paradigm shift of the operations of the bank so as

to become more customer centric. More multinational banks have set up base in the country increasing further the level of competition. Other developments have been the exponential growth and use of mobile phone technology in the operations of banks. This has made banking to become a more seamless service and has augmented the penetration levels of financial services as it is no longer restricted to the “brick & mortar” model. (FSD Kenya Report, 2009).

The Nairobi Stock Exchange (NSE) has listed 9 commercial banks namely; Kenya Commercial Bank, Barclays Bank, Standard Chartered Bank, Diamond Trust Bank, NIC Bank, Co-operative Bank, Equity Bank, CFC Stanbic Bank and National Bank. These banks control majority (70%) of the banking sector’s assets at end of 2009. (CBK, Bank Supervision Annual Report, 2009).

There are various factors that affect earnings by banks both intrinsic as well environmental /macro economic factors. This study will investigate the relationship between bank profitability and capital adequacy.

1.2.Statement of the Problem

Theoretically, a higher capital tends to reduce the risk on equity and therefore lowers the equilibrium expected return on equity required by investors. In addition, higher capital lowers after tax earnings by reducing the tax shield provided by the deductibility of interest payments.

Despite these arguments, the results on the studies conducted by various scholars are varied. Flamini et al (2009) investigated the determinants of bank profitability in sub-

Saharan Africa found that in an imperfect capital market, a higher capital ratio tends to lower the equilibrium deposit rate required by depositors as well as the equilibrium expected return on assets required by shareholders. Due to the short term characterization of deposits, however, deposit rates adjust quickly, thus instantly increasing banks' expected earnings. This explains the positive contemporaneous correlation between equity and returns. If loans take longer to reprice, this will create a negative causation between past equity and current returns.

Hutchinson and Cox (2006) in investigating the relationship between capital and profitability in banks, found that for banks in the U.S. there is a positive relationship between financial leverage and the return on equity for both periods where one period was less regulated while the other period was highly regulated. They also found that return on assets is inversely related to financial leverage.

Berger (2006) in investigating a new approach to testing agency theory and an application to the banking industry found that a higher leverage or a lower capital ratio is positively related to higher profitability, all else equal.

Kyalo (2002) in establishing the relationship between level of capitalization and efficiency among banks listed in the NSE found that highly capitalized banks are the least efficient and vice versa, which was the opposite of similar research conducted in the developed economies by Hughes et al (1998) that indicated highly capitalized banks are the most efficient with the reverse being true.

Wandeto (2005) study on the relationship between dividend changes and earnings, cash flows and capital structure for firms listed on the NSE found that leverage has a direct relationship with dividends. The nature of the relationship was inverse with the more dividends paid the lesser the amount of debt to equity and vice versa. The scope of the study included listed banks.

Munene (2006) objective of study was to ascertain whether there exists a relationship between profitability of a firm and sources of financing of these firms quoted at the NSE. He found that there was a weak positive relationship between the two variables with a conclusion that profitability on its own is a minor determinant of capital structure.

Nyaboga (2008) study on the relationship between capital structure and agency cost among listed firms in the NSE excluding banks, found that there is no positive correlation between the two variables with agency cost measured using the efficiency ratio and asset utilization. The findings showed that there is no relationship between the variables.

It is not clear within the context of Kenya, whether there is a relationship between profitability and capital adequacy in Kenyan banks as various external studies have established conflicting conclusions on the same. Banks are important intermediaries of the economy and bank capital determines how sustainable banks will be as going concerns.

It is therefore important to investigate the relationship between profitability and bank capital in Kenya so that the stakeholders in the sector understand the relevance and importance of capital in the banking sector especially on profitability.

The research question of this study is; what is the relationship between profitability and capital adequacy of commercial banks in Kenya.

1.3.Objectives of the Study

The objective of this study is to establish the relationship between profitability and capital adequacy of commercial banks in Kenya.

1.4 Significance of the Study

The study intends to provide value to the following related parties as shown below;

Bank Management

The results of the study will provide them with insight as to how significant bank capital affects its earnings. Having this information will direct senior management to work towards attaining an optimal structure that maximizes returns to the shareholders as well as other stakeholders.

It will also improve managerial performance by identifying “best” and “worst” practices associated with capitalization levels.

Regulator: Central Bank of Kenya

The study will be viewed as contributing indirectly to policy makers, researchers and managers on issues regarding regulations, deregulations and financial disruption, CBK could apply the findings in providing regulation on optimal capital levels for the local banks.

Academicians

The results of the study will provide a basis for further research in to the relevance of capital in banks within the context of the local economy.

Consultants

When providing advisory services on optimal capital structure, results of this study would provide a basis for any solutions they provide to their clients.

Investors

Investors will be able to better identify good investment opportunities. Since capital is one of the determinants for earnings, the results provide some indication on those investments that will maximize their returns.

CHAPTER TWO

2. Literature Review

2.1. Introduction

This chapter provides information gathered from selected literature and articles on bank capital and profitability.

2.2. Empirical Studies

There have been studies that have been conducted related to this area;

Kyalo (2002) in establishing the relationship between level of capitalization and efficiency among banks listed in the NSE found that highly capitalized banks are the least efficient and vice versa, which was the opposite of similar research conducted in the developed economies by Hughes et al (1998) that indicated highly capitalized banks are the most efficient with the reverse being true.

Hutchinson and Cox (2006) investigated the relationship between bank capital and earnings among USA banks. The study scope was categorized into two periods, less regulated period and a more highly regulated period with the intention of determining the correlation between capital and profitability in these two periods. The results of the study showed that for both periods there was a positive relationship between financial leverage and the return on equity while there was an inverse relationship between return on assets and financial leverage.

Wandeto (2005) study on the relationship between dividend changes and earnings, cash flows and capital structure for firms listed on the NSE found that leverage has a direct relationship with dividends. The nature of the relationship was inverse with the more dividends paid the lesser the amount of debt to equity and vice versa. The scope of the study included listed banks.

Munene (2006) objective of study was to ascertain whether there exists a relationship between profitability of a firm and sources of financing of these firms quoted at the NSE. He found that there was a weak positive relationship between the two variables with a conclusion that profitability on its own is a minor determinant of capital structure.

Nyaboga (2008) study on the relationship between capital structure and agency cost among listed firms in the NSE excluding banks, found that there is no positive correlation between the two variables with agency cost measured using the efficiency ratio and asset utilization. The findings showed that there is no relationship between the variables.

2.3.Theories behind Financing Decisions

Financing decisions are related to the mix of debt and equity used by firms in financing an investment or the composition of a firm's long term financing consisting of a firm's long term debt, equity and preferred stock as well as the relationship between profitability and capital.

Pecking Order Theory

This theory was developed by Stewart C. Myers in 1984 and states that companies prioritise their sources of financing (from internal financing to equity). Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible

to issue any debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required.

Agency Cost Theory

The agency cost theory of capital structure states that an optimal capital structure will be determined by minimising the costs arising from conflicts between the parties involved. Jensen and Meckling (1976) argue that agency costs play an important role in financing decisions due to the conflict that may exist between shareholders and debtholders. If companies are approaching financial distress, shareholders can encourage management to take decisions, which, in effect, expropriate funds from debtholders to equityholders. Sophisticated debtholders will then require a higher return for their funds if there is potential for this transfer of wealth. Debt and the accompanying interest payments, however, may reduce the agency conflict between shareholders and managers. Debtholders have legal redress if management fails to make interest payments when they are due, hence managers concerned about potential loss of job, will be more likely to operate the firm as efficiently as possible in order to meet the interest payments, thus aligning their behaviour closer to shareholder wealth maximisation.

Trade-Off theory

This theory allows for bankruptcy costs to exist. It also states that there is an advantage to financing with debt (tax benefit) and there is a cost of financing with debt (interest expense). The marginal benefit of further increases in debt decline as debt increases.

while marginal costs increases so that the firm that is optimizing its overall value will focus on this trade off when choosing how much debt and equity to use for financing.

2.4.Determinants of Bank Earnings

Capital is an important determinant of earnings in banks. However, there are other determinants of bank earnings.

