

**THE RELATIONSHIP BETWEEN ASSET QUALITY AND PROFITABILITY OF  
COMMERCIAL BANKS IN KENYA**

**BY**

**MWENDWA CORNELIUS MWONGELA**

**A RESEARCH PROPOSAL SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS  
ADMINISTRATION DEGREE, UNIVERSITY OF NAIROBI**

**AUGUST, 2015**

## DECLARATION

This research project is my original work and has not been presented for the award of a degree in any other university or any other higher learning institution for examination purpose.

Sign----- Date-----

Mwendwa Cornelius Mwangela

D61/70622/2008

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

Sign----- Date-----

Dr. Sifunjo E. Kisaka

Lecturer, Department of Business Administration,  
School of Business, University of Nairobi.

## **DEDICATION**

This research work is dedicated to my wife Perpetua and children, Mouleen Mwangela and John Mwangela. It is through your support, prayers and selflessness that made my studies possible. I will forever remain indebted to you.

## **ACKNOWLEDGEMENT**

The success of this study is not entirely my own. I would therefore wish to acknowledge the contributions of the following people who made my study possible. To them I express my deepest gratitude.

To all my colleagues in the MBA class and the University of Nairobi management who played a critical role in providing useful information and learning materials. To the corporate management team, principals of colleges, deans of schools and departmental heads I say much thanks. To my family I say thanks for their moral support, inspirational, financial and encouragement during this academic journey.

To you all I owe you success. To those that I have not mentioned due to lack of space, I say thanks for your genuine support. Thanks for helping me realize my dreams. My greatest gratitude goes to the Almighty God who provided the wisdom and direction in this journey. To Him I say glory and honour unto you forever more.

## TABLE OF CONTENTS

<b>DECLARATION</b> .....	<b>ii</b>
<b>DEDICATION</b> .....	<b>iii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iv</b>
<b>ABSTRACT</b> .....	<b>1</b>
<b>CHAPTER ONE</b> .....	<b>2</b>
<b>INTRODUCTION</b> .....	<b>2</b>
1.1 Background of the Study .....	2
1.1.1 Asset Quality in the Kenyan Banking Industry .....	5
1.1.2 Profitability in the Kenyan Banking Industry .....	8
1.1.3 Asset Quality and Profitability.....	9
1.1.4 Commercial Banks in Kenya .....	10
1.2 The Research Problem .....	11
1.3 Objective of the Study .....	15
1.4 Importance of the Study.....	15
<b>CHAPTER TWO</b> .....	<b>16</b>
<b>LITERATURE REVIEW</b> .....	<b>16</b>
<b>2.1 Introduction</b> .....	<b>16</b>
2.3 Endogenous Determinants of Bank Asset Quality.....	20
2.4 Determinants of Commercial Banks Profitability.....	21
2.5 Summary .....	24
<b>CHAPTER THREE</b> .....	<b>26</b>
<b>RESEARCH METHODOLOGY</b> .....	<b>26</b>
3.1 Introduction.....	26
3.2 Research Design.....	26
3.3 Target Population.....	26
3.4 Data and Data Collection Instrument.....	27
3.5 Data Analysis .....	27
3.5.1 The Conceptual Models .....	27
3.5.2 The Analytical Models.....	33

<b>CHAPTER FOUR.....</b>	<b>34</b>
<b>DATA ANALYSIS, RESULTS AND DISCUSSION.....</b>	<b>34</b>
4.1 Introduction.....	34
4.2 Summary Statistics.....	34
4.3 Bank Asset Quality and Bank Performance.....	34
4.3.1 Correlation among the Variables .....	35
4.3.2 Results of the Model Goodness of Fit Test.....	36
4.3.3 Results of ANOVA .....	36
4.3.3 Asset Quality and Bank Profitability in Kenya.....	37
4.4 Discussion .....	38
4.5 Summary .....	40
<b>CHAPTER FIVE .....</b>	<b>41</b>
<b>SUMMARY AND CONCLUSION .....</b>	<b>41</b>
5.1 Introduction.....	41
5.3 Conclusions.....	42
5.4 Limitations of the Study.....	42
5.5 Recommendation for Further Research .....	43
<b>REFERENCES.....</b>	<b>44</b>
<b>Appendix I .....</b>	<b>53</b>

## **LIST OF ABBREVIATIONS**

NPA – Non-Performing Assets

PSB – Public Sector Banks

GDP – Gross Domestic Product

NPL – Non-Performing loans

CBK - Central Bank of Kenya

SOE – State Owned Enterprises

CAR – Capital Assets Ratio

IMF - International Monterey Fund

ROA – Return on Assets

LLP – Loans Loss Provisions

ATM – Automated Teller Machines

MSG – Money Supply Growth

MKTCAP – Market Capitalization

NP – Net Profit

NII – Non-Interest Income

NIE – Non-Interest Expenses

## **ABSTRACT**

The objective of this study was to examine the relationship between asset quality and financial performance of commercial banks in Kenya. The study employed a descriptive research design. The data were obtained from secondary sources like company reports and the NSE handbooks. The study used descriptive statistics, correlation analysis and ANOVA to analyze the data. The regression model was employed to analyze the data.

The results show that only NIE, EQASS, INFL and MKTCAP are negatively related to ROA. However, the negative relationship is not statistically significant except for INFL. Moreover, only LLP, NII, and GMS are positively related to ROA. But only LLP is statistically significant at 5 percent confidence interval. All the variables in the empirical model had the theoretically expected relationships except for LLP that was positive and significant. Therefore, asset quality as measured by LLP positively influences ROA of commercial banks.



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Financial stability in an economy is largely dependent on the stability and the resilience of the banking system. To accomplish banking stability the banks are required to maintain quality bank assets that aid in achieving profitability. The failure to ensure banking stability can cause financial fragility and may lead to crisis scenarios in the event of market illiquidity and or bank contagion. The significance of banking stability can be better understood in the backdrop of the global financial crisis of 2008 that resulted in the collapse of financial markets and institutions. Moreover, output per capita is projected to slide down in countries representing three-quarters of the global economy. The consequent deterioration in the economic environment has led to a rise in the overall level of stress in the banking sectors. Commercial bank loan charge-offs in the US and Europe may exceed the levels reached during the 1991–1992 recession, even though they should remain below the levels experienced in the US during the Great Depression (Heffernan, 2005)

On a thorough analysis of the crisis, financial stability has once again emerged as an important area of concern in the financial systems across the globe. Financial stability is widely accepted as a situation in which financial system is capable of satisfactorily performing its three key functions simultaneously, viz; (1) efficient and smooth facilitation of the inter-temporal allocation of resources from the surplus economic units to the deficit economic units, (2) managing the forward looking financial risks with

appropriate pricing and (3) to be prepared all the time to absorb the financial and real economic surprises and shocks. Counterparty risk being an important risk in the financial system more particularly in the banking system, poses a bigger challenge in order to achieve financial stability. Counter-party risk is an outcome directly related to the Non-Performing Assets permanent phenomenon in the balance sheets of the financial institutions, if not contained properly, they eventually lead to crisis, which can pose big threats of contagion that can engulf the financial health of the system.

The issue of Non-Performing Assets (NPAs) has gained growing attention in the last few Decades in view of the established fact that the immediate consequence of bubbling up of NPAs in the banking system is bank failure. Many researches like; Demirguc-Kunt (1989) and Barr and Siems (1994) have established that asset quality is a statistically significant predictor of insolvency for the cause of bank failures and the failing banking institutions always have high level of non-performing loans prior to failure. Further, the problem of NPAs has become synonymous to functional efficiency of financial intermediaries and believed to be the major causes of the economic stagnation problems. As per the Global Financial Stability Report of International Monetary Fund, (IMF, 2009), identifying and dealing with distressed assets, and recapitalizing weak but viable institutions and resolving failed institutions are stated as the two of the three important priorities which directly relate to NPAs. It is obvious to note that better asset quality aids improvement in profitability. In order to improve profitability, it is imperative on the banks to manage their asset quality as well as determinants of profitability. The growing

incidence of poor bank asset quality calls for a renewed look at the factors that impact on the performance of the banks in terms of both profitability and asset management.

Only few studies of citable significance have dealt on the problems of NPAs particularly in the context of developing economies like Indian banking mainly because of the lack of sufficient published disaggregated information on the micro-management of NPAs and the nature and type of default. Though, Indian banking has not experienced notable banking crises when compared to the other countries in the world, the issues concerning NPAs have come up particularly in view of the comparatively high levels of NPAs of Indian commercial banks vis-à-vis the other countries. These kind of economies which have not suffered banking crises but still continue face the problem of mounting NPAs offer a sound logic to undertake an empirical examination conjoining the profitability analysis as well. This study sets out specific questions such as; (i) what are the significant determinants that influence the NPAs of commercial bank and to what extent? (ii) What factors affect bank profitability in a banking system that is quite different from that of the crises ridden advanced banking systems? (iii) What lessons (particularly in the domain of macro-economic management and prudential regulation) can be drawn from the dynamics in the banking systems like that of India particularly in the context of bank asset quality and profitability. In view of this, it is essential to identify and understand the determinants (both macro-economic and industry specific) of NPAs. Further, this study is aimed at a comprehensive empirical analysis of the determinants of bank asset quality and profitability in the context of Indian banking and contributes to the growing literature

on bank asset quality management and profitability and to suggest some measures to counter the rising NPAs.

The critical role of financial and banking development in economic growth in any economy has been established by many researchers (Levine, 2004 and Singh, 2005). In the process of providing credit assistance to the investment activities and projects in the economy, the financial institutions face inherent risks in the form of default risk that results in the form of Non-Performing Assets that have a negative effect on the profitability of the financial institutions. Typically, a credit transaction involves a contract between two parties: the borrower and the creditor (bank) subject to a mutual agreement on the ‘terms of credit’.

Optimizing decision pertaining to the terms of credit could differ from the borrower to that of the creditor. As such, the mutual agreement between the borrower and the creditor may not necessarily imply an optimal configuration for both. The most important reason for ‘default’ could be mismatch between ‘borrower’s terms of credit’ and ‘creditor’s terms of credit’. However, a common perspective is that both the cases of ‘defaulter’ and ‘non-performer’ imply similar financial implications, i.e., financial loss to banks. Moreover, regulatory and supervisory process does not focus on such a distinction between defaulter and non-performer as far as prudential norms are concerned.

### **1.1.1 Asset Quality in the Kenyan Banking Industry**

Amount of credit as measured by loan and advances extended to customers and non performing loans are used as proxies for credit risk. Commercial banks in Kenya are

categorized in three tier groups on the basis of the value of bank assets. Tier group one are banks with an asset base of more than Ksh40 billion, tier group two are commercial banks with asset base between Ksh40 billion and Ksh10 billion while tier group three are banks with asset base of less than Ksh10 billion. According to the 2009 Banking Survey, there are eleven commercial banks in tier group one, eleven commercial banks in tier group two and twenty on commercial banks in tier group three comprising to a total of forty three commercial banks.

The average value of assets in tier one category averaged Ksh86.25582, tier group two averaged Ksh15.69236 billion while banks in tier group three averaged Ksh4.411667 billion in 2008 (Also see Appendix I). The average assets for all commercial banks was Ksh49.37933 in 2008, Ksh22.22574 billion in 2007, Ksh16.95755 billion in 2006, Ksh15.19133 billion in 2005 and Ksh13.5056 billion in 2004.

Credit extended by commercial banks averaged Ksh16.2087 in 2008, Ksh15.44379 in 2007, Ksh14.76513 in 2006, Ksh12.93275 in 2005 and Ksh10.5044 in 2004. Total loans and advances to total assets, which is a measure of level of credit averaged 64% for all commercial banks, 67.4% in 2007, 144.2% in 2006, 129.7% in 2005 and 115% in 2004. The observation is that the level of credit was high in the early years of the implementation of Basle II but decreased significantly in 2007 and 2008, probably when the Basle II was implemented by commercial banks. Notably Basle II came into being in 2004 but the impact of this Accord was not immediate explaining why there was a time lag in reduction of the amount of credit. When the amount of credit exceeds the level a

bank assets as in the case of 2004, 2005 and 2006, banks are exposed to more risk of the credit ending up being nonperforming.

The nonperforming loans as a proportion of total loans which is another proxy for credit risk averaged 5.08% in 2008, 13.5% in 2007, stood at 14.3% in 2006 and further averaged 16.07% in 2005 and 19.64% in 2004. Notably, the level of nonperforming loans given by nonperforming loans to total loans decreased during the period 2004 to 2008. The requirement by the Basle II might have enabled commercial banks to control their level of nonperforming loans thus reducing banks credit risk.

Although NPAs have been substantially reduced since regulation was tightened in 1993, especially in the Public Sector Banks (PSBs), the momentum has recently slowed down and the levels of NPAs remain high compared to international standards. He further argues that the problems of NPAs have a sizeable overhang component, arising from infirmities in the existing practices of debt recovery, inadequate legal provisions for foreclosure and bankruptcy and difficulties in the execution of court decrees. The problem is exacerbated by the regulatory provisions for loan classification vis-à-vis international best practices. Although public sector banks have recorded improvements in profitability, efficiency (in Terms of intermediation costs) and asset quality in the 1990s, they continue to have higher Interest rate spreads but at the same time earns lower rates of return, reflecting higher operating costs.

Bhattacharya (2001) rightly points to the fact that in an increasing rate regime, quality borrowers would switch over to other avenues such as capital markets, internal accruals for their requirement of funds. Under such circumstances, banks would have no option but to dilute the quality of borrowers thereby increasing the probability of generation of NPAs. There are many internal and external factors affecting NPAs in India. While the internal factors might be taking up new projects, promoting associate concerns, time to cost overruns during the project implementation stage, business failure, inefficient management, strained labor relations, inappropriate technology/technical problems, product obsolescence etc., the external factors include GDP growth, default in other countries, high inflation, accidents and natural calamities. Further, it is observed that while there is a positive correlation between the factors such as GDP growth induced the bank credit pro-cyclicality is observed in the case of comparison of Gross Domestic Product growth to NPA levels.

### **1.1.2 Profitability in the Kenyan Banking Industry**

Profitability of the 43 commercial banks that were in operations in 2008 averaged Ksh1027.628 billion, while of the 42 banks in 2007 averaged Ksh818.19 billion as the First Community Bank started its operations in 2008. The operations of the 40 commercial banks that were in operation in 2006, 2005 and 2004 resulted to average profits of Ksh644.3 billion, Ksh465.75 billion and Ksh351.15 billion respectively. Net profits as a proportion of total assets for the banks averaged 0.0225 in 2008, 0.02434 in 2007, 0.02444 in 2006, 0.0182 in 2005 and 0.0132 in 2004.

Thus on average the profits of the banking industry increased during the period 2004 to 2008. Notably Gulf Africa Bank started its operations in 2007 while Family Bank

converted to a commercial bank in 2007. The average figures for each year take into account the number of institutions that were in operation in each of the years. From the above, the level of credit extended decreased during the period and so did the level of nonperforming loans. However profitability of the commercial banks fluctuated during the period but on average increased marginally during the period 2004 to 2008.

### **1.1.3 Asset Quality and 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 (Baral, 2005). Aburime (2008) 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, 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).

According to Waweru and Kalani (2009) many of the financial institutions that collapse 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. However Koch (1995) argues that a good measure of credit risk or asset quality is the ratio of loan loss reserve



to gross loans because it captures the expectation of management with regard to the performance of loans. Hempel et al (1994) observed that banks with high loan growth often assume more risk as credit analysis and review procedures are less rigorous, however returns are high in such loans indicating a risk and return trade - off.

Kosmidou (2008) applied a linear regression model on Greece 23 commercial banks data for 1990 to 2002, using ROA and the ratio of loan loss reserve to gross loans to proxy profitability and asset quality respectively. The results showed a negative significant impact of asset quality to bank profitability. This was in line with the theory that increased exposure to credit risk is normally associated with decreased firm profitability. Indicating that banks would improve profitability by improving screening and monitoring of credit risk.