Bank earnings are as a result of three major components; bank specific, industry specific and macro-economic determinants, which are as follows;

2.4.1. Credit Risk

This refers to the risk of financial loss to the bank if a customer or a counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the bank's loans and advances to customers, placement and balances with other counter parties and investment securities. Based on standard asset pricing arguments, it is expected that there is a positive association between profits and bank risk. Al-Hashimi (2007) finds a positive effect of credit risk on Sub-Saharan African net interest margins. However, other studies, Miller and Noulas (1997), point out that credit risk should unleash a negative impact on profitability since the higher the level of high-risk loans, the higher the level of unpaid loans.

2.4.2. Activity Mix

This is an important proxy for the overall level of risk undertaken by banks to the extent that different sources of income are characterized by different credit risk and volatility. Activity mix is measured by the ratio of net interest revenues over other operating

income. Interest earning activities are generally regarded as riskier than fee based activities, which would need to be rewarded by higher returns. Demirguc-Kunt and Huizinga (1998) in their study of banks in 80 countries found that those with relatively high non-interest earning assets are, in general, less profitable. Banks that rely on deposits for their funding are less profitable, possibly due to the required extensive branch network, and other expenses that are incurred in administering deposit accounts.

2.4.3. Capital

It is an important variable in determining bank profitability. In imperfect capital markets, well-capitalized banks need to borrow less in order to support a given level of assets, and tend to face lower cost of funding due to lower prospective bankruptcy costs. Also in the presence of asymmetric information, a well capitalized bank could provide a signal to the market that a better than average performance should be expected, Athanasoglou et al. (2005) and Berger (1995). Well capitalized banks are, in this regard, less risky and profits should be lower because they are perceived to be safer.

Theoretically, however, higher capital breeds higher profitability levels since by having more capital, a bank can easily adhere to regulatory capital standards so that excess can be provided as loans.

2.4.4. Size

This also signals bank specific risk. Size is a result of a bank strategy, but the variable alone does not guarantee the earning of excess returns. To the extent that government is less likely to allow big banks to fail. A risk approach to size would predict that bigger banks would require lower profits (e.g. through lower interest rates charged to

borrowers). However, if larger banks have a greater portion of the domestic market, and operate in a non-competitive environment, lending rates may remain high (while deposit rates for larger banks are lower because they are perceived to be safer) and consequently larger banks may enjoy higher profits. Boyd and Runkle (1993), in their banking performance study, conclude that an inverse relation exists between size and profitability. Similar results are obtained by Miller and Noulas (1997) in the USA, Naceur (2003) in Tunisia and Jiang et al. (2003) in Hong Kong, implying that larger banks achieve a lower level of profits than smaller ones. However, findings from both Sinkey (1992) and Staikouras and Wood (2003) are mixed. The former shows that firm size impacts banking profitability negatively for large banks but positively for small ones. The latter also concludes that medium-sized banks earn the highest return followed by small banks. This may suggest that inter-bank market is competitive and efficient since banks with a large retail deposit-taking network do not necessarily gain a cost advantage.

However, other studies, Molyneux and Thornton (1992) have shown that larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the effect that they will tend to enjoy a higher level of profits, thus a positive relationship between size and profitability.

2.4.5. Management

They are responsible for managing efficiency in the bank. As conventional wisdom suggests, the higher the expense of a bank, the lesser the bank's profitability will be.

Such a negative relation between expenses and profitability has been supported by studies of Bourke (1989) and Jiang et al. (2003), implying that profitable banks are able to operate at lower cost.

On the contrary, Molyneux and Thornton (1992) find that the expense variable affects European banking profitability positively. They propose that high profits earned by firms in a regulated industry may be appropriate in the form of higher salary and wage expenditures. Their findings support the efficiency wage theory, which states that the productivity of employees increases with the wage rate. This positive relationship between profitability and expenses is also observed in Tunisia, Naceur (2003) and Malaysia, Guru et al. (2002). The proponents argue that these banks are able to pass their overheads to depositors and borrowers in terms of lower deposit rates and/or larger lending assets.

Apart from overhead expenditures, banks are also subject to direct taxation through corporate tax and other taxes. Although the tax rate on corporate profits is not a choice for banks, yet the bank management should be able to allocate its portfolio to minimize its tax. Since consumers face an inelastic demand for banking services, most banks are able to pass the tax burden to the consumers. Such a positive relationship between the tax variable and profitability is confirmed by Demirguc-Kunt and Huizinga (1999) and Jiang et al. (2003).

2.4.6. Industry Specific- Market Power

This is expected to be a major determinant of profits. This is because banks in more concentrated markets should be capable of adjusting spreads in response to unfavourable changes in the macro-economic environment to leave returns unaffected. On the other hand, in case of a well diversified market structure, banks are expected to enjoy low profit levels on the back of a highly competitive market structure. According to Berger (1995), under relative market power hypotheses, only banks with large market shares and

well differentiated products are able to exercise market power and earn non-competitive profits. It is measured by the ratio of each bank's total outstanding loans to the net domestic credit of the country.

2.4.7. Macro-Economic Factors

Macro-economic determinants are factors that the bank has no control over and they are as follows;

Firstly, there will be a higher demand for bank credit in times of economic boom than in times of recession. A high aggregate growth rate may strengthen the debt servicing capacity of domestic borrowers, and therefore, contribute to less credit risk.

Alternatively, adverse macroeconomic conditions hurt banks by increasing the amount of non-performing loans. Thus, it is expected that an improvement in economic growth in GDP helps bank performance. Bourke (1989) presents evidence that economic growth, if particularly, associated with entry barriers to the banking market, would potentially lift banks' profits.

Secondly, it is generally believed that a rising interest rate should lead to higher banking sector profitability by increasing the spread between the saving and the borrowing rates. Hanweck and Kilcollin (1984) find that this relationship is particularly apparent for smaller banks in the USA during the 1976-1984 period. They notice that falling interest rates during recession lead to slower growth in loans and increase in loan loss. Consequently, banks, particularly the small ones, may have difficulty in maintaining profit as market rate drops. Further studies by Demirguc-Kunt and Huizinga (1999), Staikouras and Wood (2003), notice a positive relationship between interest rates and bank profitability.

Finally, the effect of inflation is also another important determinant of banking performance. In general, high inflation rates are associated with high loan interest rates and thus high income. Perry (1992), however, asserts that the effect of inflation on banking performance depends on whether inflation is anticipated or unanticipated. If inflation is fully anticipated and interest rates are adjusted accordingly, a positive impact on profitability will result. Alternatively, unexpected rises in inflation cause cash flow difficulties for borrowers, which can lead to premature termination of loan arrangements and precipitate loan losses. Indeed, if the banks are sluggish in adjusting their interest rates, there is a possibility that bank costs may increase faster than bank revenues. Hoggarth et al. (1998) even conclude that high and variable inflation may cause difficulties in planning and in negotiation of loans. Demirguc-Kunt and Huizinga (1999) noticed that banks in developing countries tend to be less profitable in inflationary environments, particularly when they have a high capital ratio. In these countries, bank costs actually increase faster than bank revenues.

2.5. Profitability Measures

Commercial banks' profitability is determined from the interest spreads between loans and deposits, as majority of its income is from interest income. As profitability is determined from revenue and costs, banks have to closely monitor the factors that affect these two determinants.

Profitability measures across the banking sector as indicated in the (CBK annual reports 2009) are done in two ways;

Return on Assets (ROA); this is measured by the net profits before tax divided by the total assets of the bank. It measures the overall effectiveness in generating profits with available assets.

Return on Equity (ROE); this measured the net profits before tax divided by capital and reserves. It measures the earning power of shareholders investments. Shareholders and investors will be pay attention to this measure and will want to maximize it for their benefit.

Other measures that have been established as a means of comparison among banks include the cost income ratio. Though it is a measure of efficiency, it ultimately has an effect on the level of profitability among the banks.

2.6.Challenges Facing the Banking Sector

The main challenges facing the Banking sector today according to the CBK annual supervision report, 2009 include;

New regulations; For instance, the Finance Act 2008, which took effect on 1 January 2009 that requires banks and mortgage firms to build a minimum core capital of Kshs 1 billion by December 2012. This requirement, it is hoped, will help transform small banks into more stable organisations. The implementation of this requirement poses a challenge to some of the existing banks and they may be forced to merge in order to comply.