#### **1.1.4 Commercial Banks in Kenya**

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 (Kamau, 2009). Kenya's financial sector is largely bank - based as the capital market is still considered narrow and shallow (Ngugi et al, 2006). 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). In fact Oloo (2009) describes the banking sector in Kenya 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 very survival and growth. The performance of the banking

industry in the 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).

The overall profitability of the banking sector in Kenya has improved tremendously over the last 10 years. However despite the overall good picture a critical analysis indicates that, not all banks are profitable. For example the small and medium financial institutions which constitute about 57 % of the banking sector posted a combined loss before tax, of Ksh 0.09 billion in 2009 compared to a profit before tax of Ksh 49.01 billion posted by the big financial institutions (CBK, 2009). The huge profitability enjoyed by the large banks vis-a-vis the small and a medium bank indicates that there are some significant factors that influence the profitability of commercial banks. Flamini et al (2009) and other several studies have shown that bank profitability is influenced by bank-specific factors and industry specific factors. However, these studies were based on data from other countries and their findings may not be applied to the local banking sector. Locally, to the researcher's knowledge, no studies have been done to determine the key factors in specific asset quality the way they influence the profitability of commercial banks.

## **1.2 The Research Problem**

Determinants of profitability in the banking sector have been a subject research quite often in the recent past. The importance of bank profitability can be assessed at the micro and macro levels of the economy. The stability of the banking sector is closely related to the profitability of the sector, which is significant for a sound capital structure. The 2008

global financial crisis has shown that a banking sector having problems with profitability and capital structure may have a devastating effect to the economy. As such a banking sector will not be able to generate credit for 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. Therefore, the basic object of a bank's management is to achieve a profit, as the essential requirement for conducting any business. At the macro level, a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

Bourke (1989) examined the internal and external determinants of profitability for the banks of twelve countries from Europe, North America, and Australia and observed that banks with a high degree of market power tend to exhibit risk avoidance behavior. Several studies demonstrate the existence of a significant relation between the business cycle and bank profitability. Moulyneux and Thornton (1992) investigate the determinants of profitability in the banking sector for eighteen European countries and find no evidence of risk avoidance hypothesis. Wahlen (1994) also points out that unexpected changes in the NPL Ratio may indicate that expected future loan losses are relatively non-discretionary and negatively related to bank stock returns. While Berger and De Young (1995) mention that a management team with poor operating capability is unable to correctly appraise the value of collateral, which means that it is difficult for it to

follow up on its supervision of the borrower, its poor credit-rating technology will result in management being unable to control and supervise the operating expenses efficiently, thus leading to a significant increase in NPLs.

Athanasoglou, Brissimis and Delis (2005) analyze the determinants of profitability for Greek banks for the 1985-2001 periods. They observe that increased exposure to credit risk has a negative impact on profitability whereas labour productivity growth has a positive effect on bank profits. They also observed that business cycle has a positive but asymmetric effect on profits. Flamini, McDonald and Schumacher (2009) investigate the determinants of commercial bank profitability in Sub-Saharan Africa. They observe that larger bank size, activity diversification, and private ownership are associated with higher profitability. In terms of macroeconomic variables, low inflation and stable output growth improve profitability indicators.

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 (Kamau, 2009). Kenya's financial sector is largely bank-based as the capital market is still considered narrow and shallow (Ngugi et al, 2006). 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). In fact Oloo (2009) describes the banking sector in Kenya 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 very survival and growth. The performance of the banking industry in the 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).

The overall profitability of the banking sector in Kenya has improved tremendously over the last 10 years. However despite the overall good picture a critical analysis indicates that, not all banks are profitable. For example the small and medium financial institutions which constitute about 57 % of the banking sector posted a combined loss before tax, of Ksh 0.09 billion in 2009 compared to a profit before tax of Ksh 49.01 billion posted by the big financial institutions (CBK, 2009). The huge profitability enjoyed by the large banks vis-a-vis the small and a medium bank indicates that there are some significant factors that influence the profitability of commercial banks. Flamini et al (2009) and other several studies have shown that bank profitability is influenced by bank-specific factors and industry specific factors. However, these studies were based on data from other countries and their findings may not be applied to the local banking sector.

Although the determinants of profitability in commercial banks has been a subject of research in a number of studies the results are mixed. Locally, no studies have been done to determine factors that influence the profitability of commercial banks at the macro- and endogenous level. Hence, there is a need for research regarding the determinants of profitability of the banking system that are distinct from those which have experienced crisis quite often. The aim of this study is to investigation into the bank specific and

macroeconomic determinants of profitability banks in Kenyan banking sector. It seeks to answer the following questions: What is the relationship between bank asset quality and profitability in Kenya?

### **1.3 Objective of the Study**

The objective of this study is to examine the relationship between asset quality and profitability of commercial banks in Kenya.

### **1.4 Importance of the Study**

The banking sector is the backbone of the Kenyan economy and plays an important financial intermediary role. Therefore, its health is very critical to the health of the general economy at large. Given the relation between the well-being of the banking sector and the growth of the economy (Rajan & Zingales, 1998; Levine, 1998), knowledge of the underlying factors that influence the financial sector's profitability is therefore essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities.

Knowledge of these factors would be useful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the profitability of the Kenyan banking sector.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter a brief review of previous works on the interaction between Bank Asset Quality, Return on Assets, Micro or Endogenous determinants and Macro- Economic determinants. The goal is to highlight some of the earlier works that is relevant for this study. The chapter has five sections. Section 2.1 is the introduction. Section 2.2 examines the macroeconomic determinants of bank asset quality. Section 2.3 discusses the microeconomic determinants of bank asset quality. Section 2.4 discusses the determinants of bank performance. Section 2.5 is the summary.

#### **2.2 Macroeconomic Determinants of Bank Asset Quality**

Most of the empirical evidence suggests that banks' NPAs closely linked to the economic activity. In other words, macroeconomic factors such as; downturns / slowdowns in the economy, recessions, low rate of savings, weak markets, depressions in industrial production, reduction in per capita income levels and most importantly the inflation levels in the economy. A fair amount of the academic literature has dealt with determinants of banking crisis, which is the most severe of the consequences of bad loans in a banking system that is of valuable understanding as a backdrop for the study of NPAs.

While Berger and De Young (1995) mention that a management team with poor operating capability is unable to correctly appraise the value of collateral, which means

that it is difficult for it to follow up on its supervision of the borrower, its poor credit-rating technology will result in management being unable to control and supervise the operating expenses efficiently, thus leading to a significant increase in NPLs. Wahlen (1994) also points out that unexpected changes in the NPL Ratio may indicate that expected future loan losses are relatively non-discretionary and negatively related to bank stock returns.

Sergio (1996) in a study of non-performing loans in Italy found evidence that, an increase in the riskness of loan assets is rooted in a bank's lending policy adducing to relatively unselective and inadequate assessment of sectoral prospects. Interestingly, this study refuted that business cycle could be a primary reason for banks' NPAs. The study emphasised that increase in bad debts as a consequence of recession alone is not empirically demonstrated. However, according to Bloem and Gorter (2001) NPAs may be caused by wrong economic decision or by plain bad luck. Das and Ghosh (2003) established relationship between Non Performing Loans of India's public sector banks in terms of various indicators such as; asset size, credit growth and macroeconomic condition and operating efficiency indicators.

Chen et al. (1998) study the relationship between the risks and the ownership structure, and it appears that a negative correlation exists between the managers' shareholdings and the risks faced by the financial institution. That means that if the managers' shareholding percentage increases, the financial institution will reduce its risk behavior.



Ownership pattern can also affect the bad loan levels significantly. In times of downturn, The government would often turn to banks for financial resources through policy loans for the State Owned Enterprises (SOEs). Projects financed by these policy loans gave rise to growing default rates (Huang, 1999). The biased lending behavior of the banks to SOEs is supported by other research findings as well (Lu et al., 2001). In case of Taiwanese banks the rate of nonperforming loans decreases as the government, shareholding in bank goes higher up to 63.51 percent, while thereafter it increases (Hu et al., 2002). Few studies have also indicated a relationship between the size of the bank and the level of bad loans. Bank's sizes are often found negatively related to the rate of non-performing loan (Hu et al., 2002).

Dermiguc-Kunt and Detragiache (2000) employed a Multivariate Logit Framework to develop an early warning system for banking crisis and a ratings system for bank fragility. Beck, Demirguc-Kunt, and Levine (2005) examined the inter-linkage between bank concentration and banking system fragility where they have established that higher bank concentration is associated with lower profitability. Lis, et.al., (2000) have found that Gross Domestic Product growth, bank size and Capital had negative effect on NPAs while Loan growth, collateral, net interest margin, debt-equity, market power and regulation regime had a positive impact on NPAs.

Lis, et.al.,(2000) used a simultaneous equation model in which they explained bank loan losses in Spain using a host of indicators, which included GDP growth rate, debt-equity ratios of firms, regulation regime, loan growth, bank branch growth rates, bank size (assets over total size), collateral loans, net interest margin, capital-asset ratio (CAR) and

market power of default companies. They found that GDP growth (contemporaneous, as well as one period lag term), bank size, and CAR, had negative effect while loan growth, collateral, net-interest margin, debt-equity, market power, regulation regime and lagged dependent variable had positive effect on problem loans.

Resti and Sironi (2001) examined corporate bond recovery rate abducing to bond default Rate, macroeconomic variables such as GDP and growth rate, amount of bonds outstanding, amount of default, return on default bonds, and stock return wherein it was established that default rate, amount of bonds, default bonds, and economic recession had negative effect, while the GDP growth rate, and stock return had positive effect on corporate recovery rate.

Bercoff, Giovanniz and Grimardx (2002) in their study of Argentinean banks tried to measure NPAs by using the various bank related parameters as well as macroeconomic parameters. Bank specific parameters in their study were Ratio of Net worth to Net Assets, Banks exposure to peso loans, and type of banks such as foreign, private or public. Macroeconomic factors in this study were credit growth, reserves adequacy, foreign interest rate and monetary expansion. They have established that variables such as operating cost, exposure to peso loans, credit growth, and foreign interest rate had a negative effect on NPAs. The macroeconomic variables such as money multiplier and reserve adequacy had a positive impact on NPAs.

However, Singh (2005) argues that globalization of operations and development of new technologies are taking place at a rapid pace and this has led to the increase in resource productivity, increasing level of deposits, credits and profitability and decrease in NPAs.

Bodla and Verma (2006) have emphasised that financial sector reforms have brought in greater competition among the banks and have brought their profitability under pressure. Accordingly, banks are facing a number of challenges such as frequent changes in technology required for modern banking, stringent prudential norms, increasing competition, worrying level of NPAs, rising customer expectations, increasing pressure on profitability, assets-liability management, liquidity and credit risk management, rising operating expenditure, shrinking size of spread and so on.

### **2.3 Endogenous Determinants of Bank Asset Quality**

The literature on the determinants of asset quality focuses on banks risk taking that can be translated into a tractable empirical specification by measuring the effect of observable variables like; capital adequacy, credit growth, operational efficiency, branch spread and others.

Kwan and Eisenbis (1997) have examined the relationship between problem loans and bank efficiency by employing Granger-causality technique and found that high level of problem loans cause banks to increase spending on monitoring working out and or selling off these loans and possibly become more diligent in administering the portion of their existing loan portfolio that is currently performing.

Rajaraman, Bhaumik and Bhatia (1999) have explained the variations in NPAs across the Indian banks through differences in operating efficiency, solvency and regional concentration. Das (1999) has contrasted the different efficiency measures of public sector banks by applying data envelopment analysis model and concluded that the level of NPAs has significant negative relationship with efficiency parameters.

Rajaraman and Vasishtha (2002) in their empirical study have proved that significant bivariate relationship exists between NPAs of the public sector banks and the inefficiency problems. Again Ranjan and Dhal (2003) attempted an empirical analysis of the NPAs of Public Sector banks in India and probed the response of NPAs to terms of credit, bank size, and macroeconomic condition and found that terms of credit have significant effect on the banks' Non Performing Assets in the presence of bank size and macroeconomic shocks. They also found that alternative measures of bank size could give rise to differential impact on NPAs.

#### **2.4 Determinants of Commercial Banks Profitability**

Determinants of profitability in the banking sector have been a subject research quite often in the recent past. Bourke (1989) examined the internal and external determinants of profitability for the banks of twelve countries from Europe, North America, and Australia and observed that banks with a high degree of market power tend to exhibit risk avoidance behavior. Several studies demonstrate the existence of a significant relation between the business cycle and bank profitability. Demirgüç-Kunt and Huizinga (1999) were among the first to relate bank profits to macro-economic indicators such as real

GDP per capita. Based on aggregate data of the banking sector in a number of OECD countries, Bikker and Hu (2002) estimate the relation between bank profitability and real GDP growth. More recently, Albertazzi and Gambacorta (2009) report a significant relation between real GDP growth and bank profitability. Athanasoglou et al. (2008) find a positive relation between the output gap and the profitability of a panel of Greek banks.

Moulyneux and Thornton (1992) investigate the determinants of profitability in the banking sector for eighteen European countries and find no evidence of risk avoidance hypothesis. Berger (1995) observes that there is a positive relationship between higher capital and higher earnings for U.S. banks in the 1980s but this structure had turned to negative 1990s. Demirgüç-Kunt and Huizinga (1998) investigate the determinants of commercial bank interest margins and profitability for 80 countries during the period 1988-1995. Athanasoglou, Brissimis and Delis (2005) analyze the determinants of profitability for Greek banks for the 1985-2001 periods. They observe that increased exposure to credit risk has a negative impact on profitability whereas labour productivity growth has a positive effect on bank profits. They also observed that business cycle has a positive but asymmetric effect on profits. Flamini, McDonald and Schumacher (2009) investigate the determinants of commercial bank profitability in Sub-Saharan Africa. They observe that larger bank size, activity diversification, and private ownership are associated with higher profitability. In terms of macroeconomic variables, low inflation and stable output growth improve profitability indicators.

Berger and DeYoung (1997) investigate the intersection of the problem loan literature and the cost efficiency literature in order to understand loan quality and efficiency. They note that, at first glance, there would appear to be little or no relationship since operations and lending are conducted in different areas of the bank by different personnel. However, the quality of senior management provides one link because banks that are poorly managed may be both cost inefficient and have higher levels of problem loans than other banks.

Cole, et al (2004) and others found that small banks focus on different types of customers than large firms and evaluate credit in different ways. Carter, McNulty, and Verbrugge (2004) and Carter and McNulty (2005) suggest that monitoring may contribute positively to small bank financial performance because risk-adjusted loan yields and spreads are greater for small banks. They point out that one explanation for the positive relation between monitoring and performance is the ability of small banks to find economically valuable information about a firm's financial condition by monitoring the firm's demand deposit account. There is not a large empirical literature on the relationship between bank profit efficiency and market value. One study (Aggarwal, Akhigbe, & McNulty, 2006) that deals only with banks involved in mergers finds that these two measures are positively related.

Kaya (2002) investigating the determinants of profitability for Turkish banking sector for the 1997-2000 period observes that capital, liquidity, personnel expenditures banking sector for the 1997-2000 period observes that capital, liquidity, personnel expenditures,

loans, non-performing loans and deposits are the bank specific determinants of profitability. NPAs assume significance in determining the level of profitability, as we are well aware of the relationship between loan losses and loss of income.

## **2.5 Summary**

Determinants of profitability in the banking sector have been a subject research quite often in the recent past. The importance of bank profitability can be assessed at the micro and macro levels of the economy. The stability of the banking sector is closely related to the profitability of the sector, which is significant for a sound capital structure. The 2008 global financial crisis has shown that a banking sector having problems with profitability and capital structure may have a devastating effect to the economy. As such a banking sector will not be able to generate credit for 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. Therefore, the basic object of a bank's management is to achieve a profit, as the essential requirement for conducting any business. At the macro level, a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

The banking sector is the backbone of the Kenyan economy and plays an important financial intermediary role. Therefore, its health is very critical to the health of the

general economy at large. Given the relation between the well-being of the banking sector and the growth of the economy (Rajan & Zingales, 1998; Levine, 1998), knowledge of the underlying factors that influence the financial sector's profitability is therefore essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities. Knowledge of these factors would be useful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the profitability of the Kenyan banking sector.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter outlines the methodology that was used in conducting the research. Section 3.2 presents the research design. Section 3.3 discusses the target population for the study. Section 3.4 presents data and data collection instruments. Section 3.5 discusses the data analysis.