Global financial crisis experienced in late 2008 affected the banking industry in Kenya especially in regard to deposits mobilisation, reduction in trade volumes and the performance of assets. There was a decline in the growth rates.

As well as declining interest margins due to pressure from the central and also due to competition with other commercial banks and Development Financial Institutions (DFIs).

2.7. Approaches to Assessing the Relationship between Bank Capital and Earnings

Berger (1995) in establishing the relationship between capital and earnings in banking used a simple two variable empirical model by assuming that Capital Asset Ratio (CAR) and Return on Equity (ROE) form a simple two variable system without the necessity of controlling for other factors. A similar two variable model was used to establish the relationship between CAR and ROA.

The results of the model did show a relationship between the two. However, the model was further modified to provide for control variables.

The results showed that for USA banks in the 1980s there was a strong positive relationship between capital and earnings. There were also significant spurious effects from other variables, but these variables tended to dampen rather than accentuate the relationship.

2.8. Conclusion

Previous research has shown that capital is a determinant of profitability among commercial banks. The nature of that relationship is however not clear as some studies have shown a positive correlation while others have shown a negative correlation.

However, it is evident that the specific studies of determinants of bank profitability and the relationship between profitability and capital of commercial banks in Kenya have not

been given due attention by researchers. The intention of this study is to identify within Kenya's context whether profitability and capital adequacy among commercial banks have a relationship.

CHAPTER THREE

3. Research Methodology

3.1. Introduction

This chapter outlines the strategy that was used in gathering data and information for addressing the research problem and objectives. It discussed the research design identifying the population of study, sample and data collection methods as well as data analysis and data presentation methods employed in the study.

3.2. Research Design

The design most appropriate for this study is an empirical study. The study was cross sectional as it collected data from a cross section of banks as well as longitudinal as the data collected covered six years from 2004 to 2009.

3.3. Population

The population of this study was all the licensed commercial banks in Kenya. As at December 2009, the banks numbered forty four (44) according to the CBK.

3.4. Sample

A sample for this study was necessary as only 39 out of the 44 banks operating today were able to provide complete data over the relevant study period. The sample was 39 banks.

3.5.Data Collection

The study used secondary data. Secondary data was collected from the published annual financial statements of the banks. The balance sheet and income statements over the years will provide information on earnings, capitalization levels as well as other factors that affect earnings.

Data on the banking sector in general was obtained from the Central Bank of Kenya annual reports and the banking surveys for the relevant years.

3.6.Data Analysis

The end year annual measures of capital is the capital asset ratio (CAR, defined as the value of capital plus reserves at year end divided by assets), return on equity (ROE, defined as profit before tax divided by equity at year end) and return on assets (ROA, defined as profit before tax divided by total assets at year end) are the main variables to be measured so as to identify the relationship between the variables.

There are other variables that have an effect on bank profitability that are not generic are the control variables. The control variables are;

Credit risk will be measured by the ratio of loans to deposits since this provides a forward-looking measure of bank exposure to default and asset quality deterioration. Market power (MP), it is measured by the ratio of each bank's total outstanding loans to the net domestic credit of the country over the relevant period. Operating efficiency will be measured by the cost income ratio of each bank at each year end. Activity mix is measured by the ratio of net interest revenues over other operating income at year end.

Size will be measured by the ratio of total assets of each bank to the total assets of all the banks in the country at year end.

The regression model measured the variables with ROE and ROA being the dependant variables and capital being the independent variable.

The t-test was used in the analysis.

The empirical analysis starts by assuming that CAR and ROE form a simple two variable system without the necessity of controlling for other factors; this model is repeated for CAR and ROA. The relationship between these variables was examined using annual data over the study period.

In order to determine the nature of the relationship between these variables, the study used tests of what happens to each variable in the one year after the other variable changes. Each variable is (y_t) is regressed on one lag of both itself (y_{t-1}) and other variables (x_{t-1}). If the coefficients of the x lags are outside the confidence level, then x has a significant relationship with y. The results of the analysis provide for whether the independent variable has a significant relationship with the values of the dependant variable.

The analysis involved use of annual data plus one year lag on book values of capital and profitability.

Thus the regression equation as used by Hutchinson and Cox (2006) is:

$$ROE_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROE_{t-1} + \epsilon_t$$

Where Cap is bank capital, ROE is return on equity, t-1 is the first period lag, α , and β are coefficients.

While for return on assets, the equation will be;

$$ROA = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROA_{t-1} + \epsilon_t$$

Once the regression with ROE and ROA as the dependent variable is completed, the study added some control variables to try establish further the relationship between the variables.

In order to address the impact of control variables on realized capital values, the test will use the same regressions of ROE and ROA on one lag period values of capital. The change in capital and the control variables of size, activity mix, credit risk, operating efficiency and market power are lagged one period relative to the dependent variable to minimize simultaneity problems and to allow for the variables to take effect. This is represented by;

$$ROE_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROE_{t-1} + \beta_3 Size_{t-1} + \beta_4 Risk_{t-1} + \beta_5 Efficiency_{t-1} + \beta_6 MP_{t-1} + \beta_7 Activity_{t-1} + \epsilon_t$$

$$ROA_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROE_{t-1} + \beta_3 Size_{t-1} + \beta_4 Risk_{t-1} + \beta_5 Efficiency_{t-1} + \beta_6 MP_{t-1} + \beta_7 Activity_{t-1} + \epsilon_t$$

The software package used in the data analysis is SPSS.

CHAPTER FOUR

4. Data Analysis, Results and Discussion

4.1 Introduction

This chapter presents the results and findings of the study based on the research objectives. The results were presented in the form of summary tables. Regression analysis was used to analyse the data to answer the research objective.

4.2 Results

Regression analysis was conducted without control variables as well as with control variables.

Test of significance was carried out for all variables studied using the t-test at the 95% level of significance.

From the observations;

Any p-value that is greater than 0.05 will be deemed to have a significant relationship with the dependent variable else the relationship is considered insignificant.

The standardized coefficient and the t-statistic indicate the strength of the relationship between the dependent and independent variables.

The adjusted R square measures the degree of variability of the dependent variable due to the change in the independent variable.

The results are as indicated below while the source data is presented in a tabular format in the appendix.

4.2.1 Regression Model without control variables

The regression model used is as follows;

$$ROE_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROE_{t-1} + \epsilon_t$$

Table 1: ANOVA for ROE without Control Variables

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	208.151	2	104.075	.954	.387(a)
Residual	20952.660	192	109.128		
Total	21160.811	194			

a Predictors: (Constant), ROE_t-1, CAR_t-1

b Dependent Variable: ROE_t

The above table shows that the model fit is not a fit with an F statistic of 0.954 at 95% confidence level. This shows that the selected variables of lagged capital and ROE are not relevant determinants of ROE. It also shows that variables with a p-value of greater than 0.05 have no significant relationship with ROE.

Table 2: Model Summary for ROE without Control Variables

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.099(a)	.010	.000	10.446456	.010	.954	2	192	.387

a Predictors: (Constant), ROE_t-1, CAR_t-1

The model shows an R square value of 0.01 with a p-value of 0.387 that is greater than 0.05 indicates that there is an insignificant multiple correlation/relationship between the lag ROE, the lag capital and the dependent variable ROE.

Table 3: Coefficients for ROE without Control Variables

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.204	1.832		1.748	.082	-.410	6.818
CAR_t-1	-7.763	6.932	-.087	-1.120	.264	-21.435	5.909
ROE_t-1	-6.048	5.164	-.091	-1.171	.243	-16.233	4.137

a Dependent Variable: ROE_t

When lagged ROE and Capital as independent variables is regressed against the dependent variable ROE, the p value is 0.387 which is significantly greater than 0.05 thus at 95% confidence level there is no significant relationship between the variables. Thus from the observations, lagged capital and lagged ROE have no relationship effect on ROE over the observed period.

$$ROA_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROA_{t-1} + \epsilon_t,$$

Table 4: ANOVA for ROA without Control Variables

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.043	2	.022	42.663	.000(a)
Residual	.097	192	.001		
Total	.140	194			

a Predictors: (Constant), ROA_t-1, CAR_t-1

b Dependent Variable: ROA_t

The statistics in the table above shows that there is a perfect model fit with an F statistics of 42.663, significant at 95%. This means that the model specification is correct and that the selected independent variables are determinants of return on assets. It also indicate that variables with p-value greater than 0.05 have no significant relationship with ROA. The extent of the impact is discussed in the next paragraph.