#### **3.2 Research Design**

The study employs a descriptive research design since this study aims at describing the relationship between two variables. This research design is not only simple to apply but it also easily lends itself to describing different types of phenomena and empirical relationships. Hence, it is most commonly used in quantitative research, Kothari (2004).

Thus the study will employ quantitative method to analyse the relationship between bank asset quality and profitability.

#### **3.3 Target Population**

The population of this study consists of all commercial banks operating in Kenya over the relevant period. This consisted of 43 commercial banks. See Appendix I.

### 3.4 Data and Data Collection Instrument

The data used is obtained from all Kenyan commercial banks over the period 2006–2013. The financial statements of commercial banks operating in the Kenyan banking sector over the period 2006–2013 are collected from the financial statement of the respective banks. The macroeconomic variables are retrieved from IMF Financial Statistics (IFS) database. The study will use all forty three (43) banks in Kenya and the sample will be the whole population.

### 3.5 Data Analysis

This section presents the conceptual and analytical models used in this study.

#### 3.5.1 The Conceptual Models

Conceptually, the relationship between profitability and asset quality and other determinants of profitability is summarised in the model below.

$$ROA = f (LLP/TL, NII/TA, NIE/TA, EQASS) \quad (1)$$

$$ROA = f (MSG, INFL, MKTCAP) \quad (2)$$

**Figure 1 Operationalization of the Variables**

<b>Variable</b>	<b>Description</b>	<b>Hypothesized Relationship</b>
Dependent		
ROA	The return on average total assets of the bank in year t.	NA
<b>Independent</b>		
<b>Internal Factors</b>		

LLP/TL	Loan loss provisions/total loans. An indicator of credit risk that how much a bank is provisioning in year $t$ relative to its total loans.	–
NII/TA	A measure of diversification and business mix, calculated as non-interest income/total assets.	+
NIE/TA	Calculated as a non-interest expense/total assets and Provides information on the efficiency of the management regarding expenses relative to the assets in year $t$ . Higher ratios imply a less efficient management.	–
EQASS	A measure of bank's capital strength in year $t$ , calculated as equity/total assets. A high capital asset ratio is assumed to be indicator of low leverage and therefore lower risk.	+/-
<b>External Factors</b>		
MSG	The growth of money supply as measured by currency in circulation.	+
INFL	The annual inflation rate.	+/-
MKTCAP	The ratio of stock market capitalisation. The variable serves as a proxy of financial development.	–

### **Profitability Measure**

Following Ben Naceur and Goaid (2008), Kosmidou (2008), and Abbasoglu, Aysan and Gunes (2007) among others, this study uses ROA as the dependent variable. ROA shows the profit earned per dollar of assets and most importantly, it reflects the management's ability to utilise the banks financial and real investment resources to generate profits (Hassan & Bashir, 2003). For any bank, ROA depends on the bank's policy decisions as well as on uncontrollable factors relating to the economy and government regulations. Rivard and Thomas (1997) suggest that bank profitability is best measured by ROA, in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of a firm to generate returns on its portfolio of assets.

### **Internal Determinants**

The bank-specific variables included in the regressions are LLP/TL (loans loss provisions divided by total loans), NII/TA (non-interest income divided by total assets), NIE/TA (total overhead expenses divided by total assets), and EQASS (book value of stockholders' equity as a fraction of total assets). The LNTA variable is included in the regression as a proxy of size to capture the possible cost advantages associated with size (economies of scale). In the literature, mixed relationships are found between size and profitability, while in some cases a U-shaped relationship is observed. LNTA is also used to control for cost differences related to bank size and for the greater ability of larger bank to diversify.

The ratio of loan loss provisions to total loans (LLP/TL) is incorporated as an independent variable in the regression analysis as a proxy of credit risk. The coefficient of LLP/TL is expected to be negative because bad loans are expected to reduce profitability. In this direction, Miller and Noulas (1997) suggest as the Exposure of the financial institutions to high risk loans increases, the accumulation of unpaid loans would increase and profitability would decrease. Miller and Noulas (1997) suggest that decline in loan loss provisions are in many instances the primary catalyst for increases in profit margins. Furthermore, Thakor (1987) also suggests that the level of loan loss provisions is an indication of a bank's asset quality and signals changes in the future performance.

To recognise that financial institutions in recent years have increasingly been generating income from “off-balance sheet” business and fee income general, the ratio of non-interest income over total assets (NII/TA) is entered in the regression analysis as a proxy for non-traditional activities. Non-interest income consists of commission, service charges, and fees, guarantee fees, net profit from sale of investment securities, and foreign exchange profit. The ratio is also included in the regression model as a proxy measure of bank diversification into non-traditional activities. The variable is expected to exhibit positive relationship with bank profitability.

The ratio of overhead expenses to total assets, NIE/TA, is used to provide information on the variations of bank operating costs. The variable represents the total amount of wages and salaries as well as the costs of running branch office facilities. The relationship between the NIE/TA variable and profitability levels may be negative, as banks that are

more productive and efficient aim to minimise their operating costs. Furthermore, the usage of new electronic technology, like ATMs and other automated means of delivering services, may have caused wage expenses to fall (as capital is substituted for labour).

EQASS variable is included in the regressions to examine the relationship between profitability and bank capitalisation. A strong capital structure is essential for financial institutions in developing economies, since it provides additional strength to withstand financial crises and increased safety for depositors during unstable macroeconomic conditions. Furthermore, lower capital ratios in banking imply higher leverage and risk, which therefore lead to greater borrowing costs. Thus, the profitability level should be higher for the better-capitalised bank.

### **External Determinants**

Bank profitability is sensitive to macroeconomic conditions despite the trend in the industry towards greater geographic diversification and a larger use of financial engineering techniques to manage risk associated with business cycle forecasting. Generally, higher economic growth encourages banks to lend more and permits them to charge higher margins while improving the quality of their assets. Neely and Wheelock (1997) use per capita income and suggest that this variable exerts a strong positive effect on bank earnings. Dermiguc-Kunt and Huizinga (2001) and Bikker and Hu (2002) identifies possible cyclical movements in bank profitability, i.e., the extent to which bank profits are correlated with the business cycle. Their findings suggest that such a

correlation exists, although the variables used were not direct measures of the business cycle.

To measure the relationship between economic and market conditions and bank profitability, MSG (money supply growth), INFL (annual inflation rate), and MKTCAP (market capitalisation) are used.

Important Macroeconomic condition possibly affecting both the costs and revenues of banks is the inflation rate (INFL). Staikouras and Wood (2003) points out that inflation may have direct effects, e.g., an increase in the price of labour and indirect effects, e.g., changes in interest rates and asset prices on the profitability of banks.

Changes in the money supply may lead to changes in the nominal GDP and the price level. Although the money supply is basically determined by the central bank's policy, it may also be affected by the behaviour of households and banks. Following among others, Kosmidou (2008), the growth of the money supply (MSG) is used in this study. Mamatzakis and Remoundos (2003) used the money supply as a measure of market size and find that the variable significantly affects bank profitability.

Following among others, Dermigu-Kunt and Huizinga (1999), MKTCAP is introduced in the regression model to reflect the complementarities or substitutability between bank and stock market financing. Dermiguc-Kunt and Huizinga (1999) find that the ratio of stock market capitalisation to bank assets is negatively related to bank margins and

suggested that the relatively well-developed stock markets can substitute for bank finance. We therefore expect the variable to be negatively related to bank performance.

### **3.5.2 The Analytical Models**

This study employed the *t*-tests, *f*-tests, and correlation analysis to determine the strength of the relationship between asset quality and profitability in the Kenyan banking industry. The analysis was based on equation (3) and equation (4), below. The main reason for use of the two regression equations is because of the two types of determinants; namely internal and external determinants which both have effect on profitability of banks independently.

$$ROA = \alpha_0 + \alpha_1 LLP/TL + \alpha_2 NII/TA + \alpha_3 NIE/TA + \alpha_4 EQASS + e_t \quad (3)$$

$$ROA = \beta_0 + \beta_1 MSG + \beta_2 INFL + \beta_3 MKTCAP + \delta_t \quad (4)$$



## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSION

#### 4.1 Introduction

This chapter presents the results of the data analysis and the discussion. Section 4.2 presents the summary statistics. Section 4.3 analyses the results of the estimated model. Section 4.4 is the discussion of the results. Section 4.5 is the summary of the chapter.

#### 4.2 Summary Statistics

**Table 4.1 Summary Statistics**

	TO	LLP	NII	TL	NIE	EQASS	GMS	INFL	MCAP	NPL	ROA
Mean	1589775	14084	60029	946832	95972	205049	0.1727	0.1173	0.4021	48521	0.0292
Std Dev	678715	9133	20975	439543	38356	134826	0.0320	0.0687	0.0732	25491	0.0039
Skew	1.13014	-0.3365	-1.6768	-0.6715	-1.0541	-0.7256	-0.7395	2.6377	-1.1217	-1.4521	-2.250
Kurtosis	0.3654	1.1592	-0.2192	0.6639	-0.0203	0.5412	0.3058	1.3729	0.2293	0.3582	0.1684

**Source: Author's computations**

Table 4.1 shows that the data is not normally distributed. All the variables have the mean and standard deviations exceeding zero and one, respectively. The variables are also negatively skewed though they are not leptokurtic.

#### 4.3 Bank Asset Quality and Bank Performance

This section discusses the results of the estimated model for the relationship between asset quality and bank profitability.

### 4.3.1 Correlation among the Variables

Table 4.2 shows the correlations among the variable in the study. ROA is positively correlated with all the variables except for inflation and market capitalization. Net profit (NP) is positively correlated with all the variables except total liabilities (TL), growth in money supply (GMS), market capitalization (MCAP), and inflation (INFL). MCAP is negatively correlated with all variables except GMS. Turnover (TO) is positively related to all variables except TL, INFL, GMS and MCAP. Loan loss provision is positively related to all variables except INFL and MCAP. Net interest income (NII) is positively related to all variables except INFL, GMS and MCAP. TL is negatively correlated with all variables except GMS, IFL, and ROA. Non- interest expense (NIE) is positively related to all variables except TL, INFL, GMS and MCAP. The variable EQASS is positively related to all variables except TL, INFL, GMS and MCAP. GMS is positively correlated with MCAP, TL, LLP, and ROA and negatively correlated to the remaining variables. INFL is negatively correlated with all the variables in the study except TL.

**Table 4.2 Results of Correlation Analysis**

	<i>TO</i>	<i>LLP</i>	<i>NII</i>	<i>TL</i>	<i>NIE</i>	<i>EQASS</i>	<i>GMS</i>	<i>INFL</i>	<i>MCAP</i>	<i>NP</i>	<i>ROA</i>
<b>TO</b>	1										
<b>LLP</b>	0.42345	1									
<b>NII</b>	0.97206	0.59017	1								
<b>TL</b>	-0.0595	0.75915	0.12237	1							
<b>NIE</b>	0.98904	0.44387	0.9822	-0.00004	1						
<b>EQASS</b>	0.87359	0.27254	0.79696	-0.3256	0.7998	1					
<b>GMS</b>	-0.4314	0.48352	-0.2682	0.63813	-0.4337	-0.3363	1				
<b>INFL</b>	-0.4389	-0.2632	-0.4305	0.08328	-0.3806	-0.5796	-0.2219	1			
<b>MCAP</b>	-0.5127	-0.386	-0.5649	-0.4772	-0.5923	-0.0932	0.29915	-0.2688	1		
<b>NP</b>	0.99149	0.47946	0.9758	-0.0525	0.97416	0.90159	-0.3525	-0.5002	-0.4298	1	
<b>ROA</b>	0.81486	0.71781	0.88445	0.15243	0.79893	0.79711	0.08617	-0.6289	-0.2009	0.87809	1

**Source: Author's computations**

#### **4.3.2 Results of the Model Goodness of Fit Test**

Due to the high correlation among the variables analysis proceeded in two steps. First, NIE, EQASS, LLP, and NII were regressed on ROA. The value of R-square was 83 percent while the adjusted R-square was 60 percent. This means that the model explains 83 percent of the variation in ROA. Therefore, there is a very good fit between the data and the model.

Second, GMS, INFL and MKTCAP were regressed on ROA. The value of R-square was 54 percent while the adjusted R-square was 20 percent. This means that the model explains 72 percent of the variation in ROA. Therefore, there is a very good fit between the data and the model.

#### **4.3.3 Results of ANOVA**

For the first model in 4.3.2 both the regression sum of the squares (RSS) and the residual sum of the squares (RESS) were zero. The MSE was also zero. The ANOVA results for the second model were  $RSS = 0.0001$  and  $REES = 0.00001$ .

The  $RSS = 0.0001$  and the  $REES = 0.00001$  for the second model. Therefore, the two models perform similarly in terms of ANOVA.

### 4.3.3 Asset Quality and Bank Profitability in Kenya

The results for the estimated model are displayed in Table 4.3.

**Table 4.3 Results of Estimating the Relationship between Asset Quality and Profitability**

	<b>Coefficients</b>	<b>Standard Error</b>	<b>t-Statistic</b>	<b>P-value</b>
<b>PANEL A: MODEL FOR MICROECONOMIC DETERMINANTS OF PROFITABILITY</b>				
<b>Intercept</b>	0.0285	0.0491	0.5810	0.6020
<b>LLP</b>	0.5858	0.1857	3.1542	0.0511
<b>NII</b>	0.3487	0.4190	0.8323	0.4663
<b>NIE</b>	-0.3104	0.8235	-0.3770	0.7313
<b>EQASS</b>	-0.0238	0.0685	-0.3469	0.7516
<b>PANEL B: MODEL FOR MACROECONOMIC DETERMINANTS OF PROFITABILITY</b>				
<b>INTERCEPT</b>	0.0422	0.0106	3.9904	0.0163
<b>GMS</b>	0.0059	0.0444	0.1325	0.9010
<b>INFL</b>	-0.0422	0.0205	-2.0566	0.1089
<b>MKTCAP</b>	-0.0223	0.0197	-1.1347	0.3199

Source: Author's computations

The results of the data analyses show that only NIE, EQASS, INFL and MKTCAP are negatively related to ROA. However, the negative relationship is not statistically significant except for INFL. Moreover, only LLP, NII, and GMS are positively related to ROA. But only LLP is statistically significant at 5 percent confidence interval.

All the variables in the empirical model had the theoretically expected relationships except for LLP that was positive and significant.

#### **4.4 Discussion**

The positive relationship between LLP and ROA contradicts the expected results. This implies that as commercial banks increase LLP profitability and ROA increases. There are at least two reasons to explain this finding. First, banks are risk averse and are quick to recognise risk among problem loans on their books but writing them off. Thus, they effectively monitor their loan portfolio reducing the amount of non-performing loans. Second, good loan portfolio management increases the returns on the performing loans and increases profitability.

There is a positive relationship between NII and ROA as predicted by the theoretical model. This means that as banks generate more income for their non-lending activities there profitability and ROA increases. However, the results show that this is not one of the major sources of profit for the commercial banks.

The results also confirm a negative relationship between NIE and ROA. Therefore, as NIE decreases ROA increases. The reason is that a decrease in NIE increases profits for the commercial banks. Given the amount of assets of a commercial bank this causes ROA to rise. NIE decline can be attributed to an increase in automation of banking operations over the sample period.

There is a negative relationship between EQASS and ROA. This implies that as EQASS declines ROA rises. The decline in EQASS increases the amount of funds available for

on-lending. Since a major proportion of the commercial banks profits come from lending activities, this increases bank profits and ROA.

The results indicate a negative relationship between GMS and ROA. Therefore, as money supply increases ROA also increases. The rationale is that commercial banks play a crucial role in the money supply process in the economy. An increase in money supply indicates an increase in bank lending activities that when properly managed contribute to increases bank profits and ROA.