Table 5: Model Summary for ROA without Control Variables

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.555(a)	.308	.300	.022500	.308	42.663	2	192	.000

a Predictors: (Constant), ROA_t-1, CAR_t-1

The table of model summary above shows that the R is 0.308 with a p-value of 0.00, this imply that there is a very significant multiple correlation/relationship between the ROA lag and CAR lag. It also shows that the model explains up to 30% of the variations in the ROA of the banks. The beta coefficient table below shows the individual effect of the independent variables.

Table 6: Coefficients for ROA without Control Variables

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.018	.003		5.312	.000	.011	.024
CAR_t-1	-.032	.014	-.137	-2.227	.027	-.059	-.004
ROA_t-1	.476	.057	.509	8.290	.000	.363	.589

a Dependent Variable: ROA_t

Although the table above shows that the constant is very significant meaning that there are some determinants of ROA not included in the model, some of the independent variables in the model are very significant. The table shows that the CAR lag have a significant negative impact of up to 13.7% ROA i.e. $\beta = -0.137$, $p = 0.027$. It also shows that ROA lag has a significant positive effect of up to 50.9% on ROA i.e. $\beta = 0.509$, $p = 0.000$. The model fit well and explains up to 30% of the changes/variations in the ROA of the banks i.e. $\text{Adj. } R^2 = 0.30$, $F = 42.663$ $p = 0.00$.

4.2.2 Regression Model with control variables

The regression model used is as follows;

$$ROE_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROE_{t-1} + \beta_3 Size_{t-1} + \beta_4 Risk_{t-1} + \beta_5 Efficiency_{t-1} + \beta_6 MP_{t-1} + \beta_7 Activity_{t-1} + \epsilon_1$$

Table 7: ANOVA for ROE with Control Variables

	Sum of Squares	df	Mean Square	F	Sig.
Regression	262.794	7	37.542	.336	.937(a)
Residual	20898.017	187	111.754		
Total	21160.811	194			

a Predictors: (Constant), Size_t-1, CreditRisk_t-1, Efficiency_t-1, ActivityMix_t-1, CAR_t-1, ROE_t-1, MP_t-1

b Dependent Variable: ROE_t

The above shows a low level of fit with an F-value of 0.336. The model is therefore not a fit with the specifications therein unable to explain the relationship between the dependent and the independent variables. The p-value is greater than 0.05 thus lagged Capital, ROE, size, risk, efficiency, market power and activity values are insignificant determinants of ROE.

Table 8: Model Summary for ROE with Control Variables

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.111(a)	.012	-.025	10.571381	.012	.336	7	187	.937

a Predictors: (Constant), Size_t-1, CreditRisk_t-1, Efficiency_t-1, ActivityMix_t-1, CAR_t-1, ROE_t-1, MP_t-1

The R square value of 0.012 is small with a p-value of 0.937 and shows the level of insignificance of the independent variables on the dependent variable.

Table 9: Coefficients for ROE with Control Variables

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.479	5.595		.443	.658	-8.558	13.516
CAR_t-1	-9.849	9.465	-.110	-1.041	.299	-28.521	8.822
ROE_t-1	-2.637	8.996	-.040	-.293	.770	-20.383	15.109
CreditRisk_t-1	.875	2.801	.032	.312	.755	-4.650	6.401
MP_t-1	.772	94.723	.003	.008	.994	-186.090	187.635
Efficiencyt_t-1	.015	.054	.033	.279	.781	-.091	.121
ActivityMix_t-1	-.361	.742	-.040	-.486	.627	-1.825	1.103
Size_t-1	-13.130	95.675	-.048	-.137	.891	-201.871	175.612

a Dependent Variable: ROE_t

When control variables are included in the regression with lagged ROE, Capital and control variables as independent variables is regressed against the dependent variable ROE, the p value of the model is capital is 0.937 which is greater than 0.05 at 95% confidence level thus there is no significant relationship between the variables compared. The p-value of capital observed as the single determinant is 0.299 which is higher than 0.05. Thus from the observations, capital has no relationship effect on ROE over the observed period.

$$ROA_t = \alpha + \beta_1 CAR_{t-1} + \beta_2 ROE_{t-1} + \beta_3 Size_{t-1} + \beta_4 Risk_{t-1} + \beta_5 Efficiency_{t-1} + \beta_6 MP_{t-1} + \beta_7 Activity_{t-1} + \epsilon_1$$

Table 10: ANOVA for ROA with Control Variables

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.059	7	.008	19.516	.000(a)
Residual	.081	187	.000		
Total	.140	194			

a Predictors: (Constant), Size_t-1, CreditRisk_t-1, Efficiencyt_t-1, ActivityMix_t-1, CAR_t-1, ROA_t-1, MP_t-1

b Dependent Variable: ROA_t

The statistics in the table above shows that there is a perfect model fit with an F statistics of 19.516 significant at 95%. This means that the model specification is correct and that the selected independent variables with the control variables are determinants of return on assets. It also indicates that variables with p-value greater than 0.05 have no significant relationship with ROA. The extent of the impact is discussed in the next paragraph.

Table 11: Model Summary for ROA with Control Variables

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.650(a)	.422	.401	.020828	.422	19.516	7	187	.000

a Predictors: (Constant), Size_t-1, CreditRisk_t-1, Efficiencyt_t-1, ActivityMix_t-1, CAR_t-1, ROA_t-1, MP_t-1

The table of model summary above shows that the R square is 0.422 with a p-value of 0.00, this imply that there is a very significant multiple correlation/relationship between the ROA lag, CAR lag and the control variables lag. It also shows that the model explains up to 42% of the variations in the ROA of the banks. The beta coefficient table below shows the individual effect of the independent variables.

Table 12: Coefficients for ROA with Control Variables

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.027	.011		2.427	.016	.005	.049
ROA_t-1	.328	.089	.351	3.678	.000	.152	.504
CAR_t-1	.042	.018	.182	2.273	.024	.006	.078
CreditRisk_t-1	-.027	.006	-.394	-4.951	.000	-.038	-.016
MP_t-1	.054	.187	.077	.291	.771	-.314	.423
Efficiencyt_t-1	.000	.000	-.102	-1.043	.298	.000	.000
ActivityMix_t-1	.002	.001	.103	1.620	.107	-.001	.005
Size_t-1	.123	.187	.173	.658	.511	-.245	.491

a Dependent Variable: ROA_t

Although the table above shows that the constant is very significant meaning that there are some determinants of ROA not included in the model, some of the independent variables in the model are very significant. The table shows that the CAR lag have a significant positive impact of up to 18.2% ROA i.e. $\beta = -0.182$, $p = 0.024$. It also shows that ROA lag has a significant positive effect of up to 35.1% on ROA i.e. $\beta = 0.351$, $p = 0.000$. Credit risk is also a significant negative impact on ROA of up to 39.4% ROA i.e. $\beta = -0.394$, $p = 0.000$. The model fit well and explains up to 40% of the changes/variations in the ROA of the banks i.e. $\text{Adj. } R^2 = 0.401$, $F = 19.516$ $p = 0.00$.

4.3 Discussion

The results show that the relationship between ROE and CAR is not significant. The lagged values of capital adequacy and ROE are not significant determinants of ROE among the Kenya banks over the last 5 years. When control variables are added on to the regression equation, the results are similar with there being no relationship between the independent variables and the dependent variable.

In the analysis of the relationship between ROA and CAR both without control variables and with control variables, it was found that there exists a significant relationship between them. Lagged values of ROA and Capital are significant determinants of ROA. Credit risk was also found to be a significant determinant of ROA.

This implies that capital adequacy is a determinant of earnings in commercial banks when measured in terms of Return on Assets and not on Return on Equity. Equity holders of commercial banks need not have too much concern on capital adequacy being an important factor in the determination of their earnings.

CHAPTER FIVE

5. Summary, Conclusions and Recommendations

5.1.Introduction

This chapter presents a summary of the key findings of the study as well as the conclusions, limitations of the study, and recommendations for further research.

5.2.Summary

The secondary data used in this analysis covered a period of 6 years from 2004 to 2009. The banks that were sampled were 39 out of the 44 banks as they provided complete data over the study period.

The research involved the use of regression analysis with lag variables. The research was done in two levels, regression without control variables and with the control variables.

The t-statistic values and the R^2 were used to determine the magnitude of the relationship between the dependent variables ROE, ROA and the independent variable CAR.

The study concluded that lagged values of ROE and Capital had no significant relationship with ROE. Even when control variables were included the insignificance of the relationship remained.

While there was found to be a significant relationship between lagged values of ROA and capital on the ROA, the significance level remained as control variables were included in the regression.

5.3. Conclusions

In Kenya, capital adequacy is one of several determinants to earnings. The interesting finding is that there was no significant relationship found between capital and ROE while a significant negative relationship exists between capital and ROA. It can also be noted that capital is not the most significant determinant of ROA over the study period, credit risk was found to be the most significant determinant.

5.4. Limitations of the Study

The study period was based on 6 years, it would have been better if the period was longer so as to capture the effect of the lagged variables over a longer period of time.

The study should have captured the effects of the macro-economic environment such as inflation and GDP as these do affect bank earnings.

5.5. Suggestions for Further Research

A similar study could be carried out over a longer period of time such as ten years so as to obtain more reliable findings.

Focus on the other determinants of earnings among commercial banks can be a basis for further research.

References

- Al-Hashimi, A. (2007). *The determinants of commercial bank profitability in sub-Sahara Africa*, Unpublished Working Paper, draft.
- Athanasoglou, P., Delis M. and C. Staikouras, (2005). *Determinants of Banking Profitability in the South Eastern European Region*. Bank of Greece Working Paper, No.06/47.
- Berger, A.N (2006). *Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry*. Journal of Banking & Finance (Vol. 30, Issue 4, April 2006, pp 1065-1102).
- Berger, A.N. (1995). *The Profit-Structure Relationship In Banking – Tests Of the Market-Power and Efficient-Structure Hypothesis*. Journal of Money, Credit and Banking (Vol. 19, pp. 404-431).
- Berger, A.N. (1995). *The Relationship between Capital and Earnings in Banking*. Journal of Money Credit and Banking (Vol. 27, pp 432-456).
- Berger, A.N., R.J. Herring and G.P. Szego (1995). *The Role of Capital in Financial Institutions*. Journal of Banking and Finance (Vol. 19, pp. 393-430).
- Bourke, P. (1989). *Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia*. Journal of Banking and Finance (Vol. 13, pp. 65-79).
- Boyd, J., and D. Runkle (1993). *Size and Performance of Banking Firms: Testing the Prediction of the Theory*. Journal of Monetary Economics (Vol. 31, pp. 47- 67).
- Central Bank of Kenya (2009). *Bank Supervision Annual Report*.

Central Bank of Kenya (2008). *Basel II Implementation Survey Results*.

Central Bank of Kenya. *Prudential Guidelines for Banks Licensed under the Banking Act*.

Demirgüç-Kunt, A. and A. Huizinga (1998). *Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence*, World Bank Economic Review (Vol. 13, pp. 379-408).

Diamond, D. M., (1984). *Financial Intermediation and delegated monitoring*. Review of Economic Studies, (Vol. 51 (July), pp. 393-414).

Financial Sector Deepening (FSD), (2009). *Kenya Annual Report*.

Flamini, Valentina, Calvin McDonald, and Liliana Schumacher (2009). *The Determinants of Commercial Bank Profitability in Sub-Saharan Africa*. IMF Working Paper (Vol. 09/15).

Guru, B., J. Staunton and B. Balashanmugam (2002). *Determinants of Commercial Bank Profitability in Malaysia*. University Multimedia, Working Paper.

Hanweck, Gerald A. & Kilcollin, Thomas Eric (1984). *Bank profitability and interest rate risk*, Journal of Economics and Business (Vol. 36, pp. 77-84).

Hoggarth, G, A. Milne and G. Wood (1998). *Alternative Routes to Banking Stability: A Comparison of UK and German Banking Systems*. Bank of England Bulletin (pp. 58 -66).

- Hughes, P. Joseph, P. William W. Lang, Choon-Geol Moon and Michael S. Pagano (1998). *Measuring the efficiency of capital allocation in commercial banking*. World Bank Working paper.
- Hutchinson, E. David and Cox A.K. Raymond (2006). *The Causal Relationship between Bank Capital and Profitability*. Westwood Development Group and University of Ontario Institute of Technology, Working paper.
- Jensen, M.C., and W.H. Meckling (1976). *Theory of the firm: managerial behavior, agency costs and ownership structure*, Journal of Financial Economics (Vol. 3, pp. 305-360).
- Jiang, G., Tang, N., Law, E. and Size, A. (2003). *Determinants of Bank Profitability in Hong Kong*. Hong Kong Monetary Authority Research Memorandum.
- Kyalo J. M (2002). *Capital allocation and efficiency of Banking Institutions in Kenya. The case of quoted banks at NSE*. Unpublished MBA Research project, University of Nairobi.
- Miller, S.M. and A.G. Noulas (1997). *Portfolio Mix and Large-bank Profitability in the USA*. Applied Economics (Vol. 29 (4), pp. 505-512).
- Moulyneux, P. and J. Thornton (1992). *Determinants of European Bank Profitability: A Note*. Journal of Banking and Finance (Vol. 16, pp.1173-1178).
- Munene K. Habid (2006). *The Impact of Profitability on Capital Structure of Companies Listed At the NSE*. Unpublished MBA Research project, University of Nairobi.
- Naceur S.B. and Goaid, M. (2001). *The Determinants of the Tunisian Deposit Banks Performance*. Applied Financial Economics (Vol. 11, pp. 317-319).

Nyaboga Esther (2008). *The Relationship between Capital Structure and Agency Cost*.

Unpublished MBA Research project, University of Nairobi.

Ochieng Oloo et al (2010). *The Banking Survey*. A Think Business Publication.

Perry, P. (1992). *Do Banks Gain or Lose from Inflation?* Journal of Retail Banking, (Vol. 14, No. 2, pp. 25-30).

Sinkey, Joseph F. (1992). *Commercial bank financial management in the financial-services industry*. N.Y.: Macmillan Publishing Company.

Staikouras, C. and G. Wood, (2003). *The determinants of bank profitability in Europe*.

Paper presented at the European Applied Business Research Conference.

The Kenya Vision 2030 Blue Print (2007).

Wandeto, Patrick (2005). *An Empirical Investigation of the Relationship between Dividend Changes and Earnings, Cash Flows and Capital Structure for firms listed In the NSE*. Unpublished MBA Research project, University of Nairobi.

Appendices

Table 1: Banks' Ratios For 2004

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
1	ABC Bank	0.125	0.236	0.028	0.596	0.007	62.860	1.862	0.008
2	Bank of Africa	0.138	0.214	0.028	0.957	0.010	126.380	1.609	0.009
3	Bank of Baroda	0.116	0.283	0.033	0.376	0.009	49.470	5.632	0.015
4	Bank of India	0.108	0.128	0.020	0.318	0.005	57.430	3.569	0.011
5	Barclays Bank of Kenya	0.095	0.455	0.051	0.784	0.216	46.050	1.216	0.204
6	CfC Stanbic Bank	0.153	0.088	0.013	0.865	0.024	82.330	1.161	0.021
7	Chase Bank	0.253	-0.175	-0.044	1.041	0.004	66.770	2.182	0.004
8	Citibank	0.134	0.101	0.014	0.492	0.033	74.920	0.867	0.046
9	City Finance Bank	0.768	0.026	0.020	4.162	0.001	72.080	2.733	0.001
10	Commercial Bank of Africa	0.088	0.223	0.022	0.301	0.018	66.160	1.226	0.037
11	Consolidated Bank	0.177	-0.159	-0.033	0.567	0.004	125.870	0.891	0.005
12	Cooperative Bank	0.112	0.105	0.008	0.768	0.093	70.480	1.080	0.086
13	Credit Bank	0.155	0.112	0.017	0.634	0.005	70.670	2.872	0.005
14	Development Bank of Kenya	0.421	0.100	0.044	1.491	0.002	54.990	2.574	0.004
15	Diamond Trust Bank	0.104	0.183	0.024	0.808	0.024	64.330	1.766	0.021
16	Dubai Bank	0.405	0.083	0.034	1.153	0.002	59.340	3.000	0.002
17	Ecobank	0.148	-0.103	-0.015	0.754	0.008	65.910	1.436	0.008
18	Equatorial Commercial Bank	0.177	0.203	0.036	0.809	0.006	54.130	2.065	0.005

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
19	Equity Bank	0.191	0.172	0.033	0.566	0.010	62.430	0.619	0.012
20	Fidelity Commercial Bank	0.167	0.004	0.001	0.842	0.004	71.290	1.643	0.003
21	Fina Bank	0.074	-0.059	-0.006	0.494	0.012	65.840	3.968	0.016
22	Giro Commercial Bank	0.090	0.032	0.003	0.724	0.010	70.810	1.760	0.009
23	Guardian Bank	0.174	0.074	0.013	0.905	0.010	61.910	3.550	0.008
24	Habib A.G Zurich	0.100	0.125	0.013	0.274	0.004	73.830	2.133	0.008
25	Habib Bank	0.122	0.223	0.027	0.315	0.003	61.940	2.931	0.006
26	I&M Bank	0.115	0.201	0.025	0.705	0.028	50.000	2.637	0.028
27	Imperial Bank	0.157	0.289	0.046	0.879	0.013	48.200	2.158	0.011
28	Kenya Commercial Bank	0.116	0.125	0.015	0.648	0.124	77.600	0.908	0.129
29	K-Rep Bank	0.279	0.144	0.041	1.492	0.007	70.350	4.099	0.005
30	Middle East Bank	0.181	0.049	0.009	0.534	0.006	77.140	2.030	0.007
31	National Bank of Kenya	0.072	0.283	0.024	0.940	0.077	44.440	1.938	0.057
32	NIC Bank	0.154	0.141	0.022	0.923	0.040	65.940	2.952	0.031
33	Oriental Commercial Bank	0.236	-0.951	-0.226	0.853	0.002	279.690	-0.024	0.003
34	Paramount Universal Bank	0.213	0.041	0.009	0.749	0.003	79.630	4.333	0.002
35	Prime Bank	0.117	0.154	0.018	0.560	0.009	61.000	1.783	0.011
36	Southern Credit Bank	0.130	0.126	0.016	0.617	0.007	66.170	3.080	0.007
37	Standard Chartered Bank	0.079	0.444	0.040	0.469	0.091	53.940	1.359	0.124
38	Trans- National Bank	0.434	0.198	0.084	0.732	0.003	93.840	1.544	0.004
39	Victoria Commercial Bank	0.140	0.089	0.012	0.614	0.006	56.070	1.286	0.007

Table 2: Banks' Ratios For 2005

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
1	ABC Bank	0.113	0.229	0.024	0.609	0.007	65.750	1.912	0.008
2	Bank of Africa	0.128	0.010	0.001	0.728	0.008	97.410	1.603	0.009
3	Bank of Baroda	0.115	0.223	0.026	0.441	0.009	56.110	7.209	0.015
4	Bank of India	0.117	0.145	0.017	0.410	0.006	58.610	2.409	0.012
5	Barclays Bank of Kenya	0.109	0.410	0.052	0.801	0.175	52.680	1.433	0.172
6	CfC Stanbic Bank	0.140	0.219	0.030	0.707	0.023	65.720	1.804	0.025
7	Chase Bank	0.214	0.113	0.025	1.017	0.005	62.510	3.094	0.004
8	Citibank	0.171	0.240	0.042	0.468	0.028	45.740	1.270	0.051
9	City Finance Bank	0.726	-0.127	-0.092	2.968	0.001	89.160	4.091	0.001
10	Commercial Bank of Africa	0.075	0.161	0.012	0.459	0.031	65.430	1.497	0.049
11	Consolidated Bank	0.188	-0.017	-0.004	0.661	0.003	105.630	0.991	0.005
12	Cooperative Bank	0.108	0.176	0.014	0.671	0.078	64.570	1.073	0.085
13	Credit Bank	0.166	0.194	0.032	0.836	0.005	59.700	3.820	0.005
14	Development Bank of Kenya	0.361	0.156	0.061	1.492	0.003	8.920	4.789	0.004
15	Diamond Trust Bank	0.104	0.258	0.026	0.777	0.028	57.310	1.668	0.027
16	Dubai Bank	0.335	0.075	0.025	1.104	0.002	60.730	2.150	0.002
17	Ecobank	0.122	0.010	0.001	0.578	0.010	85.230	1.308	0.015
18	Equatorial Commercial Bank	0.151	0.188	0.030	0.614	0.005	55.200	3.404	0.006
19	Equity Bank	0.123	0.314	0.044	0.628	0.015	68.910	0.924	0.019
20	Fidelity Commercial Bank	0.161	0.048	0.008	0.762	0.003	87.540	1.418	0.003

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Asset Mix	Size
21	Fina Bank	0.079	0.111	0.012	0.573	0.010	81.550	2.101	0.014
22	Giro Commercial Bank	0.091	-0.013	-0.001	0.763	0.009	80.940	1.850	0.008
23	Guardian Bank	0.170	0.074	0.013	0.853	0.008	60.230	0.075	0.007
24	Habib A.G Zurich	0.114	0.271	0.031	0.279	0.003	55.450	3.541	0.008
25	Habib Bank	0.148	0.049	0.007	0.305	0.002	78.750	3.283	0.005
26	I&M Bank	0.105	0.238	0.027	0.749	0.030	49.690	2.517	0.030
27	Imperial Bank	0.138	0.272	0.039	0.749	0.011	66.830	1.711	0.013
28	Kenya Commercial Bank	0.125	0.193	0.025	0.565	0.097	73.460	1.207	0.129
29	K-Rep Bank	0.212	0.066	0.014	1.252	0.007	86.990	3.414	0.006
30	Middle East Bank	0.196	0.145	0.028	0.518	0.004	53.350	2.460	0.007
31	National Bank of Kenya	0.088	0.267	0.026	0.956	0.065	44.110	2.483	0.054
32	NIC Bank	0.117	0.144	0.019	0.860	0.038	60.340	3.134	0.034
33	Oriental Commercial Bank	0.531	-0.119	-0.063	0.574	0.001	95.450	0.163	0.002
34	Paramount Universal Bank	0.205	0.049	0.010	0.771	0.002	74.580	4.591	0.002
35	Prime Bank	0.101	0.173	0.017	0.586	0.009	61.960	1.947	0.012
36	Southern Credit Bank	0.121	0.060	0.007	0.541	0.005	72.300	2.085	0.007
37	Standard Chartered Bank	0.116	0.366	0.048	0.570	0.091	45.530	1.557	0.120
38	Trans- National Bank	0.515	0.056	0.029	1.352	0.003	70.800	2.020	0.003
39	Victoria Commercial Bank	0.133	0.221	0.029	0.533	0.005	51.060	2.089	0.007

Table 3: Banks' Ratios For 2006

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
1	ABC Bank	0.126	0.207	0.026	0.696	0.007	69.960	2.188	0.007
2	Bank of Africa	0.121	0.062	0.009	0.765	0.009	94.240	1.938	0.009
3	Bank of Baroda	0.107	0.295	0.032	0.432	0.010	47.250	6.656	0.016
4	Bank of India	0.108	0.272	0.032	0.452	0.008	38.520	4.152	0.012
5	Barclays Bank of Kenya	0.105	0.436	0.055	0.788	0.172	51.360	1.444	0.163
6	CfC Stanbic Bank	0.107	0.336	0.036	0.574	0.026	51.200	1.643	0.036
7	Chase Bank	0.151	0.175	0.027	0.623	0.005	62.670	2.165	0.006
8	Citibank	0.153	0.245	0.040	0.487	0.029	44.200	1.366	0.052
9	City Finance Bank	0.672	(0.048)	(0.032)	1.825	0.001	112.910	1.375	0.001
10	Commercial Bank of Africa	0.083	0.361	0.036	0.437	0.033	54.320	1.598	0.052
11	Consolidated Bank	0.168	0.022	0.005	0.667	0.004	86.130	1.088	0.005
12	Cooperative Bank	0.082	0.241	0.022	0.590	0.066	61.250	0.933	0.081
13	Credit Bank	0.180	0.176	0.034	0.726	0.003	65.580	2.902	0.004
14	Development Bank of Kenya	0.316	0.119	0.039	1.197	0.004	57.290	3.768	0.005
15	Diamond Trust Bank	0.139	0.237	0.031	0.827	0.032	50.990	2.075	0.030
16	Dubai Bank	0.318	0.050	0.016	0.926	0.002	56.630	1.353	0.002
17	Ecobank	0.149	0.030	0.005	0.636	0.010	64.720	0.778	0.012
18	Equatorial Commercial Bank	0.156	0.152	0.024	0.735	0.006	55.800	2.675	0.006
19	Equity Bank	0.110	0.501	0.055	0.669	0.025	63.340	0.809	0.028
20	Fidelity Commercial Bank	0.118	0.092	0.011	0.723	0.003	81.260	1.116	0.003
21	Fina Bank	0.083	0.128	0.015	0.607	0.011	75.050	2.272	0.014
22	Giro Commercial	0.094	0.119	0.012	0.672	0.007	68.340	2.442	0.007

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
	Bank								
23	Guardian Bank	0.160	0.061	0.010	0.741	0.007	57.440	2.779	0.007
24	Habib A.G Zurich	0.122	0.254	0.031	0.299	0.003	53.710	3.429	0.007
25	Habib Bank	0.151	0.013	0.002	0.325	0.002	88.850	3.271	0.004
26	I&M Bank	0.109	0.335	0.042	0.807	0.034	41.230	2.571	0.031
27	Imperial Bank	0.132	0.268	0.041	0.766	0.013	58.460	2.150	0.013
28	Kenya Commercial Bank	0.099	0.273	0.034	0.586	0.105	64.640	1.089	0.128
29	K-Rep Bank	0.170	0.169	0.029	1.135	0.009	77.780	2.312	0.007
30	Middle East Bank	0.241	0.119	0.029	0.848	0.005	65.110	1.989	0.005
31	National Bank of Kenya	0.097	0.243	0.026	0.897	0.062	39.400	2.776	0.050
32	NIC Bank	0.110	0.223	0.026	0.754	0.039	59.120	2.756	0.036
33	Oriental Commercial Bank	0.464	(0.097)	(0.045)	0.565	0.001	129.820	0.653	0.002
34	Paramount Universal Bank	0.189	0.073	0.014	0.531	0.002	58.020	0.860	0.003
35	Prime Bank	0.077	0.145	0.018	0.589	0.011	58.200	2.085	0.015
36	Southern Credit Bank	0.120	0.058	0.007	0.613	0.005	79.730	2.031	0.006
37	Standard Chartered Bank	0.106	0.376	0.047	0.551	0.083	45.520	1.733	0.112
38	Trans- National Bank	0.437	0.041	0.018	1.032	0.003	68.990	1.369	0.004
39	Victoria Commercial Bank	0.136	0.220	0.030	0.593	0.005	55.180	2.243	0.006

Table 4: Banks' Ratios For 2007

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
1	ABC Bank	0.132	0.228	0.030	0.657	0.007	62.650	1.737	0.007
2	Bank of Africa	0.111	0.125	0.021	0.829	0.009	76.450	1.583	0.008
3	Bank of Baroda	0.100	0.331	0.036	0.549	0.014	39.900	4.604	0.016
4	Bank of India	0.113	0.361	0.046	0.414	0.007	29.460	4.730	0.011
5	Barclays Bank of Kenya	0.116	0.403	0.045	0.966	0.210	58.830	1.564	0.169
6	CfC Stanbic Bank	0.096	0.355	0.035	0.867	0.039	50.220	1.897	0.037
7	Chase Bank	0.123	0.251	0.031	0.760	0.006	56.050	1.576	0.006
8	Citibank	0.154	0.243	0.038	0.426	0.025	41.550	1.460	0.051
9	City Finance Bank	0.438	-0.086	-0.038	0.671	0.000	95.930	2.154	0.001
10	Commercial Bank of Africa	0.086	0.300	0.034	0.493	0.034	52.150	1.519	0.045
11	Consolidated Bank	0.148	0.035	0.006	0.787	0.004	79.840	1.043	0.004
12	Cooperative Bank	0.091	0.305	0.032	0.702	0.077	65.300	1.350	0.070
13	Credit Bank	0.161	0.233	0.039	0.614	0.003	52.440	3.333	0.004
14	Development Bank of Kenya	0.237	0.136	0.033	1.558	0.005	51.150	3.075	0.005
15	Diamond Trust Bank	0.119	0.193	0.029	0.797	0.046	51.340	2.693	0.039
16	Dubai Bank	0.264	0.035	0.009	0.748	0.001	52.180	1.106	0.002
17	Ecobank	0.133	0.067	0.012	0.657	0.010	59.030	0.639	0.010
18	Equatorial Commercial Bank	0.137	0.109	0.015	0.560	0.005	75.430	3.403	0.005
19	Equity Bank	0.332	0.158	0.044	0.692	0.044	59.840	0.901	0.057
20	Fidelity Commercial Bank	0.097	0.157	0.015	0.734	0.004	72.370	1.659	0.003
21	Fina Bank	0.077	0.099	0.013	0.693	0.013	74.340	1.909	0.012
22	Giro Commercial	0.093	0.078	0.007	0.625	0.006	58.590	2.119	0.006

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
	Bank								
23	Guardian Bank	0.145	0.031	0.005	0.724	0.007	63.170	2.538	0.006
24	Habib A.G Zurich	0.119	0.275	0.033	0.329	0.003	50.740	3.479	0.007
25	Habib Bank	0.136	0.205	0.028	0.342	0.002	58.900	3.724	0.004
26	I&M Bank	0.129	0.335	0.044	0.813	0.038	39.770	2.637	0.031
27	Imperial Bank	0.131	0.357	0.048	0.815	0.014	57.780	1.871	0.013
28	Kenya Commercial Bank	0.083	0.320	0.035	0.681	0.128	63.460	1.327	0.129
29	K-Rep Bank	0.145	0.187	0.027	1.140	0.010	76.860	2.353	0.008
30	Middle East Bank	0.277	0.107	0.030	0.991	0.004	67.510	2.247	0.003
31	National Bank of Kenya	0.111	0.324	0.039	0.226	0.016	52.900	1.655	0.044
32	NIC Bank	0.137	0.222	0.034	0.895	0.044	51.970	2.175	0.034
33	Oriental Commercial Bank	0.474	0.216	0.104	0.761	0.001	29.580	0.133	0.002
34	Paramount Universal Bank	0.190	0.094	0.018	0.561	0.002	64.340	1.320	0.003
35	Prime Bank	0.071	0.165	0.023	0.608	0.013	51.900	2.313	0.015
36	Southern Credit Bank	0.102	-0.026	-0.003	0.646	0.005	79.760	1.802	0.006
37	Standard Chartered Bank	0.101	0.450	0.054	0.535	0.079	46.210	1.399	0.098
38	Trans- National Bank	0.336	0.073	0.025	0.671	0.002	72.210	1.829	0.003
39	Victoria Commercial Bank	0.159	0.230	0.037	0.696	0.005	49.250	2.217	0.004

Table 5: Banks' Ratios For 2008

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
1	ABC Bank	0.143	0.202	0.033	0.665	0.005	63.580	1.664	0.006
2	Bank of Africa	0.087	0.056	0.008	0.788	0.011	84.070	1.199	0.010
3	Bank of Baroda	0.098	0.331	0.034	0.589	0.014	35.630	6.861	0.015
4	Bank of India	0.140	0.360	0.051	0.436	0.007	24.950	3.440	0.010
5	Barclays Bank of Kenya	0.148	0.388	0.048	0.855	0.166	60.650	1.457	0.139
6	CfC Stanbic Bank	0.092	0.184	0.016	0.718	0.068	58.530	1.830	0.069
7	Chase Bank	0.083	0.292	0.024	0.719	0.008	62.910	2.237	0.008
8	Citibank	0.192	0.365	0.071	0.582	0.028	28.510	1.090	0.039
9	City Finance Bank	0.600	-0.009	-0.006	1.177	0.000	56.920	0.610	0.000
10	Commercial Bank of Africa	0.081	0.341	0.032	0.638	0.044	51.450	1.351	0.045
11	Consolidated Bank	0.156	0.100	0.018	0.839	0.004	78.780	1.105	0.004
12	Cooperative Bank	0.160	0.240	0.040	0.809	0.082	61.020	1.441	0.069
13	Credit Bank	0.183	0.119	0.022	0.652	0.003	63.440	2.228	0.003
14	Development Bank of Kenya	0.189	0.137	0.026	1.563	0.005	51.350	2.771	0.005
15	Diamond Trust Bank	0.100	0.228	0.029	0.757	0.052	50.380	1.973	0.046
16	Dubai Bank	0.251	0.017	0.004	0.927	0.001	57.260	1.902	0.001
17	Ecobank	0.106	0.038	0.006	0.615	0.008	84.650	0.723	0.009
18	Equatorial Commercial Bank	0.153	-0.015	-0.002	0.629	0.004	73.020	3.418	0.004
19	Equity Bank	0.253	0.255	0.063	0.878	0.068	52.340	1.105	0.065
20	Fidelity Commercial Bank	0.098	0.172	0.017	0.738	0.004	71.900	1.066	0.004

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
21	Fina Bank	0.068	0.078	0.010	0.790	0.014	76.290	2.341	0.012
22	Giro Commercial Bank	0.102	0.207	0.021	0.665	0.005	65.960	3.238	0.005
23	Guardian Bank	0.150	0.053	0.008	0.775	0.005	49.590	2.459	0.005
24	Habib A.G Zurich	0.115	0.313	0.037	0.406	0.003	49.350	3.670	0.005
25	Habib Bank	0.138	0.235	0.033	0.327	0.002	50.020	4.250	0.004
26	I&M Bank	0.124	0.312	0.044	0.913	0.040	38.480	2.460	0.030
27	Imperial Bank	0.136	0.352	0.050	0.795	0.013	55.920	2.296	0.011
28	Kenya Commercial Bank	0.085	0.285	0.031	0.738	0.144	55.760	1.158	0.157
29	K-Rep Bank	0.138	-0.418	-0.058	1.318	0.009	111.470	2.198	0.007
30	Middle East Bank	0.263	0.034	0.009	0.817	0.003	72.650	1.577	0.003
31	National Bank of Kenya	0.137	0.289	0.042	0.261	0.014	57.370	1.409	0.035
32	NIC Bank	0.127	0.267	0.035	0.850	0.046	47.400	1.713	0.035
33	Oriental Commercial Bank	0.353	0.072	0.030	0.729	0.001	60.120	0.590	0.002
34	Paramount Universal Bank	0.186	0.104	0.019	0.601	0.002	64.330	2.115	0.002
35	Prime Bank	0.085	0.150	0.023	0.602	0.014	50.410	2.638	0.016
36	Southern Credit Bank	0.093	0.012	0.001	0.647	0.004	87.910	1.563	0.004
37	Standard Chartered Bank	0.097	0.410	0.048	0.563	0.067	49.380	1.508	0.082
38	Trans- National Bank	0.362	0.098	0.035	0.762	0.002	66.390	1.825	0.003
39	Victoria Commercial Bank	0.174	0.223	0.038	0.776	0.004	45.700	2.949	0.004

Table 6: Banks' Ratios For 2009

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
1	ABC Bank	0.166	0.078	0.029	0.556	0.005	61.240	2.051	0.006
2	Bank of Africa	0.106	0.108	0.016	0.735	0.012	71.660	1.163	0.012
3	Bank of Baroda	0.099	0.348	0.041	0.487	0.012	40.080	6.723	0.016
4	Bank of India	0.134	0.294	0.040	0.418	0.007	25.920	4.477	0.011
5	Barclays Bank of Kenya	0.168	0.372	0.055	0.743	0.125	59.330	1.712	0.118
6	CfC Stanbic Bank	0.108	0.164	0.014	0.806	0.060	69.710	1.478	0.070
7	Chase Bank	0.096	0.260	0.025	0.667	0.009	68.790	1.727	0.009
8	Citibank	0.214	0.276	0.059	0.644	0.029	31.860	1.303	0.037
9	City Finance Bank	0.642	-0.022	-0.014	1.187	0.000	80.230	1.125	0.000
10	Commercial Bank of Africa	0.073	0.281	0.029	0.681	0.045	54.650	1.418	0.047
11	Consolidated Bank	0.118	0.132	0.018	0.792	0.005	75.860	1.307	0.005
12	Cooperative Bank	0.138	0.229	0.034	0.680	0.083	62.800	1.370	0.079
13	Credit Bank	0.192	0.114	0.023	0.673	0.003	64.080	3.024	0.003
14	Development Bank of Kenya	0.293	0.078	0.013	2.005	0.006	77.990	3.187	0.006
15	Diamond Trust Bank	0.098	0.249	0.030	0.803	0.057	54.480	2.271	0.048
16	Dubai Bank	0.290	0.019	0.006	1.160	0.002	63.270	0.903	0.001
17	Ecobank	0.109	-0.536	-0.083	0.596	0.009	141.890	0.623	0.010
18	Equatorial Commercial Bank	0.164	0.102	0.017	0.781	0.004	76.500	4.400	0.003

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
19	Equity Bank	0.223	0.228	0.052	0.908	0.084	60.160	1.413	0.072
20	Fidelity Commercial Bank	0.089	0.106	0.009	0.674	0.004	79.640	1.094	0.004
21	Fina Bank	0.054	0.086	0.009	0.630	0.012	78.130	1.934	0.013
22	Giro Commercial Bank	0.124	0.216	0.027	0.620	0.005	61.900	2.277	0.005
23	Guardian Bank	0.129	0.131	0.017	0.716	0.005	45.950	3.688	0.005
24	Habib A.G Zurich	0.244	0.299	0.039	0.372	0.003	46.040	3.525	0.005
25	Habib Bank	0.160	0.264	0.042	0.356	0.002	45.600	4.902	0.003
26	I&M Bank	0.148	0.236	0.040	0.707	0.033	42.090	2.632	0.031
27	Imperial Bank	0.141	0.357	0.052	0.789	0.013	54.420	2.464	0.011
28	Kenya Commercial Bank	0.091	0.276	0.032	0.575	0.125	66.860	1.557	0.140
29	K-Rep Bank	0.153	-0.261	-0.040	1.086	0.006	101.680	2.590	0.005
30	Middle East Bank	0.282	0.049	0.014	0.855	0.002	76.980	1.886	0.002
31	National Bank of Kenya	0.144	0.273	0.042	0.313	0.018	59.860	1.385	0.037
32	NIC Bank	0.120	0.225	0.032	0.823	0.043	46.840	1.651	0.034
33	Oriental Commercial Bank	0.279	0.034	0.011	0.755	0.002	76.850	0.939	0.002
34	Paramount Universal Bank	0.170	0.080	0.014	0.532	0.002	75.880	2.632	0.002
35	Prime Bank	0.078	0.184	0.024	0.553	0.014	51.520	2.269	0.017
36	Southern Credit	-0.021	146.000	-0.163	0.453	0.003	128.520	0.580	0.003

	Banks	CAR	ROE	ROA	Credit Risk	Market Power	Cost/Income ratio	Activity Mix	Size
	Bank								
37	Standard Chartered Bank	0.088	0.483	0.054	0.653	0.076	41.480	1.639	0.089
38	Trans- National Bank	0.394	0.081	0.032	0.910	0.002	70.930	2.227	0.002
39	Victoria Commercial Bank	0.180	0.231	0.042	0.779	0.004	43.930	3.607	0.004