Generally, a decline in inflation rates causes interest rates to decline. This reduces the cost of borrowing and increase the demand for loans by the customers. Since commercial banks earn their profits in the form of interest charged on loans their profits rises as interest rates fall. This explains a negative relationship between INFL and ROA.

Lastly, the results confirm the predicted negative relationship between MKTCAP and ROA. Loans and stocks are complimentary sources of finance for firms. As firms increasing debt in their capital structure they reduce reliance on stocks. Hence, as the proportion of capital raised from the stock market declines borrowing of loans from commercial banks to finance business activities increases thereby increasing profits and ROA.

#### **4.5 Summary**

In summary, the results of the data analyses show that only NIE, EQASS, INFL and MKTCAP are negatively related to ROA. The negative relationships are not statistically significant except for INFL. Moreover, only LLP, NII, and GMS are positively related to ROA. But only LLP is statistically significant at 5 percent confidence interval.

Furthermore, all the variables in the empirical model had the theoretically expected relationships except for LLP that was positive and significant.

## **CHAPTER FIVE**

### **SUMMARY AND CONCLUSION**

#### **5.1 Introduction**

This chapter presents the summary and conclusion of the study. Section 5.2 presents the summary of the study. Section 5.3 states the conclusions. Section 4.4 is the limitation of the study. Section 5.5 is the recommendation for further research.

#### **5.2 Summary of the Study**

The objective of this study was to examine the relationship between asset quality and financial performance of commercial banks in Kenya. The study employed a descriptive research design. The data were obtained from secondary sources like company reports and the NSE handbooks. The study used descriptive statistics, correlation analysis and ANOVA to analyze the data. The regression model was employed to analyze the data.

The results show that only NIE, EQASS, INFL and MKTCAP are negatively related to ROA. However, the negative relationship is not statistically significant except for INFL. Moreover, only LLP, NII, and GMS are positively related to ROA. But only LLP is statistically significant at 5 percent confidence interval. All the variables in the empirical model had the theoretically expected relationships except for LLP that was positive and significant. Therefore, asset quality as measured by LLP positively influences ROA of commercial banks.



### **5.3 Conclusions**

The following conclusions are drawn from the data analysis. First, as commercial banks increase LLP profitability and ROA increases. Second, as banks generate more income for their non-lending activities there profitability and ROA increases. Third, there is a negative relationship between NIE and ROA. Therefore, as NIE decreases ROA increases.

Fourth, there is a negative relationship between EQASS and ROA. This implies that as EQASS declines ROA rises. Fifth, there is a negative relationship between GMS and ROA. Therefore, as money supply increases ROA also increases. Sixth, there is a negative relationship between INFL and ROA. Lastly, there is a negative relationship between MKTCAP and ROA.

### **5.4 Limitations of the Study**

The main limitation of this study is the short sample period of eight years employed. A longer time series data covering more than one country could have provided more plausible findings. This could provide results that can be generalized.

The study did not include other variables like changes in government regulations and financial deepening in the economy. The influence of such factors cannot be gainsaid.

## **5.5 Recommendation for Further Research**

Considering the limitations of this study, future studies can improve upon it in at least two ways. First, a longer sample period and time series data covering more than one country can be used.

Second, other variables like changes in government regulations and financial deepening in the economy should be included in the analysis.

## REFERENCES

- Abbasoglu, O. F., Aysan, A. F., & Gunes, A. (2007). Concentration, competition, efficiency and profitability of the Turkish banking sector in the post-crisis period. *Banks and Bank Systems* 2(3), 106–115.
- Aburime, U. (2008). Determinants of Bank Profitability: Company-Level Evidence from Nigeria. [Online]. October 2008. Available from: <http://ssrn.com/abstract=1106825>. [Accessed: 10 June 2010]
- Adriaan M. Bloem and Cornelis N. Gorter, (2001). The treatment of Non Performing Loans in Macroeconomic Statistics, *IMF Working Paper Statistics Department*. , 6-7
- Aggarwal, R., Akhigbe, A. & McNulty, J. E. (2006). Are differences in acquiring bank profit efficiency priced in financial markets? *Journal of Financial Services Research*, 30, 265–286.
- Albertazzi, U. and L. Gambacorta (2009), Bank Profitability and the Business Cycle, *Journal of Financial Stability* 5(4), 393-409.
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2005). Bank specific, industry specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121–136.
- Athanasoglou, P.P., S.N. Brissimis, and M.D. Delis (2008), Bank-specific, industry-specific and macroeconomic determinants of bank profitability, *Journal of International Financial Markets, Institutions and Money* 18, 121-136
- Baral, K. J. (2005). Health Check-up of Commercial Banks in the Framework of CAMEL: A Case Study of Joint Venture Banks in Nepal. *The Journal of*

*Nepalese Business Studies*. [Online] Vol II No.1. Available from:<http://www.nepjol.info/index.php/JNBS/article/viewFile/55/483>. [Accessed: 20/06/2010]

- Beck T.A, Demirguc-Kunt and R. Levine (2005), Bank Concentration and Fragility: Impact and Mechanics, *NBER Working Papers 11500, National Bureau of Economic Research Inc*
- Ben Naceur, S., & Goaid, M. (2008). The determinants of commercial bank interest margin and profitability: Evidence from Tunisia. *Frontiers in Finance and Economics* 5(1), 106–130.
- Berger, A. (1995). The Relationship between Capital and Earnings in Banking, *Journal of Money, Credit and Banking*, 27, 432-456.
- Berger, A. N., Hanweck, G. A., & Humphrey, D. B. (1987). Competitive viability in banking: Scale scope and product mix economies. *Journal of Monetary Economics* 20(3), 501–520.
- Berger, A.N. and R. De Young (1995), Problem loans and cost efficiency in commercial banks, *Journal of Banking & Finance*, 21, 849–870.
- Bhattacharya, H (2001), *Banking Strategy, Credit Appraisal & Lending Decisions*, Oxford University Press, New Delhi.
- Bikker, J., & Hu, H. (2002). Cyclical patterns in profits, provisioning and lending of banks and pro-cyclicality of the new Basel capital requirements. *BNL Quarterly Review* 221,143–175.

- Bodla B.S and Richa Verma (2006), Determinants of Profitability of Banks in India: A multivariate Analysis, *Journal of Services Research*, Volume 6, Number 2 (October 2006 – March 2007)
- Bourke, P. (1989). Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia, *Journal of Banking and Finance*, 13, 65-79.
- Canals, J. (1993). *Competitive Strategies in European Banking*. Oxford: Clarendon Press.
- Carter, D. & McNulty, J. E. (2005). Deregulation, technological change and the business lending performance of large and small banks. *Journal of Banking and Finance*, 313–330.
- Carter, D., McNulty, J. E., & Verbrugge, J. A. (2004). Do small banks have an advantage in lending? An analysis of risk-adjusted loan yields at large and small banks. *Journal of Financial Services Research*, 25, 233–252.
- Central Bank of Kenya (2009). Bank Supervision Annual Report 2009. *Central Bank of Kenya, Nairobi*.
- Chen, CR, TL Steiner and AM Whyte (1998), Risk-taking behavior and management ownership in depository institutions, *The Journal of Financial Research*, 21, 1–16
- Chen, J. (2004), *Non-performing Loan Securitization in the People's Republic of China*, Stanford University, Palo Alto, CA
- Chiorazzo, V., C. Milani, and F. Salvini, 2008, Income diversification and bank performance: evidence from Italian banks, *Journal of Financial Services Research* 33, 181–203.

Cole, R. A., Goldberg, L. G., & White, L. J. (2004). Cookie cutter vs. character: The micro structure of small business lending by large and small banks. *Journal of Financial and Quantitative Analysis*, 39, 227–251.

commercial banks, *The Financial Review* 39, 101–127.

Das A and Ghosh S, (2003), *Determinants of Credit Risk*, Paper presented at the Conference on Money, Role and Investment held at Nottingham Trent University in Nov 2003

Das, Abhiman, (1999), ‘*Efficiency of Public Sector banks: An application of Data Envelopment Model*’, *Prajnan*, Vol. 28, No.2, September 1999

Demirguc-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: Some international evidence. *World Bank Economic Review*, 13, 379–408.

Demirguc-Kunt, A., & Huizinga, H. (2001). Financial structure and bank profitability. In Dermiguc Kunt, A., & Levine, R. (Eds.). *Financial Structure and Economic Growth: A Cross Country Comparison of Banks, Markets and Development*. Cambridge, MA: MIT Press.

Demirgüç-Kunt, A., and H. Huizinga (1998). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence, *World Bank Policy Research Working Paper Series*, No. 1900.

Dermiguc-Kunt, A and E. Detragiache, (2000), Monitoring banking Sector Fragility: A Multivariate Logit Approach, *World Bank Economic Review*, Vol 14, No.2, pp 287-307

- DeYoung, R., and T. Rice, 2004, *Non interest income and financial performance at US*  
edn. John Wiley & Sons. New York
- Flamini, V., McDonald, C. & Schumacher, L. (2009). *The Determinants of Commercial  
Bank Profitability in Sub-Saharan Africa*. WP/09/15. [Online]. January 2009.  
Available from: [www.imf.org/external/pubs/ft/wp/2009/wp0915.pdf](http://www.imf.org/external/pubs/ft/wp/2009/wp0915.pdf). [Accessed:  
26 May 2010]
- Hassan, M. K., & Bashir, A. H. M. (2003). *Determinants of Islamic banking profitability.*  
*Paper presented at the 10<sup>th</sup> ERF Annual Conference, Morocco, 16–18 December.*
- Heffernan, S. A. (2005). *Modern banking.*
- Hempel, G. H., Simonson, D. G. & Coleman, A.B. (1994). *Bank Management*. 4<sup>th</sup>  
Edition
- Hu, Jin-Li, Yang Li and Chiu, Yung-Ho (2002), *Ownership and Non-performing Loans:  
Evidence from Taiwanese Banks, Proceedings of International Conference, National  
Taiwan University*
- Huang, Yiping, (1999), *Dealing with Bad Loans of the Chinese Banks, China Update  
1999 Conference Papers, November, National Centre for Development Studies*
- IMF, (2009), *Global Financial Stability Report- Responding to the Financial Crisis and  
Measuring Systemic Risks, World Economic and Financial Surveys, International  
Monetary Fund, Washington DC, April 2009*
- Kamau, A.W. (2009). *Efficiency in the Banking Sector: An Empirical Investigation of  
Commercial Banks in Kenya. A thesis submitted in partial fulfillment of the  
Requirements of Degree of Doctor of Philosophy.* Nairobi: University of Nairobi

- Koch, T.W. (1995). *Bank Management*. 3<sup>rd</sup> Edition. The Dryden Press. London
- Kosmidou, K. (2008). The determinants of banks „profits in Greece during the period of EU Financial integration. *Journal of Managerial Finance*. [Online] 34 (3). Available from: <http://www.emeraldinsight.com>. [Accessed: 05/06/2010]
- Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance* 34(3), 146–159.
- Kothari, C.N (2003). *Research Methodology: Methods and Techniques* 2<sup>nd</sup> Edition  
Wishiwa Prakashan New Delhi
- Kwan, S and R. Eisenbis (1997), Bank Risk, Capitalization and Operating Efficiency, *Journal of Financial Services Research*, 12, 117-131
- Levine, R. (1998). The legal environment, banks, and long run economic growth. *Journal of Money, Credit and Banking*, 30, 596–613.
- Levine, R. (2004), ‘*Finance and Growth: Theory, Evidence & Mechanism*’, edited by Aghion, P and Durlauf, S. (eds), *Handbook of Economic Growth*, Amsterdam: North-Holland, pp. 81.
- Lis, S.F. de, J.M. Pages, and J. Saurina, (2000), Credit Growth, Problem Loans and Credit Risk Provisioning in Spain, Banco de España — Servicio de Estudios, *Documento de Trabajo* no. 0018
- Lu, Ding, Thangavelu, Shandre M. and Qing, Hu, (2001), The Link between Bank Behavior and Non-performing Loans in China, *Working Paper* No. 0108, National University of Singapore



- Mamatzakis, E. C., & Remoundos, P. C. (2003). Determinants of Greek commercial banks profitability, 1989–2000. *Spoudai* 53(1), 84–94.
- Mason, Joseph R. (1998), American Banks During the Great Depression: A New Research Agenda. *Federal Reserve Bank of St. Louis Review*, 80(3), pp. 151–52.
- Miller, S. M., & Noulas, A. (1997). Portfolio mix and large bank profitability in the USA. *Applied Economics*, 29, 505–512.
- Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking and Finance*, 16, 1173–1178.
- Mwega, F.M. (2009). Global Financial Crisis: Kenya: Discussion series. Paper 7. [Online]. May 2009. Available at [www.odi.org.uk/resources/download/3312.pdf](http://www.odi.org.uk/resources/download/3312.pdf). [Accessed: 25 May 2010]
- Neely, M., & Wheelock, D. (1997). Why does bank performance vary across states? *Federal Reserve Bank of St. Louis Review*, 27–38.
- Ngugi, N., Amanja D. & Maana, L. (2006). Capital Market, Financial Deepening and Economic growth in Kenya. [Online]. Available from:[http://www.csae.ox.ac.uk/conferences/2009-EDiA\\_papers/513 - Isaya.pdf](http://www.csae.ox.ac.uk/conferences/2009-EDiA_papers/513_Isaya.pdf) Accessed: 27 May 2010]
- Oloo, O. (2009). The Banking Survey 2009. *Think Business*. Nairobi
- Oloo, O. (2009). The Banking Survey 2009. *Think Business*. Nairobi
- Rajan, R. G., & Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88, 559–586.

- Rajaraman Indira and Vasishtha, (2002), Non Performing Loans of Public Sector banks –Some Panel Results, *Economic and Political Weekly* (February 2002)
- Rajaraman, Bhaumik and N Bhatia, (1999), NPA variations across Indian Commercial banks, some findings, *Economic and Political Weekly*, Volume 37, No's 3 and 4, pp 16-23
- Ranjan, Rajiv and Sarat Chandra Dhal, (2003), Non-Performing Loans and Terms of Credit of Public Sector Banks in India: An Empirical Assessment, Reserve Bank of India *Occasional Papers*, Vol 24, No. 3, Winter 2003
- Rivard, R. J., & Thomas, C. R. (1997). The effect of interstate banking on large bank holding company profitability and risk. *Journal of Economics and Business*, 49, 61–76.
- Sergio, M, (1996), Non-performing bank loans: Cyclical patterns and Sectoral risk, *Review of Economic Conditions in Italy*, Rome: Jan-Jun 1996. , Issue 1
- Singh, C. (2005), Financial sector reforms and state of Indian economy, *Indian Journal of Economics & Business*, 4:1, 88-133.
- Staikouras, C., & Wood, G. (2003). The determinants of bank profitability in Europe. *Paper presented at the European Applied Business Research Conference*, Venice, 9–13 June.
- Thakor, A. (1987). Discussion. *Journal of Finance*, 42, 661–663.
- Waweru, N. and Kalani, V. (2009). Commercial Banking Crises in Kenya: Causes and Remedies. *African Journal of accounting Economics, Finance and Banking*

*Research*. [Online] 4(4). Available from, [http://globip.com/pdf\\_pages/african-vol4](http://globip.com/pdf_pages/african-vol4)  
article 2. pdf. [Accessed: 28/05/2010]

Whalen, J (1994), The nature of information in commercial bank loan loss disclosures,  
*The Accounting Review*, 69, 455–478

Wim Naude, (2009) The Financial Crisis of 2008 and the Developing Countries  
Discussion Paper No. 2009/01

## **Appendix I**

### LICENSED COMMERCIAL BANKS

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank Kenya
6. CfC Stanbic Holdings
7. Chase Bank Kenya
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Bank Kenya
16. Ecobank Kenya
17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. First Community Bank

22. Giro Commercial Bank
23. Guaranty Trust Bank Kenya
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya
29. I&M Bank
30. Imperial Bank Kenya
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. K-Rep Bank
34. Middle East Bank Kenya
35. National Bank of Kenya
36. NIC Bank
37. Oriental Commercial Bank
38. Paramount Universal Bank
39. Prime Bank (Kenya)
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank