DETERMINANTS OF OPERATING EFFICIENCY FOR COMMERCIAL BANKS IN KENYA: A MARKET SHARE INDEX POSITION ANALYSIS

BY

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DECLARATION

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DEDICATION

This work is dedicated to my wife Dolly Akili, my children Angela, Brolin, Brian and Maria as well as to my parents Gaitano Odunga and Emmah Shibutse, who supported me tirelessly and encouraged me during my studies to ensure that this work comes to a successful conclusion.

ABSTRACT

Commercial banks play an important role as financial intermediaries for savers and borrowers in an economy. All sectors of the economy depend on the banking sector for their survival and growth. Operational efficiency is the ability to deliver products and services without sacrificing quality. Operating efficiency for banks is essential for a well-functioning economy. Banks operate efficiently by directing society‘s savings toward those enterprises with highest expected social returns and monitoring them carefully after lending society‘s scarce resources. The banking sector in Kenya has grown tremendously over years in terms of numbers, size and profitability. Despite growth in the sector, challenges still remain, market risk, credit and operational risk posses a major challenge. Kenyan commercial banking is not the largest supplier of credit yet the largest in terms of assets in the financial services industry. Banks are yet to adopt a model that managers and any interested party may use to determine the level of operating efficiency. Guided by the efficiency theory, this study endeavored to examine the determinants of operating efficiency for commercial banks in Kenya. In particular, the study investigated the effect of bank-specific performance indicators capital adequacy, credit risk, liquidity, profitability and asset quality on operating efficiency of banks. The study further examined the existence of statistically significant difference between low and high market share banks in relation to their operational efficiency. The study adopted an explanatory research design using panel data. Secondary data was obtained from annual financial statements and reports of 43 commercial banks operating in Kenya for seven-year period 2005 - 2011. Data was analyzed using fixed effects regression model to attain the best regression equation. Statistical significance was checked by an F- test of the overall fit and t- tests of individual parameters. The results indicate that previous year’s operating efficiency together with equity capital to total assets as proxy for capital adequacy, loan loss provision to total assets as proxy for credit risk, recurring earning power as proxy for Profitability and loan loss provision to net interest revenue as proxy for asset quality were significant in explaining operating efficiency. Interbank ratio as proxy for liquidity was insignificant in explaining bank operating efficiency. The results also indicate that there exists significant difference between low market share banks and high market share banks. The study contributes to the available strategies that managers may apply in managing risk and efficiencies in their organizations. The study recommends that bank regulators and managers should put more emphasis and control on variables that affect bank operating efficiency in order for them to remain competitive in the market. Further research using non-bank specific performance indicators and using different samples may provide further insights on the concept of operating efficiency for commercial banks.

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LIST OF ACRONYMS AND ABBREVIATIONS

CBK	Central Bank of Kenya
CCA	Core capital ratio
CEA	Equity capital to total asset ratio
CRBs	Credit Reference Bureaus
DPFB	Deposit Protection Fund Board
IAS	International Accounting Standards
IBR	Interbank ratio
ICT	Information and Communication Technology
ILGL	Impared loans to gross loans
LADSTF	Liquid assets to deposits and short-term funding
LLPE	Loan loss provision to total equity
LLPNIR	Loan loss provision to net interest revenue
LLRGL	Loan loss reserve to gross loans and advances
LLRIL	Loan loss reserve to impaired loans
LR	Loan ratio
MI	Market share index
NCOAGL	Net charge off to average gross loans ratio
NCONIBLLP	Net charge off to net income before loan loss provisions
NIM	Net interest margin
NLTB	Net loans to total deposits and borrowings
OIAA	Other operating income to average assets
OPEFF	Operating Efficiency
OPEFFLAG	Lag of operating efficiency
REP	Recurring earning power
ROA	Return on assets
ROE	Return on equity
SME	Small Micro Enterprises
TRC	Tier 1 risk- based capital ratio
USA	United States of America

OPERATIONAL DEFINITION OF KEY TERMS

High Market Share Banks – Banks that scored on average a market share index above the simple average of 2.486 during the study period.

Low Market Share Banks – Banks that scored on average a market share index below the simple average of 2.486 during the study period.

Market Share Index - A composite of weighted average of annual net assets, total deposits, total capital and number of deposit accounts held by a bank. The study used market share index to establish the low market share banks and the high market share banks.

Performance Indicators - Factors by reference to which performance of business engagement are measured effectively to establish periodic achievement of some levels of operational goals. The study used accounting ratios as reference to performance indicator for banks.

Operating Efficiency – The ratio of annual total revenue generated by a bank to total annual operational costs.

Proxy Variable – The computed accounting ratios that were used by the study to measure the main variables, capital adequacy, and credit risk, liquidity, profitability and asset quality.

Regulator – The Central Bank of Kenya that is legally mandated to supervise and to provide guidelines for operations of commercial banks in Kenya.

Stata – A software package that was used by the study to carry out the statistical analyses.

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CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter introduces the importance of commercial banking in economic growth and development, why banks' operational efficiency is critical. The chapter is organized into six sections. Section 1.1 gives the background of the study while section 1.2 discusses the statement of the problem. In section 1.3, the study objectives are outlined. In section 1.4, the operationalization of study hypotheses is explained, section 1.5 explains the justification for the study and finally section 1.6 explains the scope of the study.

1.1 Background of the Study

Commercial banks play an important role as financial intermediaries for savers and borrowers in Kenya. According to Ahmed and Karunditu (2010), commercial banks in the country disbursed over US$10 billion in loans. Non-formal financial institutions served the remainder of the loans market. These included credit union/SACCOs, which disbursed US$2 billion in loans, and micro finance institutions (MFI), which managed only US$300 million. Oloo (2009) described 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.

Operational efficiency is narrowly defined as the ability to deliver products and services cost effectively without sacrificing quality (Allen and Rai, 1996). It can also be defined as what occurs when the right combination of people, process, and technology come together to enhance the productivity and value of any business operation, while driving down the cost of routine operations to a desired level (Shawk, 2008). The result is that resources previously needed to manage operational tasks can be redirected to new, high-value initiatives that bring additional capabilities to the organization. Relatively firms that are more efficient tend to maintain more stable levels of output and operating performance compared to their industry peers (Mills and Schumann, 1985).

The Kenyan banking sector comprise of the Central Bank of Kenya, as the regulatory authority, Commercial Banks, Non-Bank Financial Institutions, Forex Bureaus and Deposit Taking Microfinance Institutions as the regulated entities. Commercial Banks and Mortgage Finance Companies are licensed and regulated under the Banking Act, Cap 488 and Prudential Guidelines issued there under. Deposit Taking Microfinance Institutions on the other hand are licensed and regulated under the Microfinance Act and Regulations issued there under. Foreign Exchange Bureaus are licensed and regulated under the Central Bank of Kenya Act, Cap 491 and Foreign Exchange Bureau Guidelines issued there under. Commercial banks are the dominant players in the Kenyan Banking system and closer attention is paid to them while conducting off-site and on-site supervision to ensure that they comply with the laws and regulations. Figure 1.1 shows the structure of the banking sector of Kenya as at December 2011.

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 encouraged foreign banks to enter and expand their operations in the country (Mwega, 2009). Kenya's financial sector is largely bank-based, as the capital market is still considered narrow and shallow. Banks dominate the financial sector in Kenya and as such, the process of financial intermediation in the country depends heavily on commercial banks (Olweny, 2011). Oloo (2009) described the banking sector in Kenya as the bond that holds the country's economy together. Sectors such as the agriculture and manufacturing virtually depend on the banking sector for their very survival and growth.

Whilst the Kenyan banking sector is the largest in terms of assets in the financial services industry, it is not the largest supplier of credit (Ahmed and Karunditu, 2010). The performance of the banking industry in Kenya has improved tremendously over the last decade, since only two banks have been put under CBK statutory management compared to 37 bank-failures between 1986 and 1998 (Mwega, 2009). However, in the same period the level of interest rates have remained high implying an attempt of commercial banks to pass their inefficiencies to consumers. This could be attributed to the inability to push their operational costs downwards.

According to CBK Supervisory report (2011), growth in banking sector is attributable to adoption of cost effective delivery channels to enhance access to banking services, adoption of ICT by banks, which continues to enhance efficiency of their operations. CBK committed to initiating policies to promote financial inclusion, use of agent banking model to increase provision of banking services and creation of Credit Reference Bureaus (CRBs) to enable borrowers to access loans based on information capital on competitive

terms. Consequently, the banking sector ratio of deposit account holders to number of staff continued to improve over the years as shown in table 1.1. Table 1.2 shows the Growth in Total Assets and Pretax Profits over years, which are largely attributed to increase in loans, advances, and fees from innovative products introduced by several institutions.

Table 1.1: Growth in Deposit Account Holders to Number of Staff

Year	No. of Deposit Account Holders	Number of Staff	Ratio of Deposit Holders/Staff
2006	3,329,616	15,507	215
2007	4,123,432	21,657	190
2008	6,428,509	25,491	252
2009	8,481,137	26,132	324
2010	11,881,114	28,846	412
2011	14,250,503	30,056	474

Source: CBK, 2011

Table1.2: Net Assets and Profitability Growth in the Kenyan Banking Sector (2002-2011)

Year	Total Kshs. Assets (Trillion)	Percentage Increase	Pretax Profit (Billions)	Percentage Increase
2002	0.57	12.0	15.1	7.6
2003	0.63	10.1	19.0	26.1
2004	0.75	18.2	20.7	9.0
2005	0.95	26.6	25.5	23.2
2006	1.18	24.2	36.3	42.4
2007	1.35	14.4	48.3	33.1
2008	1.68	24.4	74.7	54.6
2009	2.02	20.2	89.8	20.2
2011	0	2	5	5

Source: CBK, 2011

Although Kenya's financial system is by far the largest and most developed in East Africa and its stability has improved significantly over the past years, many challenges remain. Beck *et al* (2010) assessed the stability, efficiency, and outreach of Kenya's banking system, using aggregate, bank-level, and survey data. They found that banks' asset quality and liquidity positions had improved, making the system more resistant to shocks, and interest rate spreads had declined, in part due to reduction in the overhead costs of foreign banks. Outreach remained limited, but had improved in recent years, driven by mobile payments services in the domestic remittance market.

According to the Banking Survey Results (2010), market risk (in this context, comprising of equity risk, interest rate risk, currency risk and commodity risk) was the risk facing most institutions, having been identified as a principal risk by all banks (100%), followed by credit and operational risks which were identified by 95% and 93% of respondents

respectively. In the 2004 survey, credit risk was the most widely identified risk (97% of respondents). The 2010 survey's results still showed that credit risk was still significant as it was in the earlier survey. This may be attributed to the large proportion of banks' asset portfolio made up of loans and advances to customers. The key challenges faced by the institutions during formulation and implementation of the risk management function were the lack of the appropriate risk management policies, lack of adequate, skilled manpower, lack of appreciation by the rest of the organization, of the role played by the Risk Management function, and inadequate management information systems (CBK 2011).

According to the Deposit Protection Fund Board (DPFB) report, operating efficiency was one of the most critical risks faced by financial institutions in Kenya and Kenyan banks were yet to adopt model-based approaches in assessing their operating efficiency (Central Bank of Kenya, 2011a). According to Mwega (2009), competition is one of the most important and fundamental issues in the financial services sector, with competition hypothesized to stimulate productivity growth either by general technical progress or by efficiency improvement, or both. However, competition exacerbates the moral hazard problem of financial institutions, especially banks, so that the issue of competition in the financial services sector carries key implications for productive efficiency, financial stability and for the effective regulation and supervision of the financial services sector.

Kenya has historically encouraged foreign banks to enter and expand banking operations in the country. The difference between foreign and local banks may be due to technology and ease of technology transfer as well as better managerial skills since foreign banks are generally multinational companies. Mwega (2009) also attributed the relative efficiency

of foreign banks to the fact that these banks mainly concentrate in major towns and target corporate customers, whereas large local banks spread their activities more widely across the country. Foreign banks therefore refrain from retail banking to specialize in corporate products while large domestic banks are less discriminative in their business strategy. These different operational modalities affect operational efficiency of the banks.

1.2 Statement of the Problem

Banks, especially in-developed countries are in search of new management tools to improve their performance. Most frequently, they have tried to achieve this by improving cash management and offering new services that attract additional funds. Management of operations has been usually a secondary concern, partly because it has been considered, for some reason, to be less critical to profitability (Said, 2012). The importance of operating efficiency for banks was recently put into test by a study done on Indian scheduled commercial banks (Siraj and Pillai, 2011). Its findings were that key determinants of operational efficiency were affected by the global financial crisis. This reinforces the need to understand the drivers of operational efficiency for proper management of commercial banks.

Despite the growth in the Kenyan banking sector, the sector still faces many challenges with respect to management of risks that banks are exposed to. Risk-taking is an inherent element of banking and, indeed, profits are in part the reward for successful risk taking in business. On the other hand, excessive, poorly managed risk can lead to losses and thus endanger the safety of a bank’s deposits. The types and degree of risks a bank may be exposed to depend upon a number of factors such as its size, complexity of business

activities and volume. According to CBK report (2011), the most common risks in financial institutions were; strategic risk, credit risk, liquidity risk, interest rate risk, foreign exchange risk, price risk, operational risk, reputational risk and compliance/regulatory risks. The management of financial institutions should attach considerable importance to improve the ability to identify measure, monitor and control the overall levels of risks undertaken. Sound risk management systems enable managers to take risks knowingly, reduce risks where appropriate and strive to prepare for a future that cannot be predicted with absolute certainty. Operating efficiency model based on bank specific performance indicators is intended to offer one approach to risk management in the banking sector.

A few studies, Barako and Brown (2008), Waweru and Kalani (2008), Nyangosi and Singh (2009), Beck *et al* (2010), Ndung'u and Ngugi (2010), on the Kenyan banking sector have addressed issues of corporate governance, evolution of e banking and profitability among others. However, no study has examined operating efficiency of commercial banks in Kenya, yet it is paramount for the sector to operate efficiently. Analysis of the determinants of banks' operating efficiency intended to offer an insight to managers on one of the approaches to risk management in the banking sector. This thesis examined the effect of bank specific performance indicators on operating efficiency of commercial banks in Kenya. Measuring the efficiency levels of individual banks is usually the first step. After all, understanding the determinants behind the differences among banks' operating efficiency levels is more interesting.

1.3 Objectives of the Study

1.3.1 General Objectives

The general objective of this study was to evaluate the determinants of operating efficiency of commercial banks in Kenya using bank specific performance indicators, and to evaluate if there were any structural statistically significant differences between the high market share banks and the low market share banks.

1.3.2 Specific Objectives

This study endeavored to achieve the following specific objectives:

(i) To determine how capital adequacy affects operating efficiency for commercial banks.

(ii) To evaluate how credit risk affects operating efficiency for commercial banks.

(iii) To evaluate how liquidity affects operating efficiency for commercial banks.

(iv) To establish how profitability affects operating efficiency for commercial banks.

(v) To determine how asset quality affects operating efficiency for commercial banks.

(vi) To establish the existence of statistically significant structural difference between low market share banks and high market share banks.

1.4 Study Hypotheses

Ho_1 Capital adequacy has no statistically significant effect on operating efficiency for commercial banks.

Ho_2 Credit risk has no statistically significant effect on operating efficiency for commercial banks.

Ho_3 Liquidity has no statistically significant effect on operating efficiency for commercial banks.

Ho_4 Profitability has no statistically significant effect on operating efficiency for commercial banks.

Ho_5 Asset quality has no statistically significant effect on operating efficiency for commercial banks.

H_{O6} There is no statistically significant structural difference between low market share banks and high market share banks.

1.5 Significance of the Study

Operating efficiency of banks as well as market competition in the banking industry, have been regarded as crucial areas in contemporary public policy concerned with a country's economic development. Empirical analysis of determinants of operating efficiency for banks and their market share index position is a vital requirement for further policy changes. Accordingly, this study is important in the following aspects.

First, improvements in operating efficiency and performance in financial institutions are a vital requirement for providing a more efficient system of asset allocation in the financial services sector. Since Kenya is a bank-led financial services sector, efficiency and performance in firms in the banking industry are more important for providing supportive financial infrastructure for economic development. Improvements in operating efficiency may reduce the cost of intermediation, which directly affects the intermediation margin in the market.

Secondly, this study addresses a contemporary policy issues in relation to bank operations. It examines how bank performance indicators (measured by capital adequacy, credit risk management, liquidity risk management, profitability and asset quality) can explain change in operating efficiency of banks. This type of analysis is essential in providing evidence for policy changes related to market competition.

Thirdly, the study expands on the available literature on banking research in developing countries and particularly in Kenya. The study contributes to the literature that seeks to explain banks' operating efficiency. The role played by market structure and institutional factors, which are perhaps important to understand for Kenya as it adopts major banking

reforms. This is supported by the fact that emerging countries are known for highly inefficient banking sector, resulting in losses to financial development and stability. Thus, research in different regions with different environmental and economic factors, may help regulators and managers achieve an efficient banking system. The study also offers new insights to policy makers, bank managers and practitioners on the relevance of a number of driving factors of bank operating efficiency that might help them to improve the performance of the banking system and enhance the quality of services provided. Furthermore, the study enables banks to have a model-based approach in addressing risks that face them.

1.6 Scope of the Study

This study makes use of bank specific factors to analyse the factors that influence the operating efficiency of commercial banks in Kenya. Evidently, external factors do affect operating efficiency of banks such as inflation, exchange rates fluctuations, political instability and global financial crisis. However, the effect of such variables on the banks' performance is uniform to all banks and therefore makes them statistically not viable for analysis especially when the tool of analysis is banks operating in the same economy. Commercial banks operating in Kenya for the period 2005 – 2011 were analysed for purposes of this study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter reviews literature related to the banking sector performance indicators and efficiency. The issues highlighted in this chapter are used to explain the trends and relationships in the estimated efficiency ratios. The chapter is organized in the following manner; section 2.1 discusses the concept of risk management and operational efficiency in commercial banking, followed by section 2.2 theories and models of operating efficiency, section 2.3 financial sector reforms in Kenya and section 2.4 market structures in the Kenyan-banking sector. Section 2.5 discusses the bank specific performance indicators of operating efficiency, while section 2.6 discusses the measurements of operating efficiency for banks. Section 2.7 presents the conceptual framework of the study and finally, section 2.8 summarizes the critiques and research gaps.

2.1 Operational Efficiency in Commercial Banking

According to Awojobi and Amel (2011), risk management involves risk identification, risk measurement (and quantification), and mitigation. However, the perception of what constitutes risk to a firm may differ from institution to institution, time to time, and industry to industry. The etymology of the word “risk” can be traced to the Latin word “Rescum” meaning Risk at Sea or that which cuts (Raghavan, 2003). Risk simply implies a possibility of unexpected outcome. It creates the notion that future events may have some degree of uncertainty, thereby exposing an institution to adversity. From Emmett’s (1997) definition, it is clear that risk is a condition of the real world; it emanates from an undesirable event. Undesirable event in this context is described as an adverse deviation from a desired outcome that is expected and hoped for.

Ozturk (2007) defines risk management as the process by which managers satisfy their risk taking needs by identifying key risks, obtaining consistent, understandable, operational risk measures, choosing which risks to reduce and which to increase and by what means, and establishing procedures to monitor the resulting risk position. In other words, risk management is the process of assessing operational dangers of a particular position, measuring its magnitude,

and mitigating such exposures in order not to deter the institutional goals of the banking firm.

All profit-maximising firms, including banks, consider operational miscalculation, which could be because of macroeconomic risks, such as the effect of interest rates, inflation or even business cyclicality. In addition, microeconomic risks like new competitive threats are inevitable and should be dealt with adequately (CBK, 2011). Bank-wide issues such as technological failures, commercial inefficiency of a supplier or customer, political manipulation, X-inefficiency and natural disaster are possible risks faced by banks and other financial institutions. Furthermore, the debacle in the financial and non-financial sectors as a result of the contagious subprime crisis in US is a strong indication of the need for risk management. According to Pyle (1997), financial misadventure is not really a new phenomenon but the rapidity of economic downturn caused by this, has necessitated the need for integrating an efficient risk management system. The past few decades witnessed growing interest of experts in the field. While some writers instituted an argument of what kind of risk management model should be adopted by deposit taking financial institutions, others have suggested more stringent regulatory options.

Efficiency in banking sector has been defined and studied in different dimensions including scale efficiency, which refers to relationship between the level of output and the average cost; scope efficiency, which refers to relationship between average cost and

production of diversified output varieties. Operational efficiency is a wide concept sometimes referred to as x-efficiency, which measures deviation from the cost efficient frontier that represents the maximum attainable output for the given level of inputs. With reference to various definitions, inefficiency is therefore a multifaceted concept with several meanings depending on the perspective in which it is used (Nigmonov, 2010).

According to Santos (2000), a commercial banking system is an intermediate financial institution for borrowers and savers. Banks generate profit through the spread between the interest rate depositors receive, the interest charged for loans, and fees on different products that banks offer to their customers. Commercial banks are characterized by routinely charging interest, which is a major source of bank revenue. Bank customers do not share losses with banks (Ariff *et.al.* 2008). Bankers ask for guaranteed collateral in most transactions. They tend to be highly capitalized, spread risk widely and make use of highly developed financial technologies, (Santos, 2000).

Efficiency in intermediation of funds from savers to borrowers enables allocation of resources to their most productive uses. The more efficient a financial system is in such resource generation and in its allocation, the greater its contribution to productivity and economic growth. Hence, an efficient financial intermediation system is a prime requirement for a country's economic development. The foremost reason is that commercial banks play an important role as financial intermediaries. Banks are the parties that channel funds from those who have excess funds to those who have productive needs for those funds. Therefore, their operating efficiency indirectly affects the whole country's economy, operation and wealth. Beck *et al*. (2000) noted that banking efficiency was essential for a well-functioning economy and that; banks exert a

first-order impact on economic growth and development. Banks operate efficiently by directing society‘s savings toward those enterprises with highest expected social returns and monitoring them carefully after lending society‘s scarce resources to ensure they are allocated more efficiently. This in turn promotes economic growth. By contrast, banks that simply operate with waste and inefficiency will slow down economic growth and reduce society‘s economic welfare. Arun and Turner (2004) argued that the importance of banks is more pronounced in developing countries because financial markets are usually underdeveloped, and banks are typically the only major source of finance for the majority of firms and are usually the main depository of economic savings (Athanasoglou *et al.*, 2008).

Most of the studies done on bank efficiency have focused on developed countries (US and Europe, in particular). Research on developing countries is a recent phenomenon, partly due to the low level of financial development, small number of banks, limited market activities, and lack of quality data. However, it is worth noting that some middle-income countries in Africa, for example Kenya, have developed relatively complex financial systems, with commercial banks as the core financial intermediaries. The availability of data for these countries has made it possible to understand how banks operate, and to investigate the major factors that can determine their operating efficiency. Studies in this area focused on performance in banking sector in general and did not consider individual bank specific factors that affect their performance. Studies have also tended to look at efficiency differences based on ownership structure and size of banks. Examples include Hassan (2002), Matousek and Taci (2005), Hauner (2005), Mostafa (2007), Ariff and Can (2008), Fathi (2010) and Said (2012). There is need to further study

this area to propose models to improve the efficiency of the banking sector (Siraj and Pillai, 2011).

The changing dynamics of banking activities, the subjected environments within which banks operate, and the volatility of the world economy imply that risk analysis and management must also adjust with time (McNamee, 1997). Risk management is becoming more complicated with the trend towards an integrated global financial system. It is a course at the center of financial intermediaries' operations, which entails identifying, measuring, and managing risks to ensure that; individuals understand the intrigues of taking and managing risks, risk exposure of an institution is within an acceptable limit defined by the regulatory body. Risk taking decisions of an institution is in line with the business strategy and defined objectives of the Board of directors. Risk taken is worth its accruable benefits and is to the best interest of the institution. Sufficient capital is available to cushion for possible losses from taking a risk. This study offers an operational efficiency model that bank managers may apply in management of risks that banks are exposed to.

2.2 Theories and Models of Operating Efficiency

2.2.1 Conventional Economic Efficiency Theory

The conventional economic efficiency theory formed the basis of the present studies on efficiency performance of banks. According to Aly *et.al*, (1990), the theory stipulates that

companies should achieve their output at the lowest possible cost per unit produced. Based on the theory, optimal production can be achieved by economies of scale, and a perceptible benefit is repeatedly counteracted by more costs associated with overstressing the existing systems. In the short run, the situation of maximum operational efficiency is attained at the level of output at which all accessible economies of scale are taking advantage of such efficiency. In the long run, lifting the capacity of existing systems can increase the optimal level of productive efficiency (Zerbe, 2001). The conventional economic efficiency theory is decomposed into allocative (price) efficiency criteria and the productive (technical) efficiency criteria.

The allocative efficiency criterion states that high levels of competition between banks should preclude them from making extreme profits by raising their selling prices to an irrational level above their marginal costs. Maximum allocation efficiency is reached when the business produces the optimal output of a combination of goods and services to maximize the benefit to the business as a whole (Aly *et. al,* 1990). The theory takes into account the fact that business resources are finite and can be utilized only at a time, with the result that using a quantity of material once involves an opportunity cost preventing the business from using the same material for another purpose (Said, 2012). Allocative efficiency is accomplished only when no other pattern of utilization of resources can deliver an enhanced overall outcome in terms of the welfare of all interested parties. Such outcome represents the point of highest allocative efficiency at which improvements in one type of use can only be achieved at the expense of losses elsewhere. This effect is occasionally referred to as the Pareto optimal allocation of resources (Isik and Kabir, 2002). The theory provides a basic context for understanding a variety of factors

associated with existing operating costs of the business (Zerbe, 2001). The allocative efficiency criteria theory is fundamental to this study in a sense that for banks to operate at efficient level, then all bank products have to be optimally priced. This in turn reduces unfair competition in the market and as well, as interest rate spreads.

The productive efficiency (technical efficiency) takes place when the business employs all of its resources efficiently, producing the most output from the least input (Miller *et. al*, 1996). The recognition of the main principles of this theory can help managers find methods to make some components of their business more efficient (Quinzi & Sujaya, 1993). Many researchers have employed the theory of conventional economic efficiency to measure efficiency in banking systems (Sathye, 2001; Barr, *et al* 2002; Saad & El-Moussawi, 2009; Said, 2012). Differences in relative economic efficiency across firms of different sizes and organization can be hypothesized and tested within this framework. A firm is more technically efficient if it consistently produces more output from the same quantities of measurable inputs than some other firm does. Differences in economic efficiency among firms may be caused by differences in technical and/or price efficiency. Such differences are reflected in the values of the actual profit functions of the firms at a given output and input prices and quantities of fixed inputs, given competitive markets for inputs and outputs (Isik and Kabir, 2002). The firm with higher profits is more economically efficient but within a given range of prices (Mullineaux, 1978).

2.2.2 The Regulatory and Efficient Market-Monitoring Hypothesis

According to the regulatory hypothesis, regulators encourage banks to increase their capital to commensurate with the amount of risk taken by them. The increase in capital to

march the risk rises may come from efficient market monitoring, when capital positions are deemed inadequate (Calomiris and Kahn, 1991; Berger, 1995). Therefore, an important factor contributing to a positive relationship between capital adequacy and credit risk to banks efficiency relates to the actions of regulators and supervisors (Shrieves and Dahl, 1992; Jacques and Nigro, 1997; Aggarwal and Jacques, 1998; Editz *et al.*, 1998). Banks could respond to regulatory actions forcing them to increase their capital by increasing asset risk (Kahane 1977, Koehn and Santomero, 1980 and Kim and Santomero, 1988. According to Gorton and Rosen (1995), in an unhealthy banking industry (more prone to moral hazard), entrenched managers tend to take on more risk rather than less risk. Under an environment in which increased competition is expected, managers who normally have better information on the quality of the portfolio (asset) might have a larger degree of manoeuvre from stakeholders to follow an expansionary strategy, which ex post could be shown to be excessively risky.

An alternative hypothesis, however, suggests a negative relationship between capital adequacy and credit risk management and argues that banks have incentives to exploit existing flat deposit insurance schemes. This ‘moral hazard hypothesis’ may become particularly relevant when the leverage and risk position of banks are already high, suggesting that banks would increase their risk positions as capital declines. The direction of causality that explains the moral hazard hypothesis could also flow from capital to risk and can be derived from the (unintended) consequences of regulatory actions. A closely related extension to the moral hazard hypothesis could arise due to the existence of relevant agency problems between owners and stakeholders. In the framework of these two hypotheses, as suggested by Hughes and Moon (1995) and Hughes and Mester

(1998), capital and risk are also likely to be influenced by the level of efficiency of the banking firm. From a regulatory perspective, and other things being equal, regulators may allow an efficient bank with better management probably more room for leverage. On the other hand, from a moral hazard point of view, a less efficient firm may be tempted to take on higher risk to compensate for the lost returns. Efficiency could also be affected by the level of bank risk (Berger and De Young, 1997). For instance, managers who are not very efficient at assessing and monitoring loans are not likely to be very efficient in achieving a high level of operational efficiency.

Finally, a bank may choose to maximize short-term profits by reducing the funds devoted to allocating and monitoring loans. This, other things being equal, would boost both efficiency and risk measures, producing (in the short term) a positive relationship between risk and efficiency. Prior literature examining the determinants of banking risk takes into account the fact that capital and risk are both determined contemporaneously (Shrieves and Dahl, 1992; Jacques and Nigro, 1997; Rime, 2001a). In addition, capital and risk may also be simultaneously determined by the level of efficiency of the banking firm (Kwan and Eisenbeis, 1997; Hughes and Moon, 1995; Hughes and Mester, 1998). Hence, capital, risk and efficiency are all related. Altunbas *et al*. (2007), suggested that, any empirical approach that is used to model the relationships between capital and risk also needs to take account of bank efficiency. From the foregoing discussions, it is clear that the previous studies focused on how efficiency was likely to influence level of capital and risk management, while this study focus was to analyze how capital adequacy and credit risk influences operational efficiency of banks.

The proposition of the information asymmetry theory emphasizes that lack of information about customers, can exacerbate the problems of moral hazards and adverse selection, and as such can decrease the quality of bank loans (Aryeetey *et al.*, 1997). It became very difficult for banks to separate the lemons from the plums, since the failure of any of the underlying securities exposed borrowers to a high risk of default. The need to control the high incidence of loan default occasioned by increased lending activities has been a popular motive for reforms in financial systems in developing economies. According to Gorton and Winton (1998), early reforms in majority of the emerging economies were influenced by the existence of large percentage of bad loans and risky credits. Given the above, it is evident that information about customers is critical in achievement of optimal risk management and therefore optimal operating efficiency. Kenya is one of the emerging economies and information asymmetry is a major challenge that bank managers are faced with when it comes to risk management.

2.2.3 Modern Theory of Financial Intermediation and Liquidity Transformation Hypothesis

According to the modern theory of financial intermediation, an important role of banks in the economy is to create liquidity by funding illiquid loans with liquid demand deposits (Diamond 1984, Ramakrishnan and Thakor, 1984). More generally, banks create liquidity on the balance sheet by transforming less liquid assets into more liquid liabilities. Kashyap *et.al*, (2002) suggested that banks may also create significant liquidity off the balance sheet through loan commitments and similar claims to liquid funds. Liquid banks may be more efficient in the sense that, all other things being equal, an efficient bank can produce more output part of which includes liquid and other assets.

According to Gorton and Huang, (2002), banks and banking systems that produce more liquidity than others perhaps can be viewed as both more ‘liquidity efficient’ and also less risky. According to liquidity transformation hypothesis, bank deposits can be seen as credit agreements that present high liquidity and a low risk and which are founded on their sources attracted by the bank. Banks transform the deposits made mostly for short term into medium and long-term credits. This non-correlation between the due dates of attracted deposits and the due dates of the granted credits may lead to the emergence of liquidity risk for the bank; but the larger the bank’s portfolio of assets and liabilities the lower the risk for breach of obligations. From the above literature, banks that create more liquidity are more efficient than those that create less liquidity hence a positive relationship between liquidity and operating efficiency of banks was expected.

2.2.4 The Efficient Structures and Price Hypothesis

The efficiency hypothesis challenges the basic predictions of the Structure-Conduct-Performance (SCP) paradigm, which predicts that profits, interest rates on each type of loan and service charges would be higher in a more concentrated market, while on the other hand deposit rates offered would vary inversely with concentration (Gilbert, 1984). The efficiency hypothesis posits that the relationship between market structure and performance of any firm is defined by the efficiency of that firm. In cases where a firm is highly efficient relative to the competitors, the firm can maximize profit by maintaining its current size and pricing strategy or by reducing prices and expanding its operations (Berger, 1995). If the firm chooses to expand its operations, it will eventually gain market share and thus, concentration will be a consequence of efficiency. A number of sub

branches such as the relative market power hypothesis and the efficient structure hypothesis define the efficiency hypothesis.

The relative market power hypothesis postulates that firms with large market share and well-differentiated products will be able to exercise market power when pricing their products and earn super normal profits. However, more market power in the loan market increases bank risk as high interest rates on loans result in the default of loan customer and aggravate moral hazards incentives of borrowers to shift into risks. It was also noted that, highly concentrated banking market motivate institutions to accept more risk as they believe that they are too big to fail and that they are explicitly or implicitly protected by the government safety net. This argument was well supported by recent empirical studies confirmed that the risk of bank failure rises in more concentrated markets e.g. (Boyd *et al*., 2006; Nicolo and Loukoianova 2007).

The efficient structure hypothesis on the other hand states that only the efficiency of firms can explain the positive relationship between performance and concentration or performance and market share. According to the efficient structures hypothesis, banks earn high profits because they are more efficient than others are. Firms that are more efficient are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou *et al*, 2008). In addition, larger firms can obtain lower unit cost and higher profits through economies of scale. This enables large firms to acquire market shares, which may manifest in higher concentration and profitability.

The X-efficiency argument within this branch of literature states that those firms with superior management or production technologies have lower costs and therefore higher profits. By extension, those more efficient firms will gain greater market shares, which may result in a more concentrated market (Berger, 1995). In this context, efficiency influences the level of market structure. The scale efficiency argument contends that firms may have comparable quality of management and technology, but some firms produce at a more efficient scale than other firms may, thus they have lower unit costs and higher unit profits. Such firms are assumed to acquire larger market share, which may result in higher levels of concentration. In this scenario, efficiency through an indirect process drives the market structure.

Berger (1991) applied the relative efficiency hypothesis to US banking sector data. The results indicated that once efficiency issues related to individual firms are accounted for, levels of bank cost inefficiency exert greater influence on bank performance than market concentration. In another application of the relative efficiency hypothesis, Berger et al. (1993) found that mergers and the degree of market overlap were generally statistically insignificant in explaining bank performance.

Other researchers such as Brozen (1982), Gale and Branch (1982) argued that the structure of an industry may be due to superior production efficiency of firms. This is because production efficiency allows firms to increase their market share, thus leading to higher market concentration. This suggests that it is not collusion or mergers that lead to higher or normal profits, but rather economies of scale and scope. Demsetz (1973) argued that a positive relationship between profit rates and concentration might reflect different

levels of production efficiency among firms, rather than a more effective collusion, or higher concentration in the market.

Competition in the financial sector – especially banks- is of great importance to country's economic growth. The degree of competition in the financial sector results in higher efficiency of financial services, better quality of financial products and improves the degree of financial innovation. The access of firms and households to financial services is influenced by the degree of competition in the financial sector (Classens and Laeven, 2004). Besanko and Thakor (1992), confirmed that governments could achieve the desired economic growth rate by encouraging banking sector competitiveness. An examination of studies related to market structure and competition in banking sector provides unclear factors, which have greater weight in terms of determining bank performance. Apart from examination of the determinants of bank's operating efficiency, this study went further to evaluate if differences in market share index position of banks has any effect on the determinants of banks' operational efficiency. An efficient banking sector is one that is able to absorb negative shocks and enhance financial system stability.

2.2.5 Portfolio Theory and the Portfolio Balance Model of Asset Diversification

The emphases of past studies on banking efficiency were more on the relationship between capital and risk and bank lending activities. Little attention was paid on how increased lending by banks affects the quality of their assets and therefore the operating efficiency of banks. Some of the empirical studies on this area delve indirectly into the

issue of quality of lending (Berger and Udell, 1996). Such works dealt with whether the involvement of banks enhanced or reduced levels of operational efficiency among the affected banks. According to Ezeoha (2011), sound regulatory structures ensure adherence to laid down rules, guide the corporate governance behaviors of banks, and specially moderate the conducts of bank managements.

Loans and advances to customers is a major component of total assets for banks. However, banks may have a diversification of assets with the aim to produce superior return, performance and/or greater safety for banks. For this, the portfolio theory approach is the most relevant and plays an important role in bank performance studies (Nzongang and Atemnkeng, 2006). According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors. Such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Nzongang and Atemnkeng, 2006). Hence, from the above discussion, it is evident that asset quality has a positive relationship with operating efficiency of banks.

Vilfredo Pareto set a condition for efficiency that: if there is a change that makes at least one individual better off without making any one else worse off, that change is efficient (Debreu, 1959; Varian, 1992; Schenk, 2004). Shephard (1953, 1970) first established the

relationship between cost function and production function, which underlines efficiency assessment, with assumption of theoretically known efficiency. According to Lionel *et al* (1973), Management must attain some minimum level of profits required by the stockholders. Although the managers need not know the exact value of this minimum profit, it is assumed that they view it as at least not being greater than what could be obtained if the managers acted absolutely as profit maximizers.

Bank efficiency has long been a subject of many studies. Most of the studies have focused on developed countries (US and Europe, in particular). Research on developing countries is a recent phenomenon, partly due to the low level of financial development, small number of banks, limited market activities, and lack of quality data. According to Jemrić and VujČić (2002), there are questions which continue to dominate financial sector discussions in developing countries; for example, the ability of small banks existence in the era of globalization and banking market consolidation and the usefulness of allowing new banks to enter into the market. The existence of small banks will depend on many factors including how efficiently the banks are managed and how efficient the market is. This study attempts to come up with a model-based approach to risk management, which will increase the chances of existence of small banks if applied appropriately.

Many studies on commercial banks performance examined the relationship between efficiency and bank ownership. A general finding is that foreign banks are more efficient than or at least as efficient as private domestic banks. Berger, *et al* (2004) found foreign banks to have the highest profit efficiency, followed by private domestic banks, and then state-owned banks in a sample of 28 developing countries. For cost efficiency, private

domestic banks rank higher than foreign banks. Claessens, *et al* (2004) found that countries with a higher share of foreign banks experience lower average margins, and foreign bank entry impose competitive pressure with resulting efficiency gains. Bonaccori and Hardy (2005) found that foreign banks are more profit efficient than private domestic and state-owned banks in Pakistan, but share similar average cost efficiency.

From the literature, there is evidence of relationship between a sound intermediation process and efficiency in the banking system (Horward and Haynes, 2001; Vittas, 1991; Kenny and Moss, 1998). Lindley *et al.* (2000), explains the circumstances of low banks' capacity in the context of huge deposits inflow (excess liquidity) that overwhelms the ability of banks to produce income-earning assets. Under certain conditions as explains Baltensperger (1972), reserves adjustment is closely related with the optimal bank production position (efficiency). With reference to scale efficiency, and the presumption of negligible low reserve adjustment cost, he argued that a large bank will be more often profitable to adjust its reserves towards the optimal level, and it will on average, stay relatively closer to its optimal position than a small bank. From the literature, it is clear that size affects performance of a bank. Similarly, excess liquidity level negatively affects the earning power of a bank. This study considered market share index and total assets of a bank as measure of size differences between banks. This study also examined the effect of capital adequacy, credit risk, liquidity risk, profitability and asset quality on operating efficiency of banks.

2.3 Financial Sector Reforms in Kenya

The operations of commercial banks in emerging economies are highly regulated due to the role they play in the general growth and development of the economy. Operating efficiency of banks is therefore paramount for existence of strong financial systems of the economy. Studies on the impact of regulations and supervision of banks on their performance have found negative relationships between the two. For example, Barth, *et al* (2004) found that restrictions on banking activities tend to reduce banking sector efficiency. Demirgue-Kunt, *et al* (2004) found that tighter regulations on bank entry and bank activities were associated with higher net interest margins and a higher cost of financial intermediations. Gonzales (2005) reports that stricter regulations could increase bank's risk-taking incentives by reducing their charter value and, thus, harms the stability of the banking system. The Kenyan banking sector is highly regulated and supervised by the government through CBK. The regulator has set minimum operational requirements for banks to operate and which are aimed at safeguarding the interest of depositors and fair market for all banks.

Other studies use efficiency changes to understand the impact of financial sector reforms. Hauner and Peris (2005) in a study of Ugandan banks found that efficiency levels were higher after privatization and consolidation in the banking sector and, on average, larger banks and foreign-owned banks are more efficient. Bonaccorsi and Hardy (2005) found increases in efficiency in terms of both revenue and costs after the financial sector reform in Pakistan, which meant that the benefits of reform were passed on to consumers. Isik and Hassan (2003) found that bank efficiency improved considerably after the financial liberalization during 1981-90 in Turkey. From the literature, we may state that banking is

a delicate sector because it is easily affected by changes in economic and social variables and which end up affecting their performance. This study looks at performance of banks over a seven-year period (2005-2011). The intention is to capture any economic changes that occurred in the cause of the seven-year period.

Financial sector reforms in Kenya have strengthened the banking sector in the last decade or so, in terms of product offerings and service quality, stability and profitability. Some micro-finance institutions like K-Rep Bank and Equity Bank emerged, targeting the small-scale borrowers. Equity Bank, which converted to a commercial bank in 2004, had over 2 million customers in 2008, more than 35 per cent of the entire industry. During this period, only two banks were put under CBK statutory management (Prudential Bank and Charterhouse Bank), in comparison to the 1980s and early 1990s when a large number of banks collapsed. According to Mwega, (2011), The Kenyan banking system seems poised to withstand the global financial and economic crisis, unless overcome by pure contagion, as the fundamentals seem quite sound.

CBK bank supervision reports provide the following summary of the developments and stylized facts of the Kenyan-banking sector in the last decade or so: There has been a shift of focus to the consumer with the introduction of some new retail products. There has been major expansion of lending to individuals in salaried employment through mortgages and consumer loans. There has been an aggressive expansion into the retail-banking sector by several banks not previously active, such as Kenya Commercial Bank, Co-operative Bank and Equity Bank. Banks have expanded their branch networks to capture lower cost retail deposits. Several banks (including foreign banks) are now favorably looking at public sector lending because of improved governance. The

establishment of commercial courts improved the lending environment and reduced the time taken to resolve default cases (CBK Report, 2011).

There was a concentration of banks in the urban areas and the rural areas were under-served. Banks had not attempted to mobilize the unbanked majority, with only 19 per cent of adult Kenyans accessing bank services (Beck, 2010). There had been a reluctance to lend to small and medium-sized enterprises (SMEs), although some banks like Equity and KCB were going against this pattern. Industry fragmentation was high, with banks neither working together nor being fully open with each other. There had been an over-emphasis on the use of collateral. Historically, banks had placed a major emphasis on physical security. On the corporate side, they had often overlooked cash flows and the viability of projects. This was changing with a growth in unsecured lending. Islamic banking rapidly took root in the Kenyan market. Some banks had launched strictly Islamic products and this was likely to increase competition in the banking sector. Four banks so far—Barclays Bank of Kenya, Kenya Commercial Bank, K-Rep Bank and Dubai Bank —had introduced Islamic banking products in the market by 2007 (CBK Report, 2011).

According to CBK Report, (2011) the reduction of the cash ratio from 10 per cent to 6 per cent in 2003 increased the liquidity of the banking system, inducing a reduction in lending interest rates. Low lending rates undoubtedly led to increased economic activity, with economic growth accelerating from 2.9 per cent in 2003 to 7.0 percent in 2007. In order to increase their profitability, some banks moved into housing and consumer lending thus exposing themselves to the burst of the bubble in real estate markets or to the risk of a potential increase in the level of household indebtedness. In Kenya, however,

only about 5 per cent of banking system's credit went to real estate over 1997–2008 with a declining trend, an average of 6 per cent to private households with an increasing trend; and 2 per cent to consumer durables with an increasing trend (CBK Report, 2011). Banks may also have moved into new lines of business like securities investment, and by doing this have increased their exposure to new types of market risk such as a potential sudden fall in share prices. All this reforms and trends in the banking sector call for a model based approach to risk management. This study will attempt to provide an operating efficient model that managers may use to manage such risks.

2.4 Market Structure in the Kenyan Banking Sector

The relationship between market structure and operational efficiency of banks is not so clear –cut. Dabla-Norris and Floerkemeier (2007) studied the Armenian banking system over 2002-2006 periods, and found that banks with higher market power had net interest margins, and high concentrations in loan and deposit markets as well as a positive effect on both interest spreads and net interest margins. Beck and Hesse (2006) found that in Uganda during 1999-2005, market structure played a limited role in determining bank efficiency, and structural impediments were more significant in lowering spreads and margins. Demirgue-Kunt, *et al* (2004) found no robust association between bank concentration and interest rate margins. From the literature, it is clear that economic differences among countries affect performance of banks differently. This study analyzes the operating efficiency of banks operating in Kenyan economy and therefore eliminates the economic differences of different countries.

Jemrić and VujČić (2002) measured relative efficiency of banks in Croatia for the 1995–2000 period using Data Envelopment Analysis (DEA). They found that foreign-owned banks were the most efficient; new banks were more efficient than old banks; small banks were globally more efficient, but large banks were found to be locally more efficient. Looking at banks in the face of financial liberalization in transition economies, the sector experiences an unprecedented consolidation through mergers and acquisitions. Maggi and Rossie (2003) suggest that the only way to lower costs in the banking industry is to improve x-efficiency instead of paying close attention to cross border mergers and acquisitions. While other studies looked at efficiency in terms of foreign owned and locally owned banks, this study looks at efficiency of banks from the point of view of high market share-index banks and low market share-index banks. This approach considered competition in the market as it is critical in this sector and if there exists any statistical difference between the two groups in terms of their operational efficiency.

Competition in the financial sector – especially banks- is of great importance to country's economic growth. The degree of competition in the financial sector results in higher efficiency of financial services, better quality of financial products and improves the degree of financial innovation. The access of firms and households to financial services is also influenced by the degree of competition in the financial sector (Classens and Laeven, 2004). Besanko and Thakor (1992) confirmed that governments could achieve the desired economic growth rate by increasing banking sector competitiveness.

According to Olweny and Shipho (2011), bank competition can be measured by structural and non-structural approaches. The structural approach constitutes a natural link between concentration and competition (Bikker and Haaf, 2000). It includes two models. The first

model is the structure-conduct-performance paradigm and the second model is efficiency hypothesis. The former model states that market performance is greatly affected by exogenous factors related to market structure, explicitly basic demand and supply condition, which affect banks' performance in the industry. It is used to test whether higher level of concentration in the market causes collusive behavior among the larger banks and thus results in superior performance (Gilbert 1984; Molyneux, Lloyd-Williams *et al*. 1993). The latter model , (Demsetz, 1973) and (Peltzman,1977) investigated the relationship between market structure and performance through claiming that highly efficient banks gain market share by reducing prices due to their profit maximizing behavior (Berger, 1995). That is, market concentration resulted from the superior efficiency of leading banks. This study considered competition among banks by determining the market share index of each bank for every year under consideration.

On the other hand, the non-structure approach states that competition can be measured directly without using the relationship between structure, conduct and performance. Competition under non-structure approach can be measured using factors such as revenue behavior, risk profiles and entry and/or exit barriers. Two non-structure measures of competition, namely the Bresnahan model and the Panzar and Rosse approach were developed. The former states that the general market equilibrium model is used in the essence that profit-maximizing firms will achieve equilibrium by choosing prices and quantities that equate marginal costs to their perceived revenues. This ultimately agrees with the demand price under perfect competition (Bresnahan, 1989). The alternative approach uses bank – level data to investigate the extent to which a change in factor input prices is reflected in (equilibrium) revenues earned by a specific bank (Panzar and Rosse,

1987). Under perfect competition, an increase in input prices raises both marginal costs and total revenues by the same amount as the rise in costs. This is not the case under monopoly where increases in input prices increases marginal costs, reduce equilibrium output and thus reduces total revenues.

Two strands in the literature have discussed bank competition and financial stability. The traditional view of competition–fragility stating that high bank concentration erodes market power, resulting in lower profit margins and accordingly reduces banks' franchise value that encourages bank risk taking to increase return (Jimenez *et al.* 2010). The second alternative view is the competition-stability contending that more market power in the loan market will increase bank risk as high interest rates on loans result in the default of loan customer and aggravate moral hazards incentives of borrowers to shift into risks. It is noted that highly concentrated banking market motivate institutions to accept more risk as they believe that they are too big to fail and that they are explicitly or implicitly protected by the government safety net. This is supported by some empirical studies stating that the risk of bank failure rises in more concentrated markets (Boyd, Nicolo *et al*., 2006; Nicolo and Loukoianova, 2007).

The competitive condition in banking system has been investigated in many papers. Berger and Hannan (1989) examined the relationship between market concentration and profitability using U.S. banks data during the period 1983 - 1985. They concluded that noncompetitive price behavior could explain that relationship. Other studies focused on how bank performance was affected by regulations and other factors supposed to relate to the competitive environment. It was concluded that tighter entry restrictions were

negatively linked to bank efficiency, leading to higher interest margins and overhead expenditure as well as increasing bank fragility (Barth, Jr. *et al.* 2004).

This study analyzed the determinants of operating efficiency for commercial banks by grouping the banks into two, high and low market share index banks. The grouping was based on the premises that competition is one of the most important and fundamental issues in the financial services sector, especially at this point of financial globalization and a global financial crisis, with competition hypothesized to stimulate productivity growth either by general technical progress or by efficiency improvement, or both. However, according to Mwega, (2009), competition exacerbates the moral hazard problem of financial institutions, especially banks, so that the issue of competition in the financial services sector carries key implications for productive efficiency, financial stability and for the effective regulation and supervision of the financial services sector.

2.5 Commercial Bank Specific Performance Indicators

2.5.1 Capital Adequacy and Operating Efficiency

In analyzing the relationship between capital, risk and efficiency for a sample of European banks between 1992 and 2000, Yener and Siandiago (2007), in contrast to the established US evidence did not find a positive relationship between inefficiency and bank risk-taking. Inefficient European banks appeared to hold more capital and take on less risk. Empirical evidence was found showing the positive relationship between risk on the level of capital (and liquidity), possibly indicating regulators' preference for capital as a means of restricting risk-taking activities. They also concluded that the financial strength of

the corporate sector has a positive influence in reducing bank risk-taking and capital levels. There are no major differences in the relationships between capital, risk and efficiency for commercial and savings banks although they were for co-operative banks (Yener *et al.*, 2007). Operating efficiency is affected by and related to bank risk-taking. Firms with more capital are found to operate more efficiently than firms with less capital, indicating that the level of capitalization is a good proxy for performance (Kwani, 1997). Core capital (leverage) ratio, equity capital to assets ratio, ratio of total capital to assets and tier 1 risk based capital ratio have been used as proxy for capital adequacy measures, (Mathura 2009; Christian *et al* 2008; Hutchinson and Cox 2006; Buyuksalvarci *et al* 2011).

Tier 1 Core Capital Ratio (CCA) is the ratio of a bank's core capital (common stock and disclosed reserves or retained earnings) to total assets. The statutory minimum for commercial banks in Kenya is 8%. Tiers 1 Risk –Based Capital Ratio (TRC) is the ratio of bank's core capital to risk weighted assets. Total Capital Ratio (TCA) is the ratio of total risk based capital to risk weighted assets. Equity Capital to Total Assets (CEA) is the ratio of total equity capital to total assets. This ratio is used as a proxy for banks' capital structure. The ratio measures the ability of the bank to withstand losses. A declining trend in this ratio may signal increased risk exposure and possibly capital adequacy problem.

2.5.2 Credit Risk and Operating Efficiency

Credit risk is another important internal factor that affects bank efficiency. Since risk, management is vital aspect for the operational and survival of banks, any changes in credit risk reflect on the health of banks' loan portfolio. That is, poor asset quality ultimately increases the chances of bank failure (Cooper *et al.*, 2003). Prior literature suggests that bank risk-taking may be dependent on operating efficiency. On the one hand, the degree of regulatory oversight, and hence the managerial discretion in risk-taking, is partially dependent on the quality of management. To the extent that bank supervisors in regulating banking firms tend to emphasize risk management and control procedures rather than the level of risk per se, an efficient bank with superior management arguably has more flexibility in taking additional risk than a less efficient one, ceteris paribus. On the other hand, an efficient banking firm, which is expected to have a higher market valuation than a less efficient firm, may restrain from risk-taking to protect its franchise value. Further, the agency problems between management and shareholders also affect the relationship between credit risk and operating efficiency. It is unclear whether the relation between efficiency and bank risk is positive, as implied by Saunders *et al* (1990), or negative, as predicted by Gorton and Rosen (1995).

At the same time, operating efficiency may be dependent on bank risk. Risks may be costly to manage, in the sense that a high-risk firm may require additional capital and labor inputs to produce the same level of outputs. For example, it may be more costly to monitor a high-risk loan portfolio, or to run a highly mismatched maturity gap. If it is more costly to run a risky firm, then, bank risk is expected to have a negative effect on operating efficiency. However, active risk-taking, which is expected to be rewarded by higher expected return, should be distinguished from passive risk-taking, where the risk

stems from the lack of internal risk control. Put differently, it may not be costly to attain risk, but it may be costly to reduce, because of the expense of identifying and weeding out high-risk loans during the loan-granting process or to match interest sensitive assets with interest sensitive liabilities at each reprising interval. Therefore, it may be the case that it is more costly to operate a low-risk firm than a high-risk firm. This will lead to a positive effect of bank risk on operating efficiency (Kwan, 1997). The following ratios were used as proxy for credit risk measures in relation to operating efficiency of banks.

Net Charge-Off / Average Gross Loans (NCOAGL), which measures credit risk management of a bank. Net charge off or the amount written-off from loan loss reserves less recoveries are measured as a percentage of the gross loans. It indicates what percentage of today's loans have finally been written off from the books. The lower this figure is the better as long as the write off policy is consistent across comparable banks. (LLPTL) = Loan Loss Provision to Total Loans. (LLPE) = Loan Losses Provision / Equity -The ratio of loan loss provision to total equity. (LLR/GL) = Loan Loss Reserve / Gross Loans. The ratio of loan loss reserve to gross loans (loans plus loan loss reserves) indicates how much of the total portfolio has been provided for but not charged off. It is a reserve for losses expressed as percentage of total loans. Given a similar charge-off policy, the higher the ratio the poorer the quality of loan portfolio. (LLRE) = Loan Loss Reserve / Equity, the ratio of reserve for loan losses to total equity.

2.5.3 Bank Liquidity and Operating Efficiency

Liquidity represents the ability of the institution to fund increases in assets and meet obligations as they fall due. It is crucial to the continued viability of any banking institution. The importance of liquidity goes beyond the individual bank as a liquidity

shortfall at an individual bank can have systemic repercussions. The statutory minimum requirement for liquidity ratio for banks in Kenya is 20%. The following ratios will be considered for liquidity risk management; (IBR) = Interbank Ratio - This is money lent to other banks (due from other banks) divided by money borrowed from other banks (due to other banks). If this ratio is greater than 100 then it indicates the bank is net placer rather than a borrower of funds in the market place, and therefore more liquid. (LR) = Loan Ratio = Net Loans / Total Assets. This liquidity ratio indicates what percentage of the assets of the bank is tied up in loans. The higher this ratio the less liquid the bank is.

Net Loans / Total Deposits & Borrowing (NL/TDB) is another measure for bank's liquidity. The loan to deposit ratio is a measure of liquidity in as much as high figures denotes lower liquidity. This ratio has as its denominator deposits and borrowings with the exception of capital instruments (where total deposits and borrowings = customer and short-term funding plus other funding minus hybrid capital and subordinated debt). (LADSTF) = Liquid Assets / Deposit & Short- Term Funding - This is a deposit run off ratio that looks at what percentage of customer and short term funds could be met if they were withdrawn suddenly, the higher this percentage the more liquid the bank is and less vulnerable to a classic run on the bank. Liquid assets include cash, cash due from other banks plus deposits with other banks plus due from central banks plus trading securities.

2.5.4 Bank Profitability and Operating Efficiency

A study carried out to examine the operating efficiency of retail orientation bank of a large commercial bank in Greece. The bank was offering relatively homogenous products in a multimarket business environment. The study found that, there existed a positive relation among profitability, size of the branches and their efficiency and within the

branch characteristics, variable, more profitable and larger branches have higher operating efficiency (Dimitris 2008). There is no compelling evidence that high profit banks are characterized by greater operating efficiency than low profit banks. This is because overtime and especially among relatively large banks, information flows and competition pressures act to reduce operating efficiency differences that may appear in the short run (Myron L et al 1982). Net interest margin, return on assets, return on equity have been used as measures of profitability for banks (Olweny and Shipho (2011); Ariff and Can (2008); Athansasoglou *et al*, (2008), Amer and Eldomiaty (2011).

Net Interest Margin (NIM) = Net Interest Income/Earning Assets - This ratio is the net interest income (interest received minus interest paid) expressed as a percentage of earning assets (loans plus other earning assets excluding fixed assets). The higher this ratio is, the cheaper the funding or the higher the margin the bank is commanding. Higher margins and profitability are desirable as long as the asset quality is being maintained. Other Operating Income / Average Assets (OI/AA) - When compared to the above ratio, this ratio indicates to what extent fees and other income represents a greater percentage of earnings of the bank. As long as this is not volatile trading income it can be seen as a lower risk form of income. The higher this figure is the better. Return on Assets (ROA) - The ratio of net income after tax to total assets, this ratio measures the managerial efficiency. Return on Equity (ROE) - The ratio of net income after tax to total shareholders' funds, this ratio indicates how much was earned for each unit invested by owners. Recurring Earning Power (REP) - This is the ratio of Pre-provision income to average total assets. The ratio is a measure of after tax profits adding back provisions for

bad debts as a percentage of Total Assets. Effectively this is a return on assets performance measurement without deducting provisions.

2.5.5 Asset Quality and Operating Efficiency

Asset quality predicts the extent of credit risk and is one of the factors that affect the health status of a 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). The following ratios were used as proxy for asset quality. Loan Loss Provision / Net Interest Revenue (LLPNIR) - The ratio of loan loss provision to net interest revenue presents the relationship between provisions in the profit and loss account and the interest income over the same period. Ideally, this ratio should be as low as possible. In a well-run bank, if the lending book were higher in risk, this would be reflected by higher interest margins. If the ratio deteriorates, it means that risk is not being properly remunerated by margins.

Loan Loss Reserve / Impaired Loans (non-performing loans) (LLR/IL) is another measure of asset quality for banks. The ratio of loan loss reserve to the impaired loans or non-performing loan was used as proxy for measuring the asset quality. The higher this ratio is the better provided the bank is and the more comfortable it feels about the assets quality. Impaired Loans / Gross Loans (ILGL) - The ratio of impaired loans (non-performing) to gross loans (Loans + Loan loss reserve) was used as a measure of the amount of total loans that are doubtful. The lower this figure is the better the assets quality. Net Charge-Off / Net Income before loan losses provision (NCO/NIBLLP) - The

ratio of net charge-off (the amount written off from loan loss reserves less recoveries from loans) to net income before loan loss provisions. Net charge-off over net income before loan loss provision ratio is measured similar to charge-offs but against income generated in the year. The lower this ratio is the better, other things being equal.

2.6 Measurement of Bank Operational Efficiency

Measuring bank efficiency is difficult because there is no satisfactory definition of bank output. Neither the number of accounts nor total assets, total loans, and total deposits provide a good index of output. Moreover, the value added of banks - given by their labor costs and profits-measures both the output and the cost of banking. Vittas (1991) used three sets of operating ratios to discuss the impact of differences in structure and practice on bank performance: Operating asset ratios (which relate all revenues and costs to average assets), Operating income ratios (which relate revenues and costs to gross income), Operating equity ratios (which relate revenues and costs to average equity). He also used return-on-equity (ROE) analysis to highlight the effects of differences in banking structure and practice (Vittas, 1991). He noted that banks in developing countries generally operate with wide interest spreads. High spreads may be caused by government regulations (such as onerous reserve requirements and other forms of bank taxation), high inflation, high loan losses and high costs and profits due to operating inefficiencies and uncompetitive behavior.

According to Amer *et al*, (2011), studies of efficiency of commercial banks have generally evolved around explaining a performance measure of efficiency by a vector of variables that capture the key components determining the efficiency. Two broad approaches are generally used in the literature: structural and nonstructural. Structural

approaches (X- efficiency measures) are based on theoretical models of banking behavior, and involve such optimization problems as cost minimization or profit maximization. Nonstructural approaches choose different performance measures, and focus on explaining these measures by a variety of financial ratios or other factors considered appropriate. For example, there is a large literature on financial intermediation efficiency measured by interest rate spreads or net interest margins. This study used the nonstructural approach by determining accounting and financial ratios that were used as indicators of bank performance.

Many studies have used accounting and financial ratios in measuring and evaluating performance of banks because ratios provide a great deal of information about a bank's financial performance when compared with prior periods and with other banks' performance (Oral and Yolalan, 1990). According to Ong, *et al*. (2011) financial ratio is a tool that was developed to evaluate the statement and indicate the financial performance of a bank. Each financial ratio plays different roles in explaining different sort of information regarding the performance and financial condition of banks. Comparisons of financial ratios are intended to light on how well a bank is achieving its objectives. In spite of certain limitations, accounting ratios are still considered as a convenient and reliable analytical tool (Halkos and Salamouris, 2004). Ratio analysis, being a time-tested technique, is most frequently employed in all financial decision-making processes. Brigham and Ehrhard (2005) stated that an analysis of its financial statement could highlight a company’s strength and shortcomings. This information can be used by management to assist improve performance and by others to predict future result. (Ong *et al.,* 2011).

A big number of U.S. empirical studies of banks efficiency used panel data analysis. These studies overall (Berger *et al*., 1993; Berger and Humphrey, 1997; Mitchell and Onvural, 1996) conclude that the U.S. banks average cost curve is relatively flat when compared to European banks. Most empirical work on European banks, however, focused on cost functions using data from single bank or country. They found a U-shaped average cost curve, and to some extent, scope economies exist (Parisio, 1992; Berger *et al*., 1993; Drake and Simper, 2002). It is noticeable from the results that the choice of specific approach to efficiency study as well as the definitions of inputs and outputs in multi-product financial firms model, will most likely affect the estimates. This study used panel data of large and low market share index banks in the analysis of determinants of operating efficiency for commercial banks.

A case study of commercial banks efficiency in Namibia by Ikhide (2008) used operating ratios and parametric approach to measure efficiency for the 1993–2006 periods. He found substantial existence of economies of scale in Namibian banks but they were not operating at the minimum point of average cost curve. Other studies of banks efficiency included measures of non-performing loans in the cost or production function. Berger and DeYoung (1997), studied problem loans, cost efficiency in U.S. commercial banks, and found that low cost efficiency occurred before soaring non-performing loans.

Bakar and Tahir (2009) evaluated the performance of multiple linear regression technique and artificial neural network techniques with a goal to find a powerful tool in predicting bank performance. Data of 13 banks in Malaysia for the period 2001-2006 was used in the study. Return on Assets (ROA) was used as a measure of bank performance and seven variables including liquidity, credit risk, cost to income ratio, size, concentration ratio,

were used as independent variables. They noted that neural network method outperforms the multiple linear regression method but it lacks explanation on the parameters used and they concluded that multiple linear regressions, notwithstanding its limitations, could be used as a simple tool to study the linear relationship between the dependent variable and independent variables. The method provides significant explanatory variables to bank performance and explains the effect of the contributing factors in a simple, understood manner. This study adopted the multiple linear regression models to analyze the effect of bank specific performance indicators on operating efficiency of the banks.

An efficient banking sector is able to absorb negative shocks and enhance financial system stability. Thus, many researchers focused in their publications on the best methodology to employ whether parametric or non-parametric to estimate bank efficiency (Aiger *et al.* 1977; Chames *et al.* 1978). Bank operating efficiency is usually measured through both internal and external determinants. Bank accounts (balance sheet and/or profit and loss accounts) are used as source of information for internal performance indicators. The size variable was considered as a milestone for determining bank efficiency. Generally, large banks are perceived to be more efficient than small banks due to economies of scale and customer confidence level. However, very large banks can have negative impact on bank efficiency due to bureaucracy and other reasons. That is, a non-linear relationship can be drawn between bank size and bank efficiency.

As for internal determinants, researchers focused on the relationship between foreign ownership and bank efficiency. This is mainly due to four important reasons: (i) the fiscal costs of banking structure is reduced through foreign capital investment (Tang *et al.*,

2000). (ii) The quality of staff working in foreign banks may be more expert in risk management and may bring a better culture of corporate governance which results in better banking sector efficiency (Bonin *et al.*, 2005). (iii) The entry of foreign banks increases the competition in the banking sector market and thus forces domestic banks to cut cost in order to improve efficiency (Claessens *et al.* 2001).(iv) The technology transfer by foreign banks affects positively the domestic banks' operation and efficiency. Bank ownership and bank efficiency may be closely related to each other in a sense that private banks are considered to be more efficient than public or state-owned banks. This was supported by a study by Barth *et al*. 2004 stating a negative relationship between state ownership and an overall banking sector development and banking efficiency. This study adopted the use of ratio analysis of internal performance indicators to evaluate the determinants of banks operating efficiency.

2.7 The Conceptual Framework

The objective of this study was to analyze the determinants of operating efficiency for commercial banks in Kenya. The study adopted the non-structural approach and ratio analysis using bank specific performance indicators; capital adequacy, credit risk, liquidity, profitability and asset quality and related them to operating efficiency of the banks relative to their level of market share index. According to banks supervision annual report 2011, Market share index was computed for every bank as a composite of net assets, total deposits, shareholder's funds, number of loan accounts and number of deposit accounts. Banks were grouped as large and small according to their level of market share index. Figure 2.1 shows the Conceptual Framework of the study.

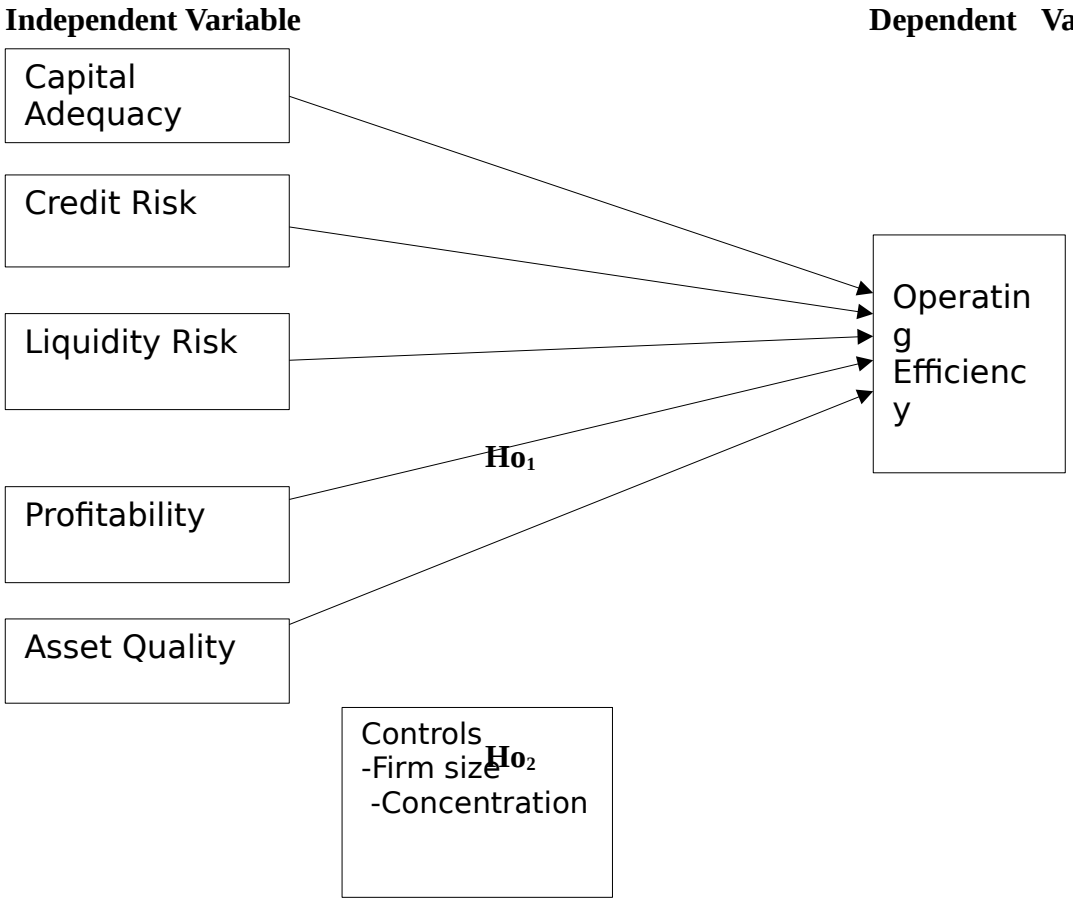
Independent Variable
Dependent Variable
Capital Adequacy
Credit Risk
Liquidity Risk
Profitability
Asset Quality
Operating Efficiency
Ho1
Controls
-Firm size
-Concentration
Ho2
Ho3
Ho4
Ho5

Figure 1.1: Conceptual Framework

Source: Research, 2013

2.8 Operationalization of the Study Variables

The dependent variable in this study was bank operating efficiency, which was measured by Operating Efficiency Ratio (OER) and determined as follows,

$$OER = \frac{\text{Interest income + non-interest income + securities gains (losses)}}{\text{Interest expense + non- interest expense + provision for loan losses + taxes}}$$

Efficiency ratio evaluates the overhead structure of a financial institution. It is the measure of how effectively a bank uses overhead expenses including salaries and benefit costs and occupancy expenses as well as other operating expenses in generating revenues (Yeh, 1996). Generally, operating efficiency ratio for banks is calculated by dividing operational expenses by the sum of net interest income and non-interest or fee income

(Allen and Rai (1996); Yeh (1996); Halkos and Salamouris (2004)). Other things being equal, a decrease in the efficiency ratio is viewed as a positive while a rising efficiency ratio is generally undesirable. Lower efficiency ratio means that the bank is making considerably more than it is spending and is therefore on sound fiscal footing. Efficiency ratio can be conceptualized as the measure of what a bank must spend in order to make a shilling (Halkos and Salamouris, 2004).

However, for the purpose of uniformity and consistence in the data collected, this study took the reciprocal of the ratio by dividing interest and non-interest income by operational expenses. Amer, (2011) used the ratio by dividing interest and non-interest income by operational expenses to determine operating efficiency for Egyptian banks. Therefore, a higher efficiency ratio was more desirable than a lower efficiency ratio in this study. Since the variables used in computation of efficiency ratio (revenues and operational costs) reflect the pricing and production efficiency of a bank, then the ratio was considered as a good measure of the dependent variable. The independent variables for the study were bank financial performance indicators. These were capital adequacy, credit risk, liquidity, profitability and asset quality. Table 2.1 shows a summary of ratios computed for each of the study variables.

Table 2.1: Proxy Variables for the Independent Variables

Variable	Performance Measure (Ratio)	Formulae
Capital Adequacy		
cca	Core capital ratio	Common stock to total capital
trc	Tier 1 risk – based capital ratio	Core capital to risk weighted assets
tca	Total capital ratio	Risk based capital to risk weighted assets
cea	Equity capital to total asset ratio	Equity capital to total assets
Credit Risk		
ncoagl	Net charge –off to average gross loans Loan loss provision to total loans	Net charge –off to average gross loans Loan loss provision to total loans

llptl	Loan loss provision to total equity	Loan loss provision to total equity
llpe	Loan loss reserve to gross loans	Loan loss reserve to gross loans
llrgl		
Liquidity		
ibr	Interbank Ratio	Money due to other banks/Money due from other banks
lr	Loans Ratio	Net loans to total assets
nltdb	Net Loans to Total Deposits and Borrowings	Net Loans to Total Deposits and Borrowings
ladstf	Liquid Assets to Deposits and Short Term Funding	Liquid Assets to Deposits and Short Term Funding
Profitability		
nim	Net interest margin	Net interest income to earning assets
oiaa	Other operating income to average assets	Other operating income to average assets Net income after tax to total assets
roa	Return on assets	Net income after tax to shareholders funds
roe	Return on equity	Pre-provision income to average total assets
rep	Recurring earning power	
Asset Quality		
llpnir	Loan loss provision to net interest revenue	Loan loss provision to net interest revenue
llril	Loan loss reserve to impaired loans	Loan loss reserve to impaired loans
ilgl	Impaired loans to gross loans	Impaired loans to gross loans
nconibllp	Net charge –off to net income before loan loss provision	Net charge –off to net income before loan loss provision

Source: Research, 2013

2.9 Summary of Critique and Research Gaps

From the discussions above, the following four issues emerged about operating efficiency and commercial banks in Kenya, which laid the foundation to this study. Firstly, Commercial banks play a critical role in the economic sustainability, development and growth. Hence, their operational efficiency is paramount, yet banks still had not adopted a model-based approach of determining their operational efficiency.

Secondly, the survival of a bank does not depend on how much profit the bank makes, but how efficiently the profit is made. Therefore, it is not necessarily that the more profitable

the bank is, the more operational efficient it is. Managers of banks have to manage resources efficiently and effectively in order to meet the varying demands of stakeholders.

Thirdly, from the literature, it is not clear whether size and market share of a bank has any effect on its operational efficiency. The key question here is, should the approach to determination of banks' operational efficiency differ with differences in market share index of the banks? This study endeavored to seek for an answer to this question.

Fourthly, performance of a bank may be measured using both bank specific indicators and non-bank specific indicators. For purposes of this study, Bank specific performance indicators and financial ratios are appropriate tools for measuring operational efficiency for banks, since the study scope focuses throughout on banks operating under the same macroeconomic conditions.

In this thesis, the author sort to contribute to the banking efficiency literature in emerging markets. To the best of author's knowledge, this research contributes to the literature of banks' operating efficiency, especially in the case of Kenya as a developing country adopting major banking reforms. This is supported by the fact that emerging countries are known for highly inefficient banking sector, resulting in losses to financial development and stability. Thus, research in different regions with different environmental and economic factors, may help regulators and mangers achieve an efficient banking system.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

In this chapter, the study area and methodological issues are presented. The chapter is organized into five sections. Section 3.1 underlines the research design used in the study Section 3.2 briefly describes the area of study, while section 3.3 discusses types and sources of data used in the study. Section 3.4 explains data collection methods followed by section 3.5, which gives the model specifications and describes how data was cleaned and analyzed.

3.1 Research Design

The study used data on the rating and bank specific performance measures of commercial banks in Kenya. Banks' market share index was determined and used as a measure of large and small banks. The study adopted an explanatory approach by using panel research design to fulfill the above objective. Explanatory research design was used because the aim of the study was to attempt to explain the relationship between the independent variable and the dependent variable and to establish the effect of independent variable on the dependent variable.

3.2 Population of the Study

The population of interest in this study was all licensed commercial banks that were operating in Kenya as of 31 December 2011. The Kenyan banking sector comprises of Commercial Banks, Non-Bank Financial Institutions, Forex Bureaus and Deposit Taking

Microfinance Institutions. Commercial Banks and Mortgage Finance Companies in Kenya are licensed and regulated under the Banking Act, Cap 488 and Prudential Guidelines issued there under. As of 31 December 2011, 44 commercial banks had been licensed under Cap 488 of the Banking Act of Kenya. However, Charterhouse Bank Ltd, which was placed under statutory management by the CBK in 2006, was still under the same management as of December 2011. For purposes of this study, the bank was omitted out due to lack of financial reports on the bank. Data was obtained for all the 43 commercial banks that were operational as of 31 December 2011.

3.3 Data Types and Sources

Secondary quantitative data was collected from internal sources, published financial statements of banks for period 2005 – 2011, found at the Central Bank of Kenya (CBK). Other qualitative data (information) about bank history and general sector quantitative performance were obtained from bank supervision reports from the CBK. Financial reports provide a presentation of income statement for the year for the bank, Balance Sheet as at the year-end and the notes to the accounts. From income statements, data was collected on revenue generated for the year and sources, operating expenses incurred during the year, provisions made for impairment losses on loans and advances and net income made for the year. Data from the balance sheet included net value of assets, liabilities, capital and reserves. Notes to the accounts provided detailed data on the analysis and breakdown of balances reflected in the income statement and in the balance sheet. Financial and accounting ratios for different variables under study were determined using data extracted from the statements.

The financial reporting by banks in Kenya is highly regulated by the CBK. It is also done in compliance with the provisions of International Accounting Standard (IAS 30). The objective of IAS 30 — Disclosures in the Financial Statements of Banks and Similar Financial Institutions is to prescribe appropriate presentation and disclosure standards for banks and similar financial institutions, which supplement the requirements of other Standards. The intention of this is to provide users with appropriate information, which assists them in evaluating the financial position and performance of banks. It also enables the users obtain a better understanding of the special characteristics of bank operations. Further to that, registered, approved and reputable audit firms do audit the financial statements and reports before they are published for public consumption. This therefore confirms the reliability of data obtained from financial statements and reports of banks.

3.4 Data Collection Methods

Data was collected from 43 commercial banks, which existed and had the required data for the study period 2005-2011. Charterhouse bank was put under statutory management in 2006 and therefore the financial statements were not available for the study period. Relevant ratios for each bank and for each year were determined for capital adequacy; credit risk; liquidity; profitability and asset quality by applying the appropriate ratio formulae. Market share index of banks was determined for each year of study as the weighted average percentage of each variable to the market average total. The formulae used was, 0.33*percentage of net assets + 0.33*percentage of total deposits + 0.33*percentage of total capital + 0.01*percentage of total number of deposit accounts

(CBK, 2011). The determined ratios were then coded and used for the analysis of determinants of operating efficiency for commercial banks.

3.5 Data Analysis and Presentation

The collected data was analyzed using Stata software. Before analysis, data cleaning was done as part of data quality approaches of ensuring data is fit for use. Data cleaning involved the detection of outliers in the data by checking the patterns of the variables in the study. Duplicates were also identified and corrected. Completeness of the data was checked by confirming that all values for variables that were available were recorded. Descriptive statistics for data, correlation matrix and estimation of panel data were run. Inferential statistics using the Hausman test checks were done in order to determine a more efficient model against a less efficient one. Fixed effect regression analysis was performed to evaluate the relationships between the independent ratios and operating efficiency. Banks were classified into either low or high market share using a simple average of market share index of (2.486) determined for the study period 2005-2011. Banks classified under low market share lay below the average market share index (2.486) while those that lay above the average were classified as high market share banks.

The estimating equation of the autoregressive model took the following form;

$$y_{it} = \alpha_{itk} + \lambda_{itk} y_{it-1} + \sum_{i=1}^{43} \sum_{t=1}^{7} \beta_{itk} X_{itk} + \varepsilon_{itk} \qquad (3.1)$$

Where:

t = 1…7 (time in years)

i = 1…43 (number of banks)

k = 1…n (combination of explanatory variables)

y_{it} = Bank Operating Efficiency

α_{itk} = The alpha constant

λ_{itk} = Speed of adjusting bank operating efficiency to a target level

y_{it1} = Lagged operating Efficiency

β_{itk} = Coefficient of Bank financial indicators

X_{itk} = Bank financial indicators

ε_{itk} = Estimation error

With fixed effects regression, the study used the changes in operating efficiency over time to estimate the effects of the capital adequacy ratios, credit risk ratios, liquidity ratios, profitability ratios and asset quality ratios on operating efficiency. The checks for goodness of fit included coefficient of determination and analysis of the patterns of residuals. Statistical significance was checked by an F- test of the overall fit and t- tests of individual parameters. In addition, since there were 21 explanatory variables, the following hypotheses were tested: $H_0 = \beta_1 = \beta_2 = \beta_3 \ldots = \beta_{21} = 0$ in other words, a test if all the coefficients were significant. The decision rule by F- statistic was to reject the null hypothesis when the value of F is unusually large. Alternatively, reject the null hypothesis

when the p- value is less than 0.05. Similarly, the t- statistic used to test for the significance of the individual parameters. The coefficient of determination R^2 where $0< R^2 < 1$ was also used as a measure of the overall fit of the model, the larger the R-squared the stronger the model. Fixed effects regression was effective to use since other variables that differ between banks but were constant over time such as bank size and market concentration were controlled. The study sought to identify the behavior of the full fixed effects regression output and the reduced model when variables below and above the average market share index were considered in the model.

3.6 Model Justification and Assumptions

The study used the fixed effects regression model to analyze the relationship and the effect of independent variables to the dependent variable. The assumptions of the fixed effects model work well with this study as opposed to the random effects model. Fixed effects model assumes that something within the firm impact or bias the variables and there is need to control it. Fixed effects model therefore removes the effect of time invariant characteristics from the predictor variable so that the predictor's net effect may be assessed. Time invariant characteristics are unique to the firm and should not be correlated with other firm's characteristics. Thus, the error term and the constant represent individual characteristics. The rational for the Hausman test was to test if the entity's error terms are correlated. Fixed effects model may not suitable if entity's error terms are correlated. If the unobserved variables do not change over time, then any changes in the dependent variable must be due to influences other than the fixed characteristics (Stock and Watson 2003).

For random effects model, the variations across firms is assumed to be random and uncorrelated with the predictor variables. Random effects model includes the between entity error and within entity error with the assumption that entity's error term is not correlated with the predictors, which allows for time invariant variables to play a role as explanatory variables. Random effects model allows for generalized inferences beyond the sample used in the model. Interpretation of the coefficients is tricky since they include both the within entity and between entity effects (Stock and Watson 2003)

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Overview

This chapter involves the presentation and discussion of the results from the data analysis. The chapter is divided into four sections. Section 4.1 gives the descriptive statistics of the variables in the study. Section 4.2 explains the procedure for panel data analysis while Section 4.3 describes the analysis of the market share index and finally Section 4.5 gives the analysis and determination of the optimal model from the study.

4.1 Descriptive Statistics

4.1.1 Summary Statistics of the Data

This section provides the descriptive statistics of the panel data collected for the study. Panel data allows for control of variables that change over time. With panel data and time series data, it was important to identify which variable was measuring time and which variable distinguishes firms in the data set. The study applied stata program. The total number of observations, means, standard deviations, minimum and maximum values of the variables used in the study are summarized in Table 4.1 below.

Table 4.1: Summary Statistics of the Data

Variable	N	Mean	Standard deviation	Minimum	Maximum
Operating efficiency	281	1.197883	.200866	.067	2.01
Equity/ Total Capital Ratio	281	1.089466	.2698003	.38	4.42
Core Capital Ratio	281	.2455445	.1401477	.096	.812
Risk based capital/Risk weighted assets	281	.2578612	.1398761	.1	.814
Equity Capital to Total Assets Ratio	281	.169548	.0943927	.06	.819
Net charge off/ average gross loans	279	.0264531	.0595974	.00002	.604
Loan loss provision/ Total loans and advances	279	.0264531	.0595974	.00002	.604

Loan loss provision/ total equity	280	.0733164	.098589	.00009	.591
Loan loss reserve/ gross loans and advances	206	.0158311	.0282535	.0004	.298
Interbank Ratio	218	110.1368	778.7796	.29	8299
Loan Ratio	276	.5135543	.1326854	.083	.793
Net loans/ total deposits and borrowing	276	.6632717	.1728391	.11	1.35
Liquid assets/ deposits and short term funding	277	.5263177	.3260365	.096	4.64
Net Interest Margin	281	.0717196	.0254367	.006	.18
Other operating income/ average assets	281	.0365267	.0232251	.001	.2
Return on Assets	281	.0192171	.0205994	-.13	.086
Return on Equity	281	.1343028	.1073574	-.371	.384
Recurring Earning Power	281	.0340964	.0386446	-.068	.37
Loan loss provision/ net interest revenue	278	.2449486	.684275	-.104	9.03
Loan loss reserve/ impared (non performing) loans	198	.1947374	.1999113	.005	1.11
Impared loans/ gross loans	274	.1532401	.2365202	.0001	1.71
Net charge off/ net income before loan loss provisions	278	.2371906	.6266659	-8.69	.97

Source: Research, 2013

The summary statistics of the data show that the average operating efficiency of all the banks was 1.198 with a minimum ratio of 0.067 and maximum ratio of 2.01. A mean of 1.198 implies that on average banks were able to cover their full operational costs from revenues generated during the study period, and still made earnings for the owners of the business. It is also important to note that banks that scored lower operational efficiency were in their initial years of operation than those that were in operation for longer period. For example, First Community Bank of Kenya Ltd. Started its operations in the year 2008 and recorded an operating efficient ratio of 0.067 while in 2009, the bank recorded a ratio

of 0.69. This implies that full operational efficiency cannot be achieved in short term. This result supports the argument by Beck et al. (2010) that bank's operational efficiency may be reflected in its growth and expansion through strategic branch network. This can only be a long-term achievement as the bank continues in operation.

From the summary statistics Table 4.1, it is evident that banks maintained their capital above the minimum statutory requirement. The average for core capital ratio for the banks was 24% with minimum ratio of 9.6% and maximum ratio of 81% against the minimum statutory requirement of 8% that prevailed during the entire study period. The average risk based capital ratio for the banks was 26% with a minimum ratio of 10% and maximum of 81% against the statutory minimum requirement of 12%. The equity capital to total assets ratio of the banks was 17% on average with minimum ratio of 6% and maximum ratio of 82%. This ratio represents the bank's capital structure and shows the ability of bank to withstand losses. The decline in ratio signals increased risk exposure and possibility of capital adequacy problem. Going by the average of 17% for the study period, it means that 83% of the funding comes from customer deposits and other liabilities. This shows the level of risk that banks were exposed to.

Net charge off to average gross loans ratio measures the credit risk management of a bank. Thus, the percentage of loan balances standing as at balance sheet date that were finally written off. The lower the ratio the better the credit risks management that is in place. From summary statistics table, the average ratio was 2.64% with minimum of 0.002% and maximum of 60.4 %. The shoot up in the maximum ratio of 60.4% was necessitated by National Bank of Kenya ltd. which made huge write offs of nonperforming loans during the years 2005 and 2006 as a deliberate recovery strategy by

the bank. This result implies that on average banks maintained low write offs and low provisions for non-performing loans during the study period. It also implies that banks improved in their credit risk management styles may be with improvement in technology and regulatory systems that are in place. The low average ratio for loan loss reserves to gross loans indicate how much of the total loan portfolio that was provided for but not charged off. Low ratios imply high quality of loan folio provided by the banks.

The interbank ratio indicates the position of the banks in terms of a bank being a net placer or borrower of funds in the market place. A ratio greater than 100 implies that the bank is a net placer rather than borrower of funds. From the statistical summary table above, the average interbank ratio was 110.14, which implied that on average, banks were net placer of funds in the market place rather than borrowers and therefore more liquid during the study period. The loan ratio shows the percentage of assets tied up in loans. The higher the ratio, the less liquid the bank is. On average, 51% of assets were tied up in loans during the study period with a minimum ratio of 8.3% and a maximum ratio of 79.3%. This implies that on average, a half of the bank's total assets comprised of loans and advances to customers. Similarly, on average, customer deposits and borrowings financed about 66% of the loans advanced during the study period. The ratio of liquid assets to deposits and short term funding indicates the percentage of customers and short-term funds that could be met by banks if the funds were to be suddenly withdrawn. The higher the percentage, the more liquid the bank is and the less vulnerable to a classic run on the bank. On average, the banks recorded 53% of this ratio during the study period, meaning that, banks could only avail half of the funds required if customers were suddenly to withdraw their deposits from the banks.

Net interest margin ratio indicates the level of margins made from interest as the core source of revenue for banks. The higher the ratio, the cheaper the funding or the higher the margin the bank is commanding. From the summary statistics table, the average net interest margin for banks was 7.17% with minimum ratio of 0.6% and maximum ratio of 18%. This implies that other sources of income for banks for example, fees and other income contribute a lot towards profitability of banks. Other operating income to total assets indicates to what extend fees and other incomes, which are considered as a lower risk form of income, represents a greater percentage of earnings of the bank. The average ratio was 3.7% with minimum ratio of 0.1% and maximum ratio of 20%. The return on assets ratio was used to measure efficiency of the management. The average ratio for the study period was 1.92% with minimum ratio of -13% and maximum ratio of 8.6%. This implies that in general, the management efficiency of the banks was very low during the study period. Return on equity ratio was used to indicate how much was earned for each shilling invested by the owners of the business. On average, 13.4% was earned for every shilling invested with a minimum ratio of -37.1% and maximum ratio of 38.4% during the study period. An average return on investment of 13.4% was a good return compared to average market rates that prevailed during the study period. The recurring earning power shows the return of assets performance measurement without deducting provisions. The average recurring power was 3.41% with minimum ratio of -6.8% and maximum ratio of 37%.

The ratio of loan loss provision to net interest revenue was used to measure the relationship between provisions made in the income statement and the interest income over the same period. Lower ratios are recommended for this purpose. The average ratio

for the banks was 24.5%, which implied that during the study period, more loan loss provisions were made against the net interest revenue that was earned. Loan loss reserve to impared loans ratio was used as proxy for measuring asset quality of the banks. The average ratio was 0.195 with minimum ratio of 0.005 and maximum of 1.11.This implied that the asset quality of the banks on average was low during the study period. The Impared loans to gross loans ratio was used to measure the amount of loans that were doubtful. The average ratio for the study was 0.153 still confirmed the lowness of the asset quality. The net charge off to net income before loan loss provisions ratio had an average of 0.237 with minimum ratio of -8.69 and maximum of 0.97 implying the weakness in asset quality on average.

4.1.3 Distribution Test of Dependent Variable

The study went further to check for the distribution of dependent variable. The assumption of linear regression models is that dependent variable has to be normally distributed. The histogram of operating efficiency for the period 2005 and 2011 showed normality as described in the bell shaped curve (Figure 4.1).

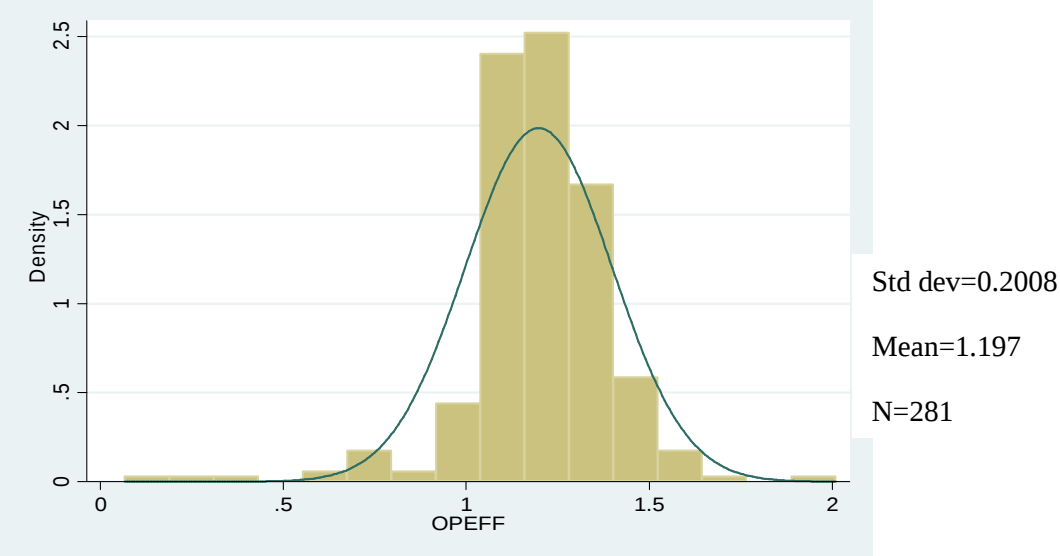

Figure 4.1: Operating Efficiency Distribution

Source: Research, 2013

4.2.4 Trend in Annual Mean of Operating Efficiency

Figure 4.2 shows the trend in the annual mean of operating efficiency for the years 2005 to 2011.

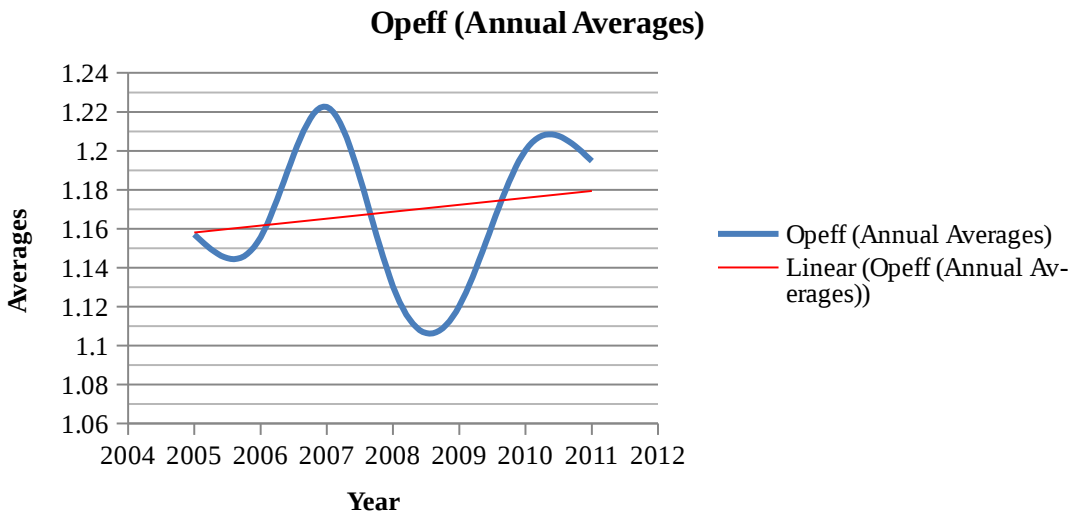

Figure 2.2: Trend in Annual Mean of Operating Efficiency

Source: Research, 2013

The trend depicted that there was a gradual upward trend of the annual averages of operating efficiency from 2005 to 2011 as indicated in the trend line, Figure 4.2. In 2005, the average was about 1.155 while in 2011 the average had increased to 1.18. There was a great down surge in the annual mean of operating efficiency of the Kenyan-banking sector between the years 2007 and 2008, this reduction in mean operating efficiency may be attributed to election and post election violence that took place the years 2007 and 2008.

4.1.5 Correlation Results for the Relationship between IVs and DV

Correlation coefficient (r) shows the relationship between the variables. Correlation coefficients in a matrix fall between a number 1.0 and -1.0. For the perfect positive linear relationship between two variables, the correlation coefficient is 1.0 and for a perfect negative linear relationship between two variables, the correlation coefficient is -1.0. A correlation coefficient of zero means that there is no linear relationship between the variables in measure. High correlation between the independent variables though can lead to a high value of the adjusted R-squared coefficient may be misleading. Adjusted R-square is the coefficient of determination that gives the degree to which the variation in dependent variable is explained by the predictor variables in their entirety. A correlation coefficient of greater than 0.8 between two independent variables means that there exists multicollinearity. Stata automatically checks for multicollinearity when performing regression and omits the regressor variable in the process. The correlation matrix results in appendix IV, showed that there existed multicollinearity, between loan loss provision/total loans ratio and net charge off/average gross loans ratio ($r > 0.8$).

Table 4.2: Correlation Matrix Result

	opeff	ccr	tcr	tca	cea	ncoagl	llptl	llpe	llrgl	ibr	lr	nltdb	ladstf	nim	oiaa	roa	roe	rep	llpnir	llril	ilgl	nconibp
Operating efficiency	1.0																					
Core Capital Ratio	0.1	1.0																				
Tier 1 Risk:-Based Capital Ratio	0.1	-0.3	1.0																			
Total Capital Ratio	0.1	-0.3	1.0	1.0																		
Equity Capital to Total Assets Ratio	0.1	-0.1	0.8	0.8	1.0																	
Net charge off/ average gross loans	0.0	0.0	0.0	0.0	-0.1	1.0																
Loan loss provision/ Total loans and advances	0.0	0.0	0.0	0.0	-0.1	1.0	1.0															
Loan loss provision/ total equity	-0.1	0.0	-0.1	-0.1	-0.1	0.8	0.8	1.0														
Loan loss reserve/ gross loans and advances	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	1.0													
Interbank: Ratio	0.1	-0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	1.0												
Loan Ratio	-0.4	0.0	-0.5	-0.5	-0.2	-0.1	-0.1	0.1	0.0	0.0	1.0											
Net loans/ total deposits and borrowing	-0.3	-0.1	-0.2	-0.2	0.2	0.0	0.0	0.1	0.0	0.1	0.9	1.0										
Liquid assets/ deposits and short term funding	0.1	-0.1	0.7	0.7	0.3	0.0	0.0	-0.1	0.0	0.0	-0.7	-0.5	1.0									
Net Interest Margin	0.1	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1	0.1	0.0	0.0	0.0	1.0								
Other operating income/ average assets	-0.1	0.0	0.2	0.2	0.4	0.1	0.1	0.0	0.1	0.2	0.1	0.2	-0.1	0.1	1.0							
Return on Assets	0.8	0.0	0.1	0.1	0.2	-0.1	-0.1	-0.1	0.0	0.1	-0.1	0.0	-0.1	0.1	0.3	1.0						
Return on Equity	0.6	0.0	-0.2	-0.2	-0.2	0.0	0.0	0.0	-0.1	0.0	-0.1	0.0	-0.1	0.0	0.1	0.7	1.0					
Recurring Earning Power	0.2	0.1	0.0	0.0	0.0	0.6	0.6	0.7	0.0	0.0	0.0	0.0	-0.1	0.1	0.1	0.3	0.2	1.0				
Loan loss provision/ net interest	-0.1	0.0	-0.1	-0.1	-0.1	0.9	0.9	0.8	0.1	0.0	0.0	0.0	-0.1	0.1	0.0	-0.1	-0.1	0.5	1.0			
Loan loss reserve/ impared (non performing) loans	0.2	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	-0.1	-0.1	1.0		
Impared loans/ gross loans	-0.2	0.1	0.1	0.0	0.1	0.8	0.8	0.7	0.2	0.0	-0.1	0.0	0.0	0.0	0.1	-0.2	-0.2	0.5	0.8	-0.2	1.0	
Net charge off/ net income before loan loss provisions	-0.2	0.0	0.0	0.0	0.1	0.4	0.4	0.3	0.0	0.0	0.1	0.1	-0.1	0.0	0.0	-0.2	-0.1	0.2	0.4	-0.2	0.3	1.0

Source: Research, 2013

4.1.6 Serial Correlation

Serial correlation occurs when error terms from various times are correlated. Presence of serial correlation affects the dependent variable, operating efficiency (Wooldridge, 2002). When the estimates of the standard errors are smaller than the true standard errors, then this could lead to the conclusion that the parameter estimates are more precise than they really are, causing the tendency of rejecting the null hypothesis when it should not be rejected. In this study, the null hypothesis was tested that there is no serial correlation or the alternative that there is serial correlation. Using stata, the outcome was less than 0.05, which means rejection of the null hypothesis and conclusion that there was presence of serial correlation in the study set.

4.2 Panel Data Analysis

In panel data analysis, a Hausman test was run to decide whether to apply fixed effects regression techniques or the random effects regression techniques. The Hausman test checks for a more efficient model against a less efficient one and makes sure that the more efficient model gives consistent results (Baltagi, 2008). In the test, the null hypothesis states that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. Table 4.2 gives the Hausman test output. Since the p-value was significant ($p<0.05$) the null hypothesis was therefore rejected and concluded that fixed effects was the best model to use.

Table 4.3: Hausman Test Output

Independent Variables	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
opefflag	.0517063	.3157152	-.264009	.0427935
Cca	.0690845	.0823762	-.0132917	.0359505
Trc	-.0797016	.3700343	-.4497359	.6180358
Tca	.4148369	-.2215742	.6364111	.5589539
Cea	-.7623432	-.4346231	-.3277201	.1439911
Ncoagl	1.169254	.8288446	.3404097	.
Llpe	.0616638	.0327115	.0289523	.0204892
Llrgl	-.7815585	.4059354	-1.187494	.3248552
Ibr	-.0000186	8.53e-07	-.0000194	3.57e-06
Lr	.0989705	-.4398383	.5388088	.0846927
Nltdb	.0789567	.1963873	-.1174306	.
Ladstf	.2244327	-.0290849	.2535176	.0748579
Nim	.1165821	-.0668282	.1834102	.031378
Oiaa	-1.914484	-1.156037	-.7584471	.540132
Roa	8.025019	6.587025	1.437994	.1326508
Roe	-.1317402	-.0265026	-.1052376	.
Rep	-.1056824	-.1470373	.0413549	.
Llpnir	-.0597128	-.0266633	-.0330495	.0121074
Llril	-.0454333	.0069131	-.0523464	.038817
Ilgl	-.4959746	-.3772452	-.1187294	.0655698
nconibllp	-.0525208	-.0310056	-.0215153	.

Prob>chi2 = 0.0000

Source: Research, 2013

The study used fixed-effects (FE) regression to test the null hypothesis Ho_1, Ho_2, Ho_3, Ho_4 and Ho_5. To run a fixed effects regression analysis for the panel data, firstly, dummy variable equal to 1 if the bank is high market share and 0 if the bank is low market share were created. Then new variables were created by multiplying the high market share dummy variable by each of the independent variables. To determine the optimal combination of variables, tests for different combinations were regressed against the

dependent variable (operating efficiency) using variables from each category of the independent variable together with its dummy variable. The variable that formed part of the optimal model served as the best proxy for the main independent variable (capital adequacy, credit risk, liquidity, profitability and asset quality) for the study. Assuming independence of observations on the dependent variable, the general interest was to test whether there was any statistical significance between the response variable and the explanatory variables. In other words, the study endeavored to test if the specific performance indicators had any effect on operational efficiency of banks.

4.3 Market Share Index Analysis

4.3.1 High and Low Market Share Banks

This section categorized firms to either low or high market share index by determining the average operating efficiency of the firms from 2005-2011. The banks categorized under low market share lay below the average market share index (2.486) while those that lay above the average market share index (2.486) formed the high market share banks. On average, 31 representing 72% of total banks belonged to the low market share while 12 representing 28% of banks belonged to the high market share during the study period. The minimum share index recorded was 0.14 while the highest share index recorded was 17.3. Based on the overall average for the study period, Kenya Commercial Bank had the highest market share index while United Bank for Africa had the lowest market share index. The study aim was to determine if there existed significant structural differences between the high market share banks and the low market share banks during the study period. To do this, dummy variable equal to one if the bank is high market share and zero if the bank is low market share was created. Using stata, new variables were

generated by multiplying the high market share dummy variable by each of the independent variables. The new variables were then included together with the regular variables in carrying out the analysis. Figure 4.3 gives the spread of firms from the average market share index (2.486).

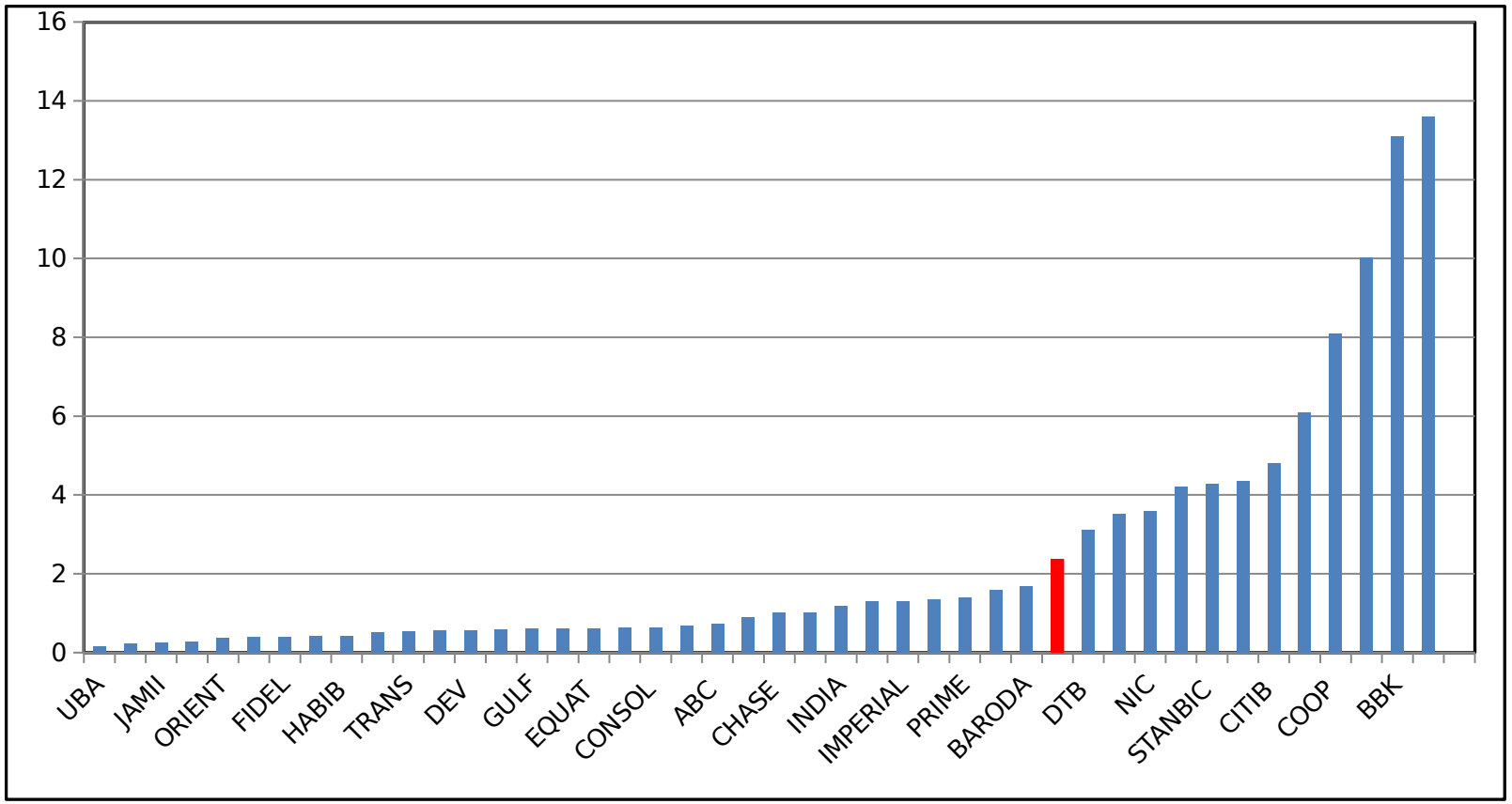

Figure 4.3: Average Market Share Index (2005 - 2011)

Source: Research, 2013

4.3.2 Average Market Share Index Trend

Figure 4.4 indicates the average market share index trend of low and high banks from the year 2005 to 2011. The graph clearly showed that the average market share index of high performing banks was extremely higher compared to low market share index banks during the study period. The trend was almost constant across the years.

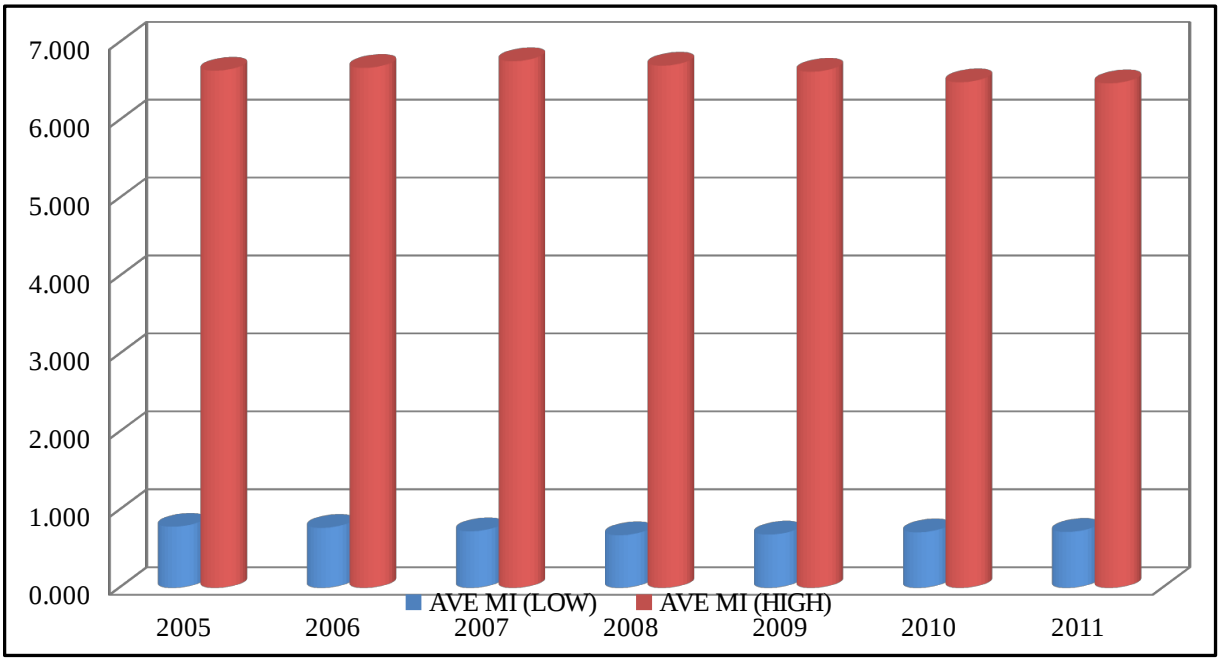

Figure 4.4: Average Market Share Index Trend

Source: Research, 2013

4.4 Determination of Optimal Combination of Proxy Variables

To determine the optimal combination of proxy variables for each category of the independent variables, stepwise regressions were run for variables in each category in search of the best proxy that was significant in effecting operating efficiency. Proxy variables (significant) from each category of the independent variables were subjected to further tests together with the dummy variables in bid to determine the optimal model for

operating efficiency of banks. According to this study, the optimal model was the model that statistically gave the best combination of proxy variables for capital adequacy, credit risk, liquidity, profitability and asset quality that explained operational efficiency for banks. The variables included Equity to total assets ratio as proxy for Capital Adequacy, Loan loss provision /equity as proxy for Credit Risk. Liquid assets/deposits and short term funding, Loan ratio and Interbank ratio as proxies for Liquidity, Other operating income/average assets, and Recurring earning power as proxies for Profitability and finally, Loan loss provision/net interest revenue and Loan loss reserve/ impared loans as proxies for Asset Quality. The existence of structural difference between the low and high market share banks was tested by the significance of the dummy*proxy variables. When the dummy*proxy variable was significant, it implied that there was statistically significant structural difference between the two groups of banks.

4.4.1 Fixed Effects Regression with First Combination Variables

The objective of the following analyses was to seek for the most optimal combination of variables that can best explain the changes in operating efficiency of banks. Table 4.3 shows the regression output for the variables Equity to total assets ratio as proxy for Capital Adequacy, Loan loss provision /equity as proxy for Credit Risk. Liquid assets/deposits and short term funding as proxy for Liquidity, Other operating income/average assets as proxy for Profitability and Loan loss reserve/ impared loans as proxy for Asset Quality which formed the first combination.

Table 4.4: Fixed Effects Regression Output with First Combination Variables

```
Fixed-effects (within) regression               Number of obs      =       175
Group variable: code                            Number of groups   =        39
R-sq:  within  = 0.3039                         Obs per group: min =         1
       between = 0.5028                                        avg =       4.5
       overall = 0.5333                                        max =         6
                                                F(11,125)          =      4.96
corr(u_i, Xb)  = -0.1831                        Prob > F           =    0.0000
------------------------------------------------------------------------------
       opeff |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    opefflag |   .2329605    .065454     3.56   0.001      .103419     .362502
         cea |  -.5168617   .2568879    -2.01   0.046    -1.025275   -.0084487
        llpe |  -.4223479   .1033342    -4.09   0.000    -.6268592   -.2178367
      ladstf |   .1154901   .1128751     1.02   0.308    -.1079037     .338884
        oiaa |   1.581594   .6879293     2.30   0.023     .2200961    2.943091
       llril |   .1460944   .0661965     2.21   0.029     .0150832    .2771055
        dcea |   1.704013   .8083711     2.11   0.037     .1041467     3.30388
       dllpe |   .6679001   .1785341     3.74   0.000      .314559    1.021241
     dladstf |    .153202   .1496277     1.02   0.308    -.1429297    .4493338
       doiaa |  -4.034058   2.259827    -1.79   0.077    -8.506536    .4384211
      dllril |  -.0954581   .1070703    -0.89   0.374    -.3073635    .1164472
       _cons |   .8565559   .1016796     8.42   0.000     .6553194    1.057792
-------------+----------------------------------------------------------------
     sigma_u |  .12054092
     sigma_e |  .07342618
         rho |  .72936782   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(38, 125) =     3.19             Prob > F = 0.0000
```

Source: Research, 2013

Overall, the regressors predict the change in bank operating efficiency. As shown by the model p-value, p = 0.000 < 0.05, implying that the model is strongly fitted. The model fit was tested by coefficient of determination R^2. As shown in the results, the predictors explain approximately 53% of the variations in the bank operating efficiency. The forecast power of the model is moderate as predictors explain close to half of the variations in the model. From the output Table 4.3, the result indicate that the operating efficiency of a firm today significantly influences its operating efficiency a year later as indicated by the p-value = 0.001< 0.05. As shown by the coefficients, a unit increase in operating efficiency leads to a 0.233 increase in a bank operating efficiency in the succeeding year.

Capital adequacy as proxy by equity capital to total assets ratio (cea) was negatively significant in influencing operating efficiency as indicated by the p-value = 0.046 < 0.05. As shown by the coefficients, a unit increases in equity capital to total assets ratio leads to a 0.517 decrease in bank operational efficiency. The dummy*equity capital to total assets ratio (dcea) was positively significant as indicated by the p-value = 0.037 < 0.05. The result implied that capital adequacy proxy by equity capital to total assets was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low market share banks and high market share banks, since the dummy*equity capital to total assets ratio was also significant.

Credit risk proxy by loan loss provision to total equity ratio (llpe) significantly influences operating efficiency as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in loan loss provision to total equity ratio leads to a 0.422 decrease in bank operational efficiency. The dummy*loan loss provision to total equity ratio (dllpe) was positively significant as indicated by the p-value = 0.000 < 0.05. This result implied that credit risk proxy by loan loss provision to total equity ratio was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low market share banks and high market share banks, since the dummy*loan loss provision to total equity ratio was also significant.

Albeit insignificant, the liquidity of a firm as proxy by liquid assets to deposits and short term funding ratio (ladstf) had positive influence on firm operating efficiency. Notably, a unit increase in liquid assets to deposits and short term funding ratio leads to a 0.115

increase in firm operational efficiency. The same applies to dummy* liquid assets to deposits and short term funding ratio (dladstf) which was insignificant. The result implied that liquidity proxy by liquid assets to deposits and short term funding ratio was in significant in influencing operating efficiency for low market share banks. There was statistically significant structural difference between low market share banks and high market share banks since the dummy*liquid assets to deposits and short term funding ratio was also insignificant.

Profitability as proxy by other operating income to average assets ratio (oiaa) had a significant influence on operating efficiency as indicated by the p-value = 0.023 < 0.05. As shown by the coefficients, a unit increases in other operating income to average assets ratio leads to a 1.582 increase in banks' operational efficiency. The dummy*other operating income to average assets ratio (doiaa) was positively significant as indicated by the p-value = 0.077 < 0.1. The result implied that profitability proxy by other operating income to average assets was positively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks since the dummy*other operating income to average assets ratio (doiaa) was also significant.

Asset quality proxy by loan loss reserve to impared loans ratio (llril) was positively significant in influencing operating efficiency for banks as indicated by the p-value = 0.029 < 0.05. As shown by the coefficients, a unit increases in loan loss reserve to impared loans ratio leads to a 0.146 increase in bank operational efficiency. However, the dummy* loan loss reserve to impared loans ratio (dllril) was negatively insignificant as indicated by the p-value = 0.374 > 0.05. This implied that asset quality proxy by loan loss

reserve to impared loans was positively significant in influencing operating efficiency for low market share banks, and that there was no statistically significant structural difference between low and high market share banks, since the dummy* loan loss reserve to impared loans ratio was insignificant.

4.4.2 Fixed Effects Regression with Second Combination Variables

The second combination variables included Equity to total assets ratio as proxy for Capital Adequacy, Loan loss provision /equity as proxy for Credit Risk, Interbank ratio as proxy for Liquidity, Recurring earning power as proxy for Profitability and Loan loss provision/net interest revenue as proxy for Asset Quality. Table 4.4 shows output result of the regression analysis.

As shown in the result, the predictors explain approximately 64% overall of the variations in the bank operational efficiency. The forecast power of the model is above average as predictors explain more than half of variations in the model. Overall, the regressors predict the change in bank operating efficiency as shown by the model p- value, $p = 0.000 < 0.05$, implying that the model is strongly fitted. From the output table, the result indicate that the operating efficiency of a firm today significantly influences its operating efficiency a year later as indicated by the p-value = $0.001 < 0.05$. As shown by the coefficients, a unit increase in operating efficiency leads to a 0.194 increase in a bank operating efficiency in the succeeding year.

Table 4.5: Fixed Effects Regression Output with Second Combination Variables

```
Fixed-effects (within) regression               Number of obs      =       190
Group variable: code                            Number of groups   =        40

R-sq:  within  = 0.5288                         Obs per group: min =         1
       between = 0.7555                                        avg =       4.8
       overall = 0.6446                                        max =         6

                                                F(11,139)          =     14.18
corr(u_i, Xb)  = -0.2450                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       opeff |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    opefflag |   .1943519   .0575257     3.38   0.001     .0806134    .3080904
         cea |  -.5618449   .2394503    -2.35   0.020    -1.035281   -.0884091
        llpe |  -.3117466    .146723    -2.12   0.035    -.6018441   -.0216491
         ibr |   9.63e-06   .0000119     0.81   0.421    -.0000139    .0000332
         rep |   6.562525   .8027451     8.18   0.000     4.975355    8.149695
      llpnir |  -.1921441   .0492628    -3.90   0.000    -.2895454   -.0947429
        dcea |   1.892046    .489882     3.86   0.000     .9234624     2.86063
       dllpe |   .8143223   .1892059     4.30   0.000     .4402286    1.188416
        dibr |  -.0000222    .000015    -1.48   0.141    -.0000519    7.47e-06
        drep |  -6.570066   .8202973    -8.01   0.000    -8.191939   -4.948192
     dllpnir |   .1426218   .0543647     2.62   0.010     .0351331    .2501105
       _cons |   .9023106   .0805546    11.20   0.000     .7430399    1.061581
-------------+----------------------------------------------------------------
     sigma_u |  .08416151
     sigma_e |  .06584979
         rho |  .62027675   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(39, 139) =     3.47                 Prob > F = 0.0000
```

Source: Research, 2013

Capital adequacy as proxy by equity capital to total assets ratio (cea) was negatively significant in influencing operating efficiency for banks as indicated by the p-value = 0.020 < 0.05. As shown by the coefficients, a unit increases in equity capital to total assets ratio leads to a 0.562 decrease in bank operational efficiency. The dummy*equity capital to total assets ratio (dcea) was positively significant as indicated by the p-value = 0.000 < 0.05. This result implied that capital adequacy proxy by equity capital to total assets was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and

high market share banks since the dummy* equity capital to total assets ratio was also significant.

Credit risk proxy by loan loss provision to total equity ratio (llpe) was statistically significant in influencing bank operational efficiency as indicated by the p-value = 0.035 < 0.05. As shown by the coefficients, a unit increases in loan loss provision to total equity ratio leads to a 0.312 decrease in bank operational efficiency. The dummy*loan loss provision to total equity ratio (dllpe) was positively significant as indicated by the p-value = 0.000 < 0.05. This implied that credit risk proxy by loan loss provision to total equity was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks since the dummy*loan loss provision to total equity ratio (dllpe) was also significant.

Despite insignificant, the liquidity of a firm as proxy by interbank ratio (ibr) had positive influence on bank operational efficiency. Notably, a unit increase in interbank ratio leads to a 0.00000963 increase in firm operational efficiency. The same applies to the dummy*interbank ratio (dibr) which was negatively insignificant. This implied that liquidity proxy by interbank ratio had insignificant influence on operating efficiency for banks.

Profitability as proxy by recurring earning power ratio (rep) was positively significant in influencing bank operational efficiency as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in recurring earning power leads to a 6.562 increase in bank operational efficiency. The dummy*recurring earning power (drep) was

negatively significant as indicated by the p-value = 0.000 < 0.05. This implied that profitability proxy by recurring earning power was positively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks since the dummy*recurring earning power (drep) was significant.

Asset quality proxy by loan loss provision to net revenue (llpnir) was negatively significant in influencing bank operational efficiency as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increase in loan loss provision to net revenue leads to a 0.192 decrease in bank operational efficiency. The dummy*loan loss provision to net revenue (dllpnir) was positively significant as indicated by the p-value = 0.010 < 0.05. This implied that asset quality proxy by loan loss provision to net revenue was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks, since the dummy*loan loss provision to net revenue (dllpnir) was significant.

4.4.3 Fixed Effects Regression with Third Combination Variables

The third combination variables included Equity to total assets ratio as proxy for Capital Adequacy, Loan loss provision /equity as proxy for Credit Risk, Loan ratio as proxy for Liquidity, Recurring earning power as proxy for Profitability and Loan loss provision/impared loans as proxy for Asset Quality. Table 4.5 shows output result of the regression analysis.

Table 4.6: Fixed Effects Regression Output with Third Combination Variables

```
Fixed-effects (within) regression               Number of obs      =       175
Group variable: code                            Number of groups   =        39
R-sq:  within  = 0.4404                         Obs per group: min =         1
       between = 0.8080                                        avg =       4.5
       overall = 0.7030                                        max =         6

                                                F(11,125)          =      8.94
corr(u_i, Xb)  = -0.1734                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       opeff |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    opefflag |   .1933185   .0570899     3.39   0.001     .0803305    .3063065
         cea |  -.5347318   .2286533    -2.34   0.021    -.9872649   -.0821986
        llpe |  -.6134458   .0973049    -6.30   0.000    -.8060242   -.4208673
          lr |  -.1552939   .1554582    -1.00   0.320    -.4629649    .1523771
         rep |   3.742819    .601109     6.23   0.000     2.55315    4.932489
       llril |   .1329331    .059523     2.23   0.027     .0151297    .2507364
        dcea |   2.150782    .707588     3.04   0.003     .7503773    3.551186
       dllpe |   .8682394   .1635841     5.31   0.000     .5444862    1.191993
         dlr |  -.1140783   .1817562    -0.63   0.531    -.4737964    .2456398
        drep |  -3.863452   .6250992    -6.18   0.000    -5.100601   -2.626303
      dllril |  -.1426748   .0899718    -1.59   0.115    -.3207401    .0353905
       _cons |   1.016507   .0984387    10.33   0.000      .821685     1.21133
-------------+----------------------------------------------------------------
     sigma_u |  .07510655
     sigma_e |  .06583568
         rho |  .56549443   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(38, 125) =     2.05             Prob > F = 0.0017
```

Source: Research, 2013

As shown in the table, the predictors explain approximately 70% overall of the variations in the bank operational efficiency. The forecast power of the model is above average as predictors explain more than half of variations in the model. Overall, the regressors predict the change in bank operating efficiency as shown by the model p- value, p = 0.000 < 0.05, implying that the model is strongly fitted. The result also indicate that the operating efficiency of a firm today significantly influences its operating efficiency a year later as indicated by the p-value = 0.001< 0.05. As shown by the coefficients, a unit increase in operating efficiency leads to a 0.193 increase in a bank operating efficiency in the succeeding year.

Capital adequacy as proxy by equity capital to total assets ratio (cea) was negatively significant in influenced operating efficiency for banks as indicated by the p-value = 0.021 < 0.05. As shown by the coefficients, a unit increases in equity capital to total assets ratio leads to a 0.535 decrease in bank operational efficiency. The dummy*equity capital to total assets ratio (dcea) was positively significant as indicated by the p-value = 0.003 < 0.05. This result implied that capital adequacy proxy by equity capital to total assets ratio was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks, since the dummy*equity capital to total assets ratio (dcea) was significant.

Credit risk proxy by loan loss provision to total equity ratio (llpe) was negatively significant in influencing banks' operating efficiency as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in loan loss provision to total equity ratio leads to a 0.613 decrease in bank operational efficiency. The dummy*loan loss provision to total equity (dllpe) was positively significant as indicated by the p-value = 0.000 < 0.05. This result implied that credit risk proxy by loan loss provision to total equity was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between the low and high market share banks, since the dummy*loan loss provision to total equity (dllpe) was significant.

Despite being insignificant, the liquidity of a firm as proxy by loan ratio (lr) had negative influence on bank operational efficiency as indicated by p-value = 0.320 > 0.05. Notably, a unit increase in loan ratio leads to a 0.155 decrease in firm operational efficiency. The

same applied to the dummy*loan ratio (dlr) which was insignificant as indicated by the p-value = 0.531> 0.05. This implied that liquidity proxy by loan ratio had insignificant influence on banks' operational efficiency.

Profitability as proxy by recurring earning power (rep) was positively significant in influencing operating efficiency for banks as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in recurring earning power leads to a 3.743 increase in bank operational efficiency. The dummy*recurring power ratio (drep) was negatively significant as indicated by the p-value = 0.000 < 0.05. The result implied that profitability proxy by recurring earning power was positively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks, since the dummy*recurring power ratio (drep) was significant.

Asset quality proxy by loan loss reserve to impared loans ratio (llril) was positively significant in influencing banks' operational efficiency as indicated by the p-value = 0.027 < 0.05. As shown by the coefficients, a unit increase in loan loss provision to net revenue leads to a 0.133 increase in bank operational efficiency. The dummy*loan loss reserve to impared loans ratio (dllril) was however insignificant as indicated by p-value = 0.115 > 0.05. The result implied that asset quality proxy by loan loss provision to net revenue ratio was positively significant in influencing operating efficiency for low market share banks, and that there was no statistically significant structural difference between low and high market share banks, since the dummy*loan loss reserve to impared loans ratio (dllril) was insignificant.

4.4.4 Fixed Effects Regression with Fourth Combination Variables

The fourth combination variables included Equity to total assets ratio as proxy for Capital Adequacy, Loan loss provision /equity as proxy for Credit Risk, Liquid assets/deposits and short term funding as proxy for Liquidity, Recurring earning power as proxy for Profitability and Loan loss provision/impared loans as proxy for Asset Quality. Table 4.6 shows output result of the regression analysis.

Table 4.7: Fixed Effects Regression Output with Fourth Combination Variables

```
Fixed-effects (within) regression               Number of obs      =       175
Group variable: code                            Number of groups   =        39

R-sq:  within  = 0.4427                         Obs per group: min =         1
       between = 0.7868                                        avg =       4.5
       overall = 0.7033                                        max =         6

                                                F(11,125)          =      9.03
corr(u_i, Xb)  = 0.0062                         Prob > F           =    0.0000

------------------------------------------------------------------------------
       opeff |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    opefflag |   .1876535   .0569127     3.30   0.001     .0750163    .3002908
         cea |  -.5091274   .2285595    -2.23   0.028    -.9614751   -.0567798
        llpe |  -.6013343    .097412    -6.17   0.000    -.7941247    -.408544
      ladstf |   .1290026   .1002535     1.29   0.201    -.0694116    .3274167
         rep |   3.750839   .5994453     6.26   0.000     2.564462    4.937215
       llril |   .1317991   .0592631     2.22   0.028     .0145101    .2490881
        dcea |   1.384451    .688647     2.01   0.047     .0215331    2.747369
       dllpe |   .8165718   .1620016     5.04   0.000     .4959506    1.137193
     dladstf |   .1156484   .1319638     0.88   0.383    -.1455243    .3768212
        drep |  -3.843129   .6233143    -6.17   0.000    -5.076745   -2.609512
      dllril |  -.1249933   .0893348    -1.40   0.164    -.3017979    .0518114
       _cons |   .8706336   .0872454     9.98   0.000     .6979641    1.043303
-------------+----------------------------------------------------------------
     sigma_u |   .0792202
     sigma_e |  .06569844
         rho |  .59250056   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(38, 125) =     2.31                 Prob > F = 0.0003
```

Source: Research, 2013

As shown in the output result, the predictors explain approximately 70% overall of the variations in the bank operational efficiency. The forecast power of the model is above average as predictors explain more than half of variations in the model. Overall, the

regressors predict the change in bank operating efficiency as shown by the model p-value, p = 0.000 < 0.05, implying that the model is strongly fitted. Further, the result indicate that the operating efficiency of a firm today significantly influences its operating efficiency a year later as indicated by the p-value = 0.001< 0.05. As shown by the coefficients, a unit increase in operating efficiency leads to a 0.188 increase in a bank operating efficiency in the succeeding year.

Capital adequacy proxy by equity capital to total assets ratio (cea) was negatively significant in influencing bank operational efficiency as indicated by the p-value = 0.028 < 0.05. As shown by the coefficients, a unit increases in equity capital to total assets ratio leads to a 0.509 decrease in bank operational efficiency. The dummy*equity capital to total assets ratio was positively significant as indicated by the p-value = 0.047 < 0.05. This result implied that capital adequacy proxy by equity capital to total assets was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low and high market share banks, since the dummy*equity capital to total assets ratio was significant.

Credit risk proxy by loan loss provision to total equity ratio (llpe) was negatively significant in influencing operating efficiency for banks as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in loan loss provision to total equity ratio leads to a 0.601 decrease in bank operational efficiency. The dummy*loan loss provision to total equity ratio (dllpe) was positively significant as indicated by the p-value = 0.000 < 0.05. This implied that credit risk proxy by loan loss provision to total equity ratio was negatively significant in influencing operating efficiency for low market share banks, and that there was statistically significant structural difference between low

and high market share banks, since the dummy*loan loss provision to total equity ratio (dllpe) was significant.

Despite insignificant, as indicated by p-value = 0.201 > 0.05, the liquidity of a firm as proxy by liquid asset to deposits and short term funding ratio (ladstf) had positive influence on banks' operational efficiency. Notably, a unit increase in liquid asset to deposits and short term funding ratio leads to a 0.129 increase in firm operational efficiency. The same applies to the dummy*liquid asset to deposits and short term funding ratio (dladstf) which was positively insignificant as indicated by p-value = 0.383 > 0.05.

Profitability as proxy by recurring earning power ratio (rep) was positively significant in influencing operating efficiency for banks as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in recurring earning power leads to a 3.751 increase in bank operational efficiency. The dummy*recurring power ratio (drep) was negatively significant as indicated by the p-value = 0.000 < 0.05. This result implied that profitability proxy by recurring earning power was positively significant in influencing operating efficiency for low market share banks, and that there was statistically significant difference between low and high market share banks, since the dummy*recurring power ratio (drep) was significant.

Asset quality proxy by loan loss reserve to impared loans ratio (llril) was positively significant in influencing banks' operational efficiency as indicated by the p-value = 0.028 < 0.05. As shown by the coefficients, a unit increase in loan loss provision to net revenue leads to a 0.132 increase in bank operational efficiency. The dummy*loan loss

reserve to impared loans ratio (dllril) was negatively insignificant as indicated by p-value = 0.164 > 0.05. This result implied that asset quality proxy by loan loss reserve to impared loans was positively significant in influencing operating efficiency for low market share banks, and that there was no statistically significant structural difference between low and high market share banks, since the dummy*loan loss reserve to impared loans ratio (dllril) was insignificant.

4.4.5 Selection of Optimal Combination Variables

According to this study, optimal combination variables referred to a set of variables (proxy) from each category of the independent variables, capital adequacy, credit risk, liquidity, profitability and asset quality that when combined, formed the optimal model that best explained the variations in operating efficiency for banks. From the above regression analyses, it was clear that in all the models, the regressors predicted the change in bank operational efficiency as shown by the model p- value = 0.000 < 0.05, implied that all models were strongly fitted. Secondly, it was also clear that lagged operating efficiency was significant in all the models. This implied that the operating efficiency of a bank today significantly influences its operating efficiency a year later. Table 4.7 shows a summary of the output results for the different combination tests above.

Table 4.8: Summary of Various Regression Results

Regression Output Table No.	Variables	Effect on the dependent variable	coefficients	R-square
4.3	Equity/total assets	Significant	-0.517	Within -30.4% Overall -53.33%
	Loan loss provision /equity	Significant	-0.422	
	Liquid assets/deposits and short term funding	Insignificant	0.115	
	Other operating income/average assets	Significant	1.582	
	Loan loss reserve/ impared loans	Significant	0.146	
4.4	Equity/total assets	Significant	-0.562	Within -52.88% Overall-64.46%
	Loan loss provision /equity	Significant	-0.312	
	Interbank ratio	Insignificant	0.0000096	
	Recurring earning power	Significant	3	
	Loan loss provision/net interest revenue	Significant	6.563	
			-0.192	
4.5	Equity/total assets	Significant	-0.535	Within -44.04% Overall -70.3%
	Loan loss provision /equity	Significant	-0.613	
	Loan ratio	Insignificant	-0.155	
	Recurring earning power	Significant	3.743	
	Loan loss reserve/ impared loans	significant	0.133	
4.6	Equity/total assets	Significant	-0.509	Within -44.27% Overall -70.3%
	Loan loss provision /equity	Significant	-0.601	
	Liquid assets/deposits and short term funding	Insignificant	0.129	
	Recurring earning power	Significant	3.751	
	Loan loss reserve/ impared loans	Significant	0.132	

Source: Research, 2013

From the Summary Table 4.8 above, it was clear that equity to total assets was significant in all sets of combination. This implied that it was the optimal proxy for capital adequacy influencing operational efficiency. Loan loss provision /equity ratio was also significant

in all combinations implying that it was the best proxy for credit risk explaining operational efficiency for banks. Liquid assets/deposits and short-term funding ratio, Interbank ratio and Loan ratio were all insignificant in influencing operating efficiency. However, interbank ratio had the lowest coefficient amongst the three; hence, the most optimal proxy for liquidity because of its contribution in influencing operating efficiency was minimal. Other operating income/average assets and Recurring earning power were all significant in all combinations. However, Recurring-earning power ratio had the highest coefficient value compared to other operating income/average assets ratio. Thus, its contribution to variations in operating efficiency was high. Hence, Recurring-earning power ratio was the optimal proxy for profitability influencing operating efficiency. Loan loss reserve/ impared loans ratio and Loan loss provision/net interest revenue ratio were significant in all the combinations. However, loan loss provision/net interest revenue ratio had the highest coefficient, meaning that it had highest contribution to variations in operating efficiency compared to Loan loss reserve/ impared loans ratio. Hence, loan loss provision/net interest revenue became the optimal proxy for asset quality influencing operating efficiency. From the analyses, Table 4.4 gave the optimal combination with the highest R^2 (within) = 52.88% and overall R^2 = 64.46%. Table 4.9 shows a summary of the optimal variables and their effect on banks' operating efficiency.

Table 4.9: Summary of Optimal Regression Result

R-Sq: Within = 0.5288	P > F = 0.000
Between = 0.7555	95% Confidence Interval
Overall = 0.6446	

Independent Variable (Proxy ratio)	**Coefficient**	**P- Value**	**Effect on Operating Efficiency**
Capital Adequacy (Equity to total assets)	-0.562	0.020	Negatively Significant
Credit Risk (Loan loss provision to total equity)	-0.312	0.035	Negatively Significant
Liquidity (Interbank ratio)	+0.00000963	0.421	Positively insignificant
Profitability (Recurring earning power)	+6.563	0.000	Positively significant
Asset Quality (Loan loss provision to net interest revenue)	-0.192	0.000	Negatively significant
Capital Adequacy (dummy*equity to total assets)	1.892	0.000	Positively significant
Credit Risk (dummy*loan loss provision to total equity)	0.814	0.000	Positively significant
Liquidity (dummy*interbank ratio)	-0.000	0.141	Negatively significant
Profitability (dummy*recurring earning power)	-6.570	0.000	Negatively significant
Asset Quality (dummy*Loan loss provision to net interest revenue)	0.143	0.010	Positively significant

Source: Research, 2013

4.4.6 Implications from the Optimal Model

Table 4.9 shows a summary of the optimal variables and their affect on operating efficiency. The predictors explained approximately 64% of the variations in bank

operational efficiency. The forecast power of the model was above average as predictors explained more than half of variations in the model. Overall, the regressors predicted the change in bank operating efficiency as shown by the model p- value = 0.000 < 0.05, implying that the model was strongly fitted. Lagged operating efficiency was significant at p- value = 0.001< 0.05, implying that operating efficiency of a bank today significantly influences its operating efficiency a year later. As shown by the coefficients, a unit increase in operating efficiency leads to a 0.194 increase in a bank operating efficiency in the succeeding year.

Capital adequacy as proxy by equity capital to total assets ratio was negatively significant in influencing bank operational efficiency as indicated by the p-value = 0.020 < 0.05. As shown by the coefficients, a unit increases in equity capital to total assets ratio led to a 0.562 decrease in bank operational efficiency. The dummy*equity capital to total assets ratio was significant at p-value = 0.000 < 0.05. The results implied that capital adequacy proxy by equity capital to total assets ratio was negatively significant in influencing operating efficiency for low market share banks and that there was statistical significant structural difference between low market share banks and high market share banks. The study therefore rejected the null hypothesis Ho_1 and concluded that capital adequacy proxy by equity capital to total assets ratio affects operating efficiency for banks. Banks need to concentrate on capital adequacy and particularly on equity capital to total assets ratio as a way of improving their operating efficiency. This result was inconsistent with previous findings (Yener *et.al*, 2007) that the inefficient European banks appeared to hold more capital and take on less risk. The CBK should emphasize on banks increasing their capital levels in order to increase their operational efficiency. Clearly, efficiency has a

cost and banks should be ready to accumulate adequate capital to be able to invest in efficiency through acquisition of new technology and provision of quality service to customers.

Credit risk proxy by loan loss provision to total equity significantly influenced operating efficiency as indicated by the p-value = 0.035 < 0.05. As shown by the coefficients, a unit increase in loan loss provision to total equity ratio led to a 0.312 decrease in bank operational efficiency. The dummy*loan loss provision to total equity ratio was significant as indicated by the p-value = 0.000 < 0.05. This implied that credit risk proxy by loan loss provision to total equity was negatively significant in influencing operating efficiency for low market share banks. Nevertheless, there was statistically significant structural difference between low market share banks and high market share banks since the dummy*loan loss provision to total equity ratio variable was significant. Therefore, the study concluded that credit risk proxy by loan loss provision to total equity ratio had a significant effect on operating efficiency of banks and rejected the null hypothesis Ho_2. The result was in agreement with the arguments of Saunders *et al.,* (1990) and Kwan, (1997) that agency problems between management and shareholders may also affect the relationship between credit risk and operational efficiency for banks. Risk taking is about the management's attitude, bank shareholders should ensure that the agency problems between them and management are minimized at all costs. Experienced and superior management should be employed to manage credit risk affairs of banks.

Despite insignificant, (p-value 0.421> 0.05), the liquidity of a firm as proxy by interbank ratio had positive influence on banks' operational efficiency. Notably, a unit increase in interbank ratio led to a 0.00000963 increase in firm operational efficiency. The same

applied to the dummy*interbank ratio which was insignificant as indicated by p-value = 0.141 > 0.05. The result implied that liquidity proxy by interbank ratio had insignificant influence on banks' operational efficiency. Therefore, the study failed to reject the null hypothesis Ho_3. This result was inconsistent with the arguments by Kashyap *et.al.* (2002), Gorton and Huang (2002), that banks that were liquid were more efficient in the sense that an efficient bank can produce more output part of which are liquid and other assets. The implications were that the CBK should not emphasize the minimum liquidity ratio for banks in order for them to increase their operational efficiency.

Profitability as proxy by recurring earning power significantly influenced banks' operational efficiency as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increases in recurring earning power led to a 6.562 increase in bank's operational efficiency. The dummy*recurring earning power ratio was significant as indicated by the p-value = 0.000 < 0.05. This implied that profitability proxy by recurring earning power ratio was positively significant in influencing operating efficiency for low market share banks. There was statistically significant structural difference between low and high market share banks as the dummy*recurring earning power ratio was significant. The null hypothesis Ho_4 was therefore rejected basing on this result. This result supports the findings of study by Dimitris (2008), that banks that were more profitably and had larger branches had higher operating efficiency. Banks should be allowed to engage in other related income generating activities in order to boost their earning power. However, as they do that, they should be conscious of the volatility of the risk involved due to the nature of their business.

Asset quality proxy by loan loss provision to net interest revenue ratio significantly influenced operating efficiency as indicated by the p-value = 0.000 < 0.05. As shown by the coefficients, a unit increase in loan loss provision to net revenue ratio led to a 0.192 decrease in bank operational efficiency. The dummy*loan loss provision to net revenue ratio was significant as indicated by the p-value = 0.010 < 0.05. This implied that asset quality proxy by loan loss provision to net revenue was negatively significant in influencing operating efficiency for low market share banks. Nevertheless, there was statistically significant structural difference between low market share banks and high markets share banks since the dummy*loan loss provision to net revenue ratio was significant. The, study rejected the null hypothesis Ho_5 based on the above result. The result was consistent with the claim by Ezeoha (2011) that sound regulatory structures ensured adherence to laid down rules, guide the corporate governance behaviors of banks and moderate the conducts of banks management. Thus, with this in place, banks may achieve operational efficiency through quality asset portfolio. Berger and Udel (1996) also advocated quality lending, also consistent with this result. Banks should optimally use their huge asset capacity to enhance their earnings profiles. At the same time, banks should avoid reckless lending that would increase the level of unsecured credits in banks' portfolio that eventually may lead to increased levels of non-performing loans, in order to enhance their operational efficiency.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview

The main objective of this study was to determine and evaluate the effects of bank specific performance indicators on bank operational efficiency. This chapter is composed of four Sections. The Section 5.1 presents a summary of the findings followed by Section 5.2 conclusions of the study, Section 5.3 recommendations from the study and lastly, Section 5.4 recommendations for future research.

5.1 Summary of Findings

From the data analyzed, it was found that the optimal model had a forecast power above average as predictors explained more than half of the variations in operating efficiency as evidenced R^2 (within) = 53% and R^2 (overall) = 64%. The overall variability in operating efficiency was explained significantly as shown by the model p- value = 0.000 < 0.05, implying that the model was strongly fit. Lagged operating efficiency was positively significant at p –value = 0.001 < 0.05. This implies that operating efficiency of a firm today significantly influences its operating efficiency a year later and that, the history of a firm's performance will definitely influence how a firm moves forward in an effort to streamline its operational strategies.

5.1.1 Effect of Capital Adequacy on Operating Efficiency

The analysis showed that equity capital to total assets ratio was the best proxy for capital adequacy influencing bank operational efficiency. The ratio significantly influenced bank operating efficiency at p-value = 0.020 < 0.05. However, its influence on operating

efficiency differs with low market share banks and high market share banks since there existed statistically significant structural difference between the two groups of banks. Equity capital to total assets ratio represents the bank's capital structure and shows the ability of a bank to withstand losses. The decline in the ratio signals increased risk exposure and possibility of capital adequacy problem. Banks are therefore encouraged to have more of equity in their capital structure in order to reduce risk exposure and to improve their operational efficiency.

5.1.2 Effect of Credit Risk on Operating Efficiency

Loan loss provision to total equity ratio was the best proxy for credit risk in influencing bank operational efficiency. The ratio was statistically significant in influencing operating efficiency at p-value = 0.035 < 0.05. However, its influence was only limited to low market share banks, since there was statistical significant structural difference between low market share banks and high market share banks. Loan loss provision to total equity ratio shows the proportion of loan loss that is provided for during the year to total equity capital. Low ratios imply high quality of loan portfolio provided by the banks. Banks are therefore encouraged to reduce on their levels of loan provisions in order to improve their efficiency. The bottom line is that experienced and superior management should be entrusted with credit risk management affairs of banks. Further to that, risk taking is about management's attitude, bank shareholders should ensure that the agency problems between them and management are reduced at all costs. This will go a long way towards reducing the level of nonperforming loans and hence reduction on loan loss provisions.

5.1.3 Effect of Liquidity on Operating Efficiency

Interbank ratio was found to be the best proxy for liquidity influencing operating efficiency for banks. This was because apart from the ratio being insignificantly influencing operating efficiency; its contribution to changes in operating efficiency was minimal compared to other liquidity ratios that were considered for the study. Interbank ratio was still statistically insignificant in influencing operating efficiency for low market share banks. This implied that liquidity of a bank was not critical in determining operational efficiency for banks. The interbank ratio indicates the position of a bank in terms of a bank being a net placer or borrower of funds in the market place. A ratio greater than 100 implies that the bank is a net placer rather than borrower of funds. Whichever way the bank is, it does not affect its operational efficiency significantly.

5.1.4 Effect of Profitability on Operating Efficiency

Recurring earning power ratio was the best proxy for profitability influencing bank operational efficiency at p-value = 0.000 < 0.05. This was because apart from the ratio being strongly significant in influencing operating efficiency, its contribution toward change in operating efficiency was the highest among the other proxy variables. Recurring earning power ratio was positively significant in influencing operating efficiency for low market share banks. The recurring earning power ratio shows the return of assets performance measurement without deducting provisions. This implied that banks should emphasize on increasing their earnings in order to improve their operational efficiency. Banks should be allowed to engage in other related income generating activities in order to boost their earnings power. However, as they do that, they should be conscious of the volatility of the risk involved due to nature of their business.

5.1.5 Effect of Asset Quality on Operating Efficiency

Loan loss provision to net interest revenue ratio was the best proxy for asset quality because apart from being significant in influencing operating efficiency for banks, it was also the greatest contributor to changes in operating efficiency compared to other proxy variables. The ratio was significant at p-value = 0.000 < 0.05. Loan loss provision to net revenue ratio was negatively significant in influencing operating efficiency for low market share banks. The ratio of loan loss provision to net interest revenue is used to measure the relationship between provisions made in the income statement and the interest income over the same period. Banks should optimally use their huge asset capacity to enhance their earnings profiles. At the same time, banks should avoid reckless lending that would increase the level of unsecured credits in banks' portfolio that eventually may lead to increased levels of non-performing loans, which in turn may lead to high levels of loan loss provisions by banks. This will go a long way in enhancing operational efficiency for banks.

5.1.6 Low and High Market Share Banks and Operating Efficiency

There was statistically significant structural difference between the low market share banks and the high market share banks as evidenced from the optimal output results in Table 4.9. All the dummy variables were statistically significant in explaining bank operational efficiency at p-value < 0.05, apart from the dummy variable for liquidity, which was statistically insignificant in explaining bank operational efficiency at p-value > 0.05. The market share position of a bank is important when evaluating its operational efficiency.

5.2 Conclusions

The main objective of this study was to determine and evaluate the effects of bank specific performance indicators on their operating efficiency. The study also sought to examine if there exists significant structural differences between low market share banks and high market share banks. The analysis involved determination of the optimal model that may be used to explain variations in banks operational efficiency. According to this study, optimal model was the model that statistically gave the best combination of proxy variables for capital adequacy, credit risk, liquidity, profitability and asset quality that best explains variation in bank operational efficiency. The following conclusions are therefore drawn from the results of the analyses.

The study revealed that the optimal model explained approximately 64% of variability in operating efficiency of banks. This means that a great percentage of bank operational efficiency is well explained by bank specific performance indicators. The study also showed that lagged operating efficiency positively and significantly influenced bank operating efficiency. This implies that the history of a firm's performance will definitely influence how a firm moves forward in an effort to streamline its operational strategies.

The study statistically revealed that equity capital to total assets ratio, loan loss provision to total equity ratio, interbank ratio, recurring earning power ratio and loan loss provision to net interest revenue ratio consecutively were the optimal proxies for capital adequacy, credit risk, liquidity, profitability and asset quality as far as explaining variations in bank operational efficiency. All the variables statistically and significantly influenced bank operational efficiency at p-value < 0.05, except liquidity proxy by interbank ratio that was statistically insignificant.

Finally, the study also revealed that there existed significant structural differences between low market share banks and high market share banks. This means that the size of a bank in terms of market share is important in determination of bank's operational efficiency. As evidenced, equity capital to total asset ratio, loan loss provision to total equity ratio and loan loss provision to net interest revenue ratio negatively and significantly influenced operating efficiency for low market share banks. Similarly, recurring earning power ratio positively and significantly influenced operational efficiency for low market share banks.

5.3 Study Recommendations

The findings of the study add some new understanding of the literature on the banking sector in the economy with reference to the Kenyan banking sector. This study identified a measurable relation between the effective ratios and operating efficiency. The optimal model revealed that, the higher the operating efficiency the more stable a bank is. Stability of commercial banks is critical in any economy because other sectors heavily rely on them for their banking and other related services. The study attempted to provide a model that bank managers and CBK may apply in determining the operating efficiency for banks and the sector at large. Bank managers should pay close attention to the variables that are indicators of growth in operating efficiency and are included in determining operating efficiency. Such variables include measures of equity capital to total asset ratio, loan loss provision to total equity ratio, recurring earning power ratio and loan loss provision to net interest revenue ratio.

Banks should ensure that they optimally use their huge asset capacity to enhance their earnings profiles, and they should avoid reckless lending that would increase the level of

unsecured credits in banks' portfolio that eventually may lead to increased levels of non-performing loans. Banks should also ensure that the agency problems between shareholders and management are minimized. Managerial efficiency is paramount for increase in operational efficiency of a bank. Experienced and competent management should be allowed to manage credit risk affairs of banks. The study further recommends that banks should work hard to expand their market share through opening of branches and increase in the customer deposits. By doing that, they would increase their operational efficiency through economies of scale and increase in their earnings.

5.4 Recommendations for Further Research

Since this study focused only on bank specific performance indicators, comparative studies should be done on the determinants of banks operating efficiency using non-bank specific performance indicators to gain better understanding of the determinants of bank's operating efficiency. This study was based on a sample of commercial banks operating in Kenya. This restriction limits generalization of the findings. Further research using different samples may provide further insights and add to the existing understanding of the concept of operating efficiency for commercial banks.

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APPENDICES

Appendix I: List of Banks Operating in Kenya as of December 2011

1.	ABC	African Banking Corporation Ltd
2.	AFRICA	Bank of Africa Ltd
3.	BARODA	Bank of Baroda Ltd
4.	INDIA	Bank of India
5.	BBK	Barclays Bank of Kenya Ltd
6.	STANBIC	CFC Stanbic Bank Ltd
7.	CHASE	Chase Bank Ltd
8.	CITIB	Citibank N.A
9.	CBA	Commercial Bank of Africa Ltd
10.	CONSOL	Consolidated Bank of Kenya Ltd
11.	COOP	Co-operative Bank of Kenya Ltd
12.	CREDIT	Credit Bank Ltd
13.	DEV	Development Bank of Kenya Ltd
14.	DTB	Diamond Trust Bank Ltd
15.	DUBAI	Dubai Bank Ltd
16.	ECOB	Ecobank Kenya Ltd
17.	EQUAT	Equatorial Commercial Bank Ltd
18.	EQUITY	Equity Bank Ltd
19.	FAMILY	Family Bank Ltd
20.	FIDEL	Fidelity Commercial Bank Ltd
21.	FINA	Fina Bank Ltd
22.	FIRSTCOM	First Community Bank Ltd
23.	GIRO	Giro Commercial Bank Ltd
24.	GUARD	Guardian Bank Ltd
25.	GULF	Gulf African Bank Ltd
26.	HABZ	Habib AG Zurich
27.	HABIB	Habib Bank Ltd
28.	HFCK	Housing Finance Company of Kenya Ltd
29.	IM	I & M Bank Ltd
30.	IMPERIAL	Imperial Bank Ltd
31.	JAMII	Jamii Bora Bank Ltd
32.	KCB	Kenya Commercial Bank Ltd
33.	KREP	K-Rep Bank Ltd
34.	MIDEAST	Middle East Bank of Ltd
35.	NBK	National Bank of Kenya Ltd
36.	NIC	NIC Bank Ltd
37.	ORIENT	Oriental Commercial Bank Ltd
38.	PARAM	Paramount-Universal Bank Ltd
39.	PTIME	Prime Bank Ltd
40.	STD	Standard Chartered Bank Ltd
41.	TRANS	Transnational Bank Ltd
42.	UBA	UBA Kenya Bank Ltd
43.	VICTOR	Victoria Commercial Bank Ltd

Source: CBK, (2011)

Appendix II: Distribution of Commercial Banks Branches by County by 2011

	Number of Branches	% of Total
1 Baringo	8	1%
2 Bomet	7	1%
3 Bungoma	15	1%
4 Busia	8	1%
5 Elgeyo/Marakwet	1	0%
6 Embu	9	1%
7 Garissa	7	1%
8 Homa Bay	9	1%
9 Isiolo	6	1%
10 Kajiado	28	2%
11 Kakamega	16	1%
12 Kericho	12	1%
13 Kiambu	50	4%
14 Kilifi	24	2%
15 Kirinyaga	12	1%
16 Kisii	20	2%
17 Kisumu	36	3%
18 Kitui	13	1%
19 Kwale	10	1%
20 Laikipia	11	1%
21 Lamu	4	0%
22 Machakos	17	1%
23 Makueni	9	1%
24 Mandera	2	0%
25 Marsabit	5	0%
26 Meru	37	3%
27 Migori	9	1%
28 Mombasa	98	8%
29 Murang'a	20	2%
30 Nairobi City	465	40%
31 Nakuru	52	4%
32 Nandi	10	1%
33 Narok	8	1%
34 Nyamira	4	0%
35 Nyandarua	7	1%
36 Nyeri	25	2%
37 Samburu	2	0%
38 Siaya	5	0%
39 Taita/Taveta	9	1%
40 Tana River	3	0%
41 Tharaka-Nithi	3	0%
42 Trans Nzoia	11	1%
43 Turkana	3	0%
44 Uasin Gishu	38	3%
45 Vihiga	6	1%
46 Wajir	5	0%
47 West Pokot	2	0%
Total	**1, 161**	**100%**

Source: CBK, 2011

Appendix III: Data for the Study

OPERATING EFFICIENCY RATIO

	FIRM	2011	2010	2009	2008	2007	2006	2005
1	ABC	1.27	1.31	1.18	1.19	1.2	1.17	1.16
2	AFRICA	1.14	1.2	1.13	1.08	1.11	1.13	1.12
3	BARODA	1.5	1.6	1.28	1.26	1.28	1.27	1.18
4	INDIA	1.51	1.51	1.27	1.37	1.32	1.25	1.22
5	BBK	1.4	1.39	1.3	1.31	1.31	1.37	1.36
6	STANBIC	1.08	1.01	0.996	1.22	1.15	1.14	1.1
7	CHASE	1.17	1.17	1.15	1.18	1.22	1.22	1.21
8	CITIB	1.61	1.48	1.6	1.5	1.39	1.51	1.47
9	CBA	1.33	1.32	1.26	1.29	1.34	1.39	1.28
10	CONSOL	1.07	1.13	1.13	1.133	1.09	1.03	0.974
11	COOP	1.21	1.24	1.2	1.16	1.23	1.06	1.1
12	CREDIT	1.09	1.06	1.29	1.31	1.29	1.25	1.24
13	DEV	1.2	1.19	1.24	1.22	1.27	1.3	0.968
14	DTB	1.31	1.32	1.2	1.23	1.23	1.22	1.15
15	DUBAI	1.04	1.01	1.01	1.01	0.96	1.05	1.04
16	ECOB	1.04	1.03	0.65	1.07	.	.	.
17	EQUAT	1.05	0.968	1.13	0.98	1.13	1.18	1.16
18	EQUITY	1.51	1.53	1.39	1.41	1.43	1.28	1.28
19	FAMILY	1.09	1.12	1.1	1.18	1.15	.	.
20	FIDELITY	1.16	1.15	1.08	1.1	1.09	1.06	1.05
21	FINA	1.11	1.1	1.07	1.05	1.08	1.15	1.12
22	FIRSTCOM	1.14	1.13	0.69	0.067	.	.	.
23	GIRO	1.29	1.28	1.21	1.13	1.05	1.08	1.06
24	GUARD	1.11	1.08	1.05	1.04	1.03	1.06	1.04
25	GULF	1.14	1.05	0.79	0.4	.	.	.
26	HABZ	1.27	1.31	1.4	1.38	1.33	1.28	1.29
27	HABIB	1.4	1.44	1.4	1.36	1.28	1.02	1.08
28	HFCK	1.2	1.16	1.13	1.09	1.07	1.08	1.08
29	IM	1.5	1.41	1.29	1.32	1.33	1.32	1.31
30	IMPERIAL	1.3	1.32	1.21	1.19	1.21	1.18	1.19
31	JAMII	0.8	0.72	.	.	.	.	.
32	KCB	1.37	1.34	1.27	1.2	1.65	1.6	1.62
33	KREP	1.16	1.08	0.85	0.76	1.1	1.12	1.11
34	MIDEAST	1.18	1.34	1.11	1.05	1.19	1.23	1.21
35	NBK	1.18	1.33	1.27	1.26	1.37	1.18	1.31
36	NIC	1.14	1.28	1.23	1.26	1.25	1.18	1.23
37	ORIENT	1.37	1.44	1.13	1.4	2.01	0.63	1.09
38	PARAM	1.22	1.15	1.1	1.14	1.12	1.1	1.12
39	PRIME	1.18	1.23	1.2	1.18	1.21	1.19	1.15
40	STD	1.45	1.52	1.48	1.36	1.43	1.39	1.4
41	TRANS	1.21	1.23	1.19	1.32	1.45	0.954	1.19
42	UBA	0.71	0.725	0.2	.	.	.	.
43	VICTORIA	1.36	1.41	1.32	1.32	1.33	1.29	1.31

CAPITAL ADEQUACY RATIOS

	FIRM	YEAR	CCA	TRC	TCA	CEA
1	ABC	2011	1.06	0.17	0.18	0.14
		2010	1.17	0.193	0.2	0.158
		2009	1	0.21	0.207	0.129
		2008	1.01	0.213	0.214	0.147
		2007	1	0.171	0.172	0.132
		2006	1	0.173	0.175	0.126
		2005	1	0.176	0.176	0.114
2	AFRICA	2011	1.09	0.13	0.16	0.12
		2010	1.1	0.107	0.152	0.11
		2009	1.4	0.152	0.159	0.148
		2008	1.55	0.124	0.132	0.135
		2007	1.49	0.136	0.144	0.165
		2006	1.23	0.16	0.169	0.151
		2005	0.95	0.176	0.185	0.122
3	BARODA	2011	1.06	0.21	0.21	0.13
		2010	1.37	0.226	0.236	0.147
		2009	1.18	0.197	0.206	0.117
		2008	1.06	0.185	0.197	0.104
		2007	1.05	0.189	0.189	0.104
		2006	1	0.275	0.275	0.107
		2005	1	0.284	0.284	0.115
4	INDIA	2011	0.96	0.45	0.47	0.15
		2010	1	0.423	0.432	0.14
		2009	1	0.337	0.347	0.134
		2008	1	0.321	0.321	0.14
		2007	1.12	0.285	0.285	0.127
		2006	1.08	0.251	0.251	0.118
		2005	1.02	0.31	0.319	0.119
5	BBK	2011	0.87	0.24	0.28	0.18
		2010	0.94	0.266	0.312	0.182
		2009	0.88	0.191	0.238	0.147
		2008	0.82	0.15	0.188	0.121
		2007	0.96	0.13	0.14	0.111
		2006	1.2	0.121	0.132	0.126
		2005	1	0.133	0.132	0.126
6	STANBIC	2011	0.66	0.13	0.19	0.07
		2010	0.81	0.104	0.162	0.094
		2009	0.78	0.103	0.16	0.084
		2008	0.93	0.114	0.147	0.086
		2007	0.87	0.156	0.191	0.121
		2006	0.84	0.143	0.183	0.118
		2005	0.84	0.163	0.205	0.13
7	CHASE	2011	1.04	0.11	0.13	0.08
		2010	1.01	0.135	0.145	0.078
		2009	0.99	0.123	0.134	0.094
		2008	0.99	0.113	0.126	0.082
		2007	1.01	0.156	0.162	0.121
		2006	1.02	0.232	0.232	0.154
		2005	1	0.29	0.29	0.216
8	CITIB	2011	0.96	0.31	0.32	0.2

		2010	1.01	0.353	0.36	0.208
		2009	1	0.29	0.299	0.216
		2008	1	0.253	0.26	0.193
		2007	1.01	0.265	0.271	0.155
		2006	1.08	0.26	0.266	0.166
		2005	1.01	0.166	0.17	0.173
9	CBA	2011	1.24	0.14	0.15	0.12
		2010	1.24	0.138	0.145	0.118
		2009	1.31	0.121	0.129	0.109
		2008	1.11	0.124	0.13	0.099
		2007	1.25	0.135	0.141	0.114
		2006	1.16	0.148	0.153	0.097
		2005	1.05	0.122	0.129	0.079
10	CONSOL	2011	1.21	0.11	0.13	0.09
		2010	1.37	0.109	0.132	0.141
		2009	1.14	0.143	0.157	0.134
		2008	1.16	0.171	0.187	0.182
		2007	1.23	0.169	0.189	0.182
		2006	1.25	0.192	0.215	0.21
		2005	1.37	0.215	0.226	0.24
11	COOP	2011	0.93	0.16	0.16	0.13
		2010	1.1	0.162	0.165	0.131
		2009	1.05	0.203	0.211	0.146
		2008	1.04	0.22	0.235	0.166
		2007	1.13	0.142	0.145	0.104
		2006	1.01	0.133	0.146	0.083
		2005	0.73	0.114	0.177	0.078
12	CREDIT	2011	0.99	0.29	0.3	0.18
		2010	1.03	0.368	0.375	0.209
		2009	1.01	0.325	0.334	0.199
		2008	1	0.28	0.289	0.183
		2007	1.04	0.289	0.3	0.167
		2006	1.08	0.226	0.232	0.195
		2005	1	0.259	0.259	0.166
13	DEV	2011	1	0.25	0.27	0.14
		2010	1.02	0.253	0.272	0.14
		2009	1	0.264	0.264	0.168
		2008	1	0.316	0.316	0.188
		2007	1.03	0.396	0.396	0.243
		2006	1.05	0.532	532	0.324
		2005	1.07	0.641	0.641	0.383
14	DTB	2011	1.07	0.15	0.14	0.13
		2010	1.01	0.154	0.184	0.137
		2009	0.96	0.154	0.189	0.133
		2008	0.95	0.156	0.198	0.128
		2007	1.09	0.191	0.191	0.154
		2006	0.86	0.173	0.207	0.121
		2005	0.83	0.112	0.142	0.087
15	DUBAI	2011	1	0.36	0.37	0.31
		2010	1	0.351	0.357	0.318
		2009	1	0.271	0.278	0.29
		2008	1	0.255	0.265	0.251
		2007	1	0.302	0.302	0.261
		2006	1	0.201	0.206	0.318

		2005	1	0.347	0.347	0.335
16	ECOB	2011	0.38	0.15	0.26	0.06
		2010	1.81	0.193	0.193	0.186
		2009	1.41	0.157	0.157	0.154
		2008	1.56	0.143	0.155	0.166
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
17	EQUAT	2011	1.05	0.13	0.14	0.09
		2010	1.02	0.132	0.145	0.087
		2009	1	0.196	0.208	0.163
		2008	1	0.202	0.211	0.153
		2007	1	0.203	0.203	0.137
		2006	1	0.21	0.21	0.156
		2005	1.01	0.251	0.259	0.158
18	EQUITY	2011	1.27	0.15	0.22	0.2
		2010	1.12	0.219	0.279	0.211
		2009	1.04	0.236	0.315	0.242
		2008	0.99	0.292	0.408	0.255
		2007	0.85	0.457	0.589	0.281
		2006	1	0.139	0.139	0.11
		2005	1.12	0.192	0.192	0.139
19	FAMILY	2011	1.06	0.16	0.17	0.13
		2010	1.04	0.239	0.239	0.155
		2009	1.06	0.182	0.183	0.139
		2008	1.09	0.19	0.191	0.149
		2007	1.11	0.221	0.222	0.149
		2006	.	.	.	.
		2005	.	.	.	.
20	FIDEL	2011	1.02	0.14	0.15	0.09
		2010	1	0.164	0.175	0.098
		2009	1	0.135	0.146	0.089
		2008	1	0.129	0.14	0.098
		2007	1.03	0.132	0.142	0.1
		2006	1.05	0.162	0.162	0.124
		2005	1	0.219	0.22	0.162
21	FINA	2011	0.99	0.16	0.19	0.11
		2010	1.01	0.145	0.171	0.095
		2009	1.21	0.138	0.144	0.098
		2008	1.2	0.123	0.132	0.119
		2007	1.18	0.139	0.146	0.13
		2006	1.19	0.17	0.178	0.149
		2005	1.23	0.145	0.145	0.136
22	FIRSTCOM	2011	1.09	0.14	0.14	0.1
		2010	1	0.144	0.144	0.089
		2009	1	0.187	0.187	0.148
		2008	1	0.405	0.405	0.244
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
23	GIRO	2011	1	0.22	0.24	0.13
		2010	1	0.237	0.249	0.131
		2009	1	0.221	0.234	0.124
		2008	1.01	0.175	0.188	0.102

		2007	1.01	0.158	0.171	0.094
		2006	1.03	0.16	0.172	0.097
		2005	1	0.139	0.14	0.088
24	GUARD	2011	1	0.19	0.18	0.12
		2010	1	0.193	0.193	0.118
		2009	1	0.194	0.194	0.129
		2008	1	0.233	0.233	0.15
		2007	1	0.238	0.238	0.145
		2006	1	0.226	0.226	0.16
		2005	1	0.245	0.245	0.17
25	GULF	2011	1	0.14	0.14	0.1
		2010	1	0.153	0.162	0.128
		2009	1	0.164	0.171	0.148
		2008	1	0.36	0.36	0.255
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
26	HABZ	2011	1.04	0.36	0.38	0.15
		2010	1.09	0.403	0.403	0.138
		2009	1.07	0.337	0.337	0.131
		2008	1.03	0.291	0.291	0.118
		2007	1	0.357	35.7	0.119
		2006	1	0.388	0.388	0.122
		2005	1	0.347	0.347	0.114
27	HABIB	2011	1	0.33	0.34	0.18
		2010	1	0.411	0.417	0.165
		2009	0.99	0.648	0.657	0.16
		2008	1	0.47	0.477	0.138
		2007	1	0.463	0.463	0.136
		2006	1	0.576	0.578	0.151
		2005	1	0.612	0.612	0.148
28	HFCK	2011	0.81	0.21	0.34	0.15
		2010	0.68	0.244	0.488	0.146
		2009	1.29	0.311	0.341	0.223
		2008	1.28	0.405	0.405	0.255
		2007	1.67	0.131	0.162	0.14
		2006	1.56	0.131	0.162	0.15
		2005	1.11	0.105	0.159	0.13
29	IM	2011	1.21	0.18	0.19	0.18
		2010	1.45	0.189	0.199	0.208
		2009	1.14	0.17	0.187	0.169
		2008	1.14	0.11	0.126	0.142
		2007	1.03	0.144	0.144	0.131
		2006	1.14	0.128	0.129	0.125
		2005	1.08	0.125	0.126	0.114
30	IMPERIAL	2011	1.21	0.2	0.21	0.14
		2010	1.31	0.199	0.212	0.16
		2009	1.04	0.204	0.215	0.146
		2008	1.05	0.19	0.201	0.142
		2007	1.03	0.179	0.189	0.135
		2006	1.08	0.178	0.198	0.144
		2005	1.05	0.223	0.223	0.144
31	JAMII	2011	1.98	1.1	1.11	0.74
		2010	4.42	0.351	0.357	0.592

		2009	.	.	.	.
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
32	KCB	2011	1.13	0.2	0.21	0.16
		2010	1.16	0.231	0.232	0.183
		2009	1.26	0.148	0.148	0.129
		2008	1.24	0.154	0.155	0.115
		2007	1.28	0.136	0.136	0.114
		2006	1.24	0.158	0.158	0.131
		2005	1.02	0.184	0.184	0.134
33	KREP	2011	1.01	0.19	0.2	0.14
		2010	1.01	0.208	0.216	0.151
		2009	1.02	0.208	0.212	0.155
		2008	1	0.177	0.184	0.138
		2007	1	0.174	0.181	0.145
		2006	1.01	0.189	0.198	0.172
		2005	1	0.278	0.278	0.209
34	MIDEAST	2011	1.02	0.43	0.44	0.24
		2010	1.02	0.516	0.525	0.256
		2009	1.02	0.499	0.506	0.288
		2008	1.01	0.429	0.433	0.266
		2007	1.02	0.386	0.394	0.284
		2006	1.03	0.309	0.313	0.248
		2005	1	0.271	0.272	0.196
35	NBK	2011	1.05	0.28	0.29	0.15
		2010	1.05	0.355	0.369	0.165
		2009	1.07	0.409	0.426	0.154
		2008	1.06	0.386	0.399	0.145
		2007	1.08	0.372	0.387	0.12
		2006	1.1	0.115	0.119	0.107
		2005	1.13	0.096	0.1	0.099
36	NIC	2011	1.03	0.15	0.16	0.14
		2010	1.08	0.146	0.155	0.144
		2009	1.13	0.146	0.155	0.144
		2008	1.02	0.142	0.151	0.129
		2007	1.1	0.158	0.167	0.151
		2006	1.05	0.133	0.142	0.116
		2005	1.12	0.144	0.145	0.132
37	ORIENT	2011	1.16	0.34	0.35	0.26
		2010	1.13	0.347	0.36	0.25
		2009	1.16	0.391	0.403	0.322
		2008	1.17	0.53	0.543	0.412
		2007	1	0.598	0.608	0.483
		2006	1	0.598	0.598	0.464
		2005	0.99	0.713	0.722	0.523
38	PARAM	2011	1	0.53	0.54	0.22
		2010	1	0.464	0.474	0.178
		2009	1	0.331	0.34	0.17
		2008	1	0.412	0.419	0.186
		2007	1.09	0.325	0.325	0.193
		2006	1.03	0.325	0.325	0.194
		2005	1.05	0.279	0.279	0.202

39	PRIME	2011	1.15	0.17	0.17	0.11
		2010	1.73	0.138	0.138	0.12
		2009	1.66	0.157	0.157	0.129
		2008	1.93	0.161	0.161	0.154
		2007	1.76	0.149	0.149	0.139
		2006	1.64	0.13	0.13	0.126
		2005	1	0.156	0.156	0.101
40	STD	2011	1.25	0.12	0.14	0.13
		2010	1.72	0.139	0.143	0.141
		2009	1.26	0.141	0.145	0.111
		2008	1.19	0.157	0.162	0.115
		2007	1.18	0.163	0.167	0.119
		2006	1.16	0.183	0.189	0.124
		2005	1.12	0.145	0.146	0.13
41	TRANS	2011	1	0.47	0.47	0.24
		2010	1	0.696	0.706	0.324
		2009	1	0.705	0.716	0.394
		2008	1	0.652	0.663	0.365
		2007	1.01	0.777	0.779	0.342
		2006	1.08	0.654	0.654	0.437
		2005	1	0.702	0.702	0.518
42	UBA	2011	1	0.7	0.7	0.23
		2010	1	0.812	0.814	0.376
		2009	1	2.71	2.71	0.819
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
43	VICTOR	2011	0.99	0.21	0.22	0.16
		2010	1	0.228	0.235	0.177
		2009	1.01	0.222	0.23	0.182
		2008	0.99	0.219	0.229	0.171
		2007	1	0.235	0.245	0.159
		2006	1.09	0.225	0.231	0.154
		2005	1	0.273	0.273	0.133

CREDIT RISK RATIOS

	FIRM	YEAR	NCOAGL	LLPTL	LLPE	LLRGL
1	ABC	2011	0.002	0.002	0.007	0.01
		2010	0.0076	0.0076	0.025	0.011
		2009	0.017	0.017	0.06	0.002
		2008	0.012	0.012	0.043	0.001
		2007	0.017	0.017	0.069	0.001
		2006	0.005	0.005	0.016	0.002
		2005	0.006	0.006	0.023	0.005
2	AFRICA	2011	0.002	0.002	0.01	0.01
		2010	0.002	0.002	0.009	0.009
		2009	0.003	0.003	0.012	0.016
		2008	0.004	0.004	0.013	0.009
		2007	0.002	0.002	0.009	.
		2006	0.002	0.002	0.0003	.
		2005	0.002	0.002	0.0009	.
3	BARODA	2011	0.01	0.01	0.04	0.011
		2010	0.004	0.004	0.012	0.011
		2009	0.005	0.005	0.016	0.01
		2008	0.027	0.027	0.127	0.012
		2007	0.007	0.007	0.03	.
		2006	0.0007	0.0007	0.002	.
		2005	0.008	0.008	0.024	.
4	INDIA	2011	0.001	0.001	0.003	0.01
		2010	0.004	0.004	0.009	0.011
		2009	0.019	0.019	0.051	0.011
		2008	0.008	0.008	0.022	0.01
		2007	0.01	0.01	0.027	.
		2006	0.011	0.011	0.035	.
		2005	0.01	0.01	0.036	.
5	BBK	2011	0.02	0.02	0.036	0.029
		2010	0.014	0.014	0.038	0.028
		2009	0.005	0.005	0.021	0.019
		2008	0.009	0.009	0.063	0.006
		2007	0.006	0.006	0.039	0.003
		2006	0.011	0.011	0.059	0.001
		2005	0.019	0.019	0.101	.
6	STANBIC	2011	0.01	0.01	0.094	.
		2010	0.009	0.009	0.101	.
		2009	0.013	0.013	0.179	.
		2008	0.005	0.005	0.032	0.012
		2007	0.008	0.008	0.041	0.004
		2006	0.011	0.011	0.058	0.015
		2005	0.008	0.008	0.033	0.014
7	CHASE	2011	0.005	0.005	0.032	0.018
		2010	0.0006	0.0006	0.41	0.015
		2009	0.002	0.002	0.0098	0.016
		2008	0.007	0.007	0.043	0.017
		2007	0.008	0.008	0.052	0.018
		2006	0.005	0.005	0.017	0.015
		2005	0.004	0.004	0.016	0.014
8	CITIB	2011	0.0004	0.0004	0.0008	0.011

		2010	0.001	0.001	0.001	0.011
		2009	0.0002	0.0002	0.0004	0.015
		2008	0.001	0.001	0.002	0.014
		2007	0.012	0.012	0.021	0.013
		2006	0.005	0.005	0.011	0.01
		2005	0.005	0.005	0.012	0.01
9	CBA	2011	0.006	0.006	0.023	0.013
		2010	0.008	0.008	0.032	0.016
		2009	0.008	0.008	0.039	0.009
		2008	0.01	0.01	0.051	0.008
		2007	0.004	0.004	0.015	0.01
		2006	0.027	0.027	0.105	0.009
		2005	0.011	0.011	0.052	0.009
10	CONSOL	2011	0.009	0.009	0.057	0.009
		2010	0.02	0.02	0.092	0.009
		2009	0.026	0.026	0.11	0.008
		2008	0.023	0.023	0.076	0.008
		2007	0.024	0.024	0.063	0.009
		2006	0.032	0.032	0.073	0.007
		2005	0.021	0.021	0.067	0.008
11	COOP	2011	0.011	0.011	0.038	0.005
		2010	0.012	0.012	0.039	0.002
		2009	0.009	0.009	0.082	0.003
		2008	0.013	0.013	0.097	.
		2007	0.018	0.018	0.109	.
		2006	0.051	0.051	0.296	.
		2005	0.032	0.032	0.312	.
12	CREDIT	2011	0.02	0.02	0.061	0.007
		2010	0.058	0.058	0.118	0.011
		2009	0.021	0.021	0.055	0.011
		2008	0.016	0.016	0.044	0.011
		2007	0.007	0.007	0.004	0.012
		2006	-0.005	-0.005	-0.014	0.009
		2005	0.002	0.002	0.004	0.009
13	DEV	2011	0.005	0.005	0.02	0.023
		2010	0.008	0.008	0.029	0.019
		2009	0.01	0.01	0.047	0.003
		2008	0.002	0.002	0.007	.
		2007	0.004	0.004	0.009	.
		2006	0.008	0.008	0.012	0.155
		2005	0.011	0.011	0.011	0.298
14	DTB	2011	0.009	0.009	0.048	0.0023
		2010	0.0118	0.0118	0.055	0.003
		2009	0.016	0.016	0.048	0.008
		2008	0.007	0.007	0.036	.
		2007	0.003	0.003	0.014	.
		2006	0.004	0.004	0.023	.
		2005	0.011	0.011	0.036	.
15	DUBAI	2011	0.054	0.054	0.12	0.011
		2010	0.056	0.056	0.102	0.009
		2009	0.074	0.074	0.184	0.01
		2008	0.112	0.112	0.26	0.016
		2007	0.134	0.134	0.248	.
		2006	0.089	0.089	0.166	.

		2005	0.062	0.062	0.153	.
16	ECOB	2011	0.02	0.02	0.13	.
		2010	0.024	0.024	0.046	.
		2009	0.118	0.118	0.353	.
		2008	0.007	0.007	0.021	0.051
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
17	EQUAT	2011	0.00002	0.00002	0.00009	0.023
		2010	0.015	0.015	0.082	0.02
		2009	0.003	0.003	0.011	0.015
		2008	0.044	0.044	0.151	0.012
		2007	0.016	0.016	0.055	.
		2006	0.015	0.015	0.058	.
		2005	0.015	0.015	0.057	.
18	EQUITY	2011	0.014	0.014	0.044	0.004
		2010	0.013	0.013	0.042	0.006
		2009	0.015	0.015	0.038	0.006
		2008	0.021	0.021	0.044	0.008
		2007	0.009	0.009	0.014	0.012
		2006	0.014	0.014	0.07	.
		2005	0.013	0.013	0.081	0.012
19	FAMILY	2011	0.021	0.021	0.1	0.009
		2010	0.011	0.011	0.028	.
		2009	0.009	0.009	0.039	.
		2008	0.012	0.012	0.031	.
		2007	0.008	0.008	0.025	.
		2006	.	.	.	.
		2005	.	.	.	.
20	FIDEL	2011	0.003	0.003	0.02	0.013
		2010	0.01	0.01	0.054	0.011
		2009	0.004	0.004	0.027	0.011
		2008	0.006	0.006	0.038	0.012
		2007	0.007	0.007	0.044	0.01
		2006	0.076	0.076	0.175	0.01
		2005	0.052	0.052	0.113	0.01
21	FINA	2011	0.015	0.015	0.078	0.005
		2010	0.034	0.034	0.173	0.003
		2009	0.016	0.016	0.079	0.007
		2008	0.015	0.015	0.075	0.007
		2007	0.02	0.02	0.091	0.009
		2006	0.01	0.01	0.039	0.01
		2005	0.0096	0.0096	0.029	0.01
22	FIRSTCOM	2011	0.009	0.009	0.047	.
		2010	0.004	0.004	0.019	.
		2009	0.009	0.009	0.03	.
		2008	0.01	0.01	0.012	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
23	GIRO	2011	0.003	0.003	0.011	0.012
		2010	0.006	0.006	0.022	0.013
		2009	0.004	0.004	0.016	0.013
		2008	0.008	0.008	0.043	0.013

		2007	0.061	0.061	0.354	0.014
		2006	0.041	0.041	0.248	0.016
		2005	0.053	0.053	0.221	0.017
24	GUARD	2011	0.021	0.021	0.12	.
		2010	0.017	0.017	0.083	.
		2009	0.031	0.031	0.148	.
		2008	0.053	0.053	0.225	.
		2007	0.029	0.029	0.118	.
		2006	0.031	0.031	0.114	.
		2005	0.03	0.03	0.111	.
25	GULF	2011	0.005	0.005	0.027	0.009
		2010	0.004	0.004	0.019	0.011
		2009	0.003	0.003	0.015	0.009
		2008	0.01	0.01	0.016	
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
26	HABZ	2011	0.007	0.007	0.14	0.034
		2010	0.032	0.032	0.064	0.04
		2009	0.001	0.001	0.002	0.028
		2008	0.004	0.004	0.012	0.009
		2007	0.022	0.022	0.049	.
		2006	0.028	0.028	0.055	.
		2005	0.026	0.026	0.048	.
27	HABIB	2011	0.0001	0.0001	0.0003	0.008
		2010	0.021	0.021	0.038	0.008
		2009	0.001	0.001	0.001	0.008
		2008	0.001	0.001	0.002	0.008
		2007	0.032	0.032	0.058	.
		2006	0.044	0.044	0.078	.
		2005	0.036	0.036	0.06	.
28	HFCK	2011	0.007	0.007	0.039	0.013
		2010	0.012	0.012	0.056	0.026
		2009	0.016	0.016	0.055	0.04
		2008	0.01	0.01	0.027	0.046
		2007	0.053	0.053	0.028	0.058
		2006	0.067	0.067	0.31	0.066
		2005	0.064	0.064	0.081	0.048
29	I&M	2011	0.004	0.004	0.013	0.0005
		2010	0.009	0.009	0.025	.
		2009	0.005	0.005	0.016	.
		2008	0.007	0.007	0.033	.
		2007	0.007	0.007	0.032	0.0004
		2006	0.005	0.005	0.028	0.001
		2005	0.004	0.004	0.025	0.001
30	IMPERIAL	2011	0.006	0.006	0.026	0.005
		2010	0.011	0.011	0.042	0.003
		2009	0.006	0.006	0.026	0.012
		2008	0.008	0.008	0.023	0.012
		2007	0.007	0.007	0.029	0.011
		2006	0.009	0.009	0.037	.
		2005	0.011	0.011	0.041	.
31	JAMII	2011	0.063	0.063	0.012	0.007
		2010	0.119	0.119	0.038	0.012

		2009	.	.	.	.
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
32	KCB	2011	0.008	0.008	0.033	0.008
		2010	0.014	0.014	0.046	0.112
		2009	0.012	0.012	0.052	0.001
		2008	0.074	0.074	0.174	.
		2007	0.098	0.098	0.431	.
		2006	0.139	0.139	0.493	.
		2005	0.099	0.099	0.401	.
33	KREP	2011	0.043	0.043	0.22	0.005
		2010	0.011	0.011	0.048	0.007
		2009	0.055	0.055	0.241	0.003
		2008	0.057	0.057	0.298	0.008
		2007	0.011	0.011	0.055	0.008
		2006	0.003	0.003	0.013	0.01
		2005	0.008	0.008	0.042	0.01
34	MIDEAST	2011	0.003	0.003	0.007	0.008
		2010	0.013	0.013	0.027	0.017
		2009	0.006	0.006	0.01	0.008
		2008	0.024	0.024	0.043	0.004
		2007	0.014	0.014	0.031	0.01
		2006	0.02	0.02	0.046	0.005
		2005	0.019	0.019	0.038	0.01
35	NBK	2011	0.025	0.025	0.066	0.01
		2010	0.017	0.017	0.037	0.01
		2009	0.011	0.011	0.018	0.01
		2008	0.04	0.04	0.058	0.009
		2007	0.36	0.36	0.56	0.007
		2006	0.604	0.604	4.16	0.023
		2005	0.376	0.376	0.493	0.011
36	NIC	2011	0.005	0.005	0.025	0.01
		2010	0.008	0.008	0.037	0.01
		2009	0.014	0.014	0.066	0.01
		2008	0.007	0.007	0.035	0.01
		2007	0.022	0.022	0.101	0.009
		2006	0.039	0.039	0.213	0.009
		2005	0.032	0.032	0.147	0.009
37	ORIENT	2011	0.022	0.022	0.049	0.075
		2010	0.024	0.024	0.053	0.068
		2009	0.007	0.007	0.011	0.105
		2008	0.009	0.009	0.01	0.16
		2007	0.696	0.696	0.439	.
		2006	0.961	0.961	0.591	.
		2005	0.511	0.511	0.228	.
38	PARAM	2011	0.005	0.005	0.01	0.011
		2010	0.016	0.016	0.034	0.01
		2009	0.006	0.006	0.015	0.011
		2008	0.013	0.013	0.033	0.007
		2007	0.104	0.104	0.239	0.007
		2006	0.123	0.123	0.268	0.008
		2005	0.113	0.113	0.209	0.009

39	PRIME	2011	0.008	0.008	0.036	.
		2010	0.011	0.011	0.04	.
		2009	0.009	0.009	0.032	.
		2008	0.015	0.015	0.047	.
		2007	0.015	0.015	0.048	.
		2006	0.013	0.013	0.038	.
		2005	0.021	0.021	0.053	.
40	STD	2011	0.006	0.006	0.027	0.005
		2010	0.007	0.007	0.022	0.004
		2009	0.01	0.01	0.039	0.003
		2008	0.01	0.01	0.038	0.004
		2007	0.014	0.014	0.05	0.005
		2006	0.021	0.021	0.073	0.006
		2005	0.023	0.023	0.054	0.004
41	TRANS	2011	0.026	0.026	0.044	0.013
		2010	0.032	0.032	0.04	0.012
		2009	0.037	0.037	0.047	0.012
		2008	0.026	0.026	0.03	0.014
		2007	0.038	0.038	0.042	0.017
		2006	0.048	0.048	0.056	0.014
		2005	0.025	0.025	0.028	0.014
42	UBA	2011	0.01	0.01	0.007	0.01
		2010	.	.	.	0.007
		2009	.	.	0.139	.
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
43	VICTORIA	2011	0.002	0.002	0.005	0.007
		2010	0.001	0.001	0.002	0.01
		2009	0.0003	0.0003	0.001	0.011
		2008	0.0004	0.0004	0.001	0.013
		2007	0.003	0.003	0.012	0.012
		2006	0.006	0.006	0.019	0.006
		2005	0.004	0.004	0.015	0.009

LIQUIDITY RATIOS

	FIRM	YEAR	IBR	LR	NLTDB	LADSTF
1	ABC	2011	23.56	0.57	0.67	0.38
		2010	21.25	0.514	0.629	0.453
		2009	4.02	0.452	0.554	0.505
		2008	.	0.539	0.657	0.45
		2007	.	0.54	0.66	0.46
		2006	2.06	0.53	0.7	0.52
		2005	0.7	0.54	0.68	0.49
2	AFRICA	2011	1.44	0.56	0.8	0.52
		2010	1.62	0.582	0.783	0.532
		2009	1.52	0.598	0.713	0.615
		2008	2.05	0.654	0.581	0.603
		2007	2.52	0.598	0.756	0.355
		2006	4.71	0.582	0.706	0.409
		2005	3.68	0.561	0.71	0.392
3	BARODA	2011	1.96	0.52	0.61	0.53
		2010	1.07	0.416	0.496	0.674
		2009	3.92	0.414	0.487	0.656
		2008	2.68	0.487	0.589	0.583
		2007	7.61	0.47	0.54	0.573
		2006	8.25	0.37	0.43	0.7
		2005	7.69	0.41	0.58	0.39
4	INDIA	2011	1.16	0.29	0.34	0.82
		2010	5.72	0.338	0.4	0.766
		2009	5.32	0.353	0.418	0.747
		2008	16.1	0.373	0.44	0.722
		2007	29.97	0.34	0.41	0.76
		2006	4.06	0.37	0.45	0.73
		2005	8.7	0.39	0.43	0.7
5	BBK	2011	5.07	0.74	0.8	0.43
		2010	4.4	0.505	0.781	0.426
		2009	6.13	0.566	0.733	0.428
		2008	10.96	0.64	0.844	0.336
		2007	1.08	0.668	0.859	0.325
		2006	4.26	0.626	0.759	0.361
		2005	5.8	0.627	0.769	0.304
6	STANBIC	2011	.	.	.	.
		2010	.	.	.	.
		2009	.	.	.	.
		2008	.	.	.	.
		2007	1.76	0.601	0.69	0.41
		2006	1.53	0.593	0.707	0.409
		2005	2.49	0.558	0.66	0.425
7	CHASE	2011	0.99	0.5	0.56	0.45
		2010	1.18	0.509	0.57	0.444
		2009	1.08	0.523	0.541	0.452
		2008	1.06	0.499	0.557	0.417
		2007	1.08	0.512	0.563	0.407
		2006	8.1	0.49	0.62	0.56
		2005	9	0.49	0.61	0.53
8	CITIB	2011	0.83	0.38	1	0.94

		2010	3.39	0.344	0.483	0.672
		2009	3.39	0.417	0.644	0.679
		2008	7.16	0.382	0.582	0.6
		2007	1.26	0.27	0.43	0.55
		2006	0.57	0.33	0.49	0.46
		2005	5.1	0.35	0.48	0.51
9	CBA	2011	4.67	0.48	0.59	0.51
		2010	5.76	0.481	0.59	0.521
		2009	3.06	0.522	0.68	0.517
		2008	6.73	0.525	0.631	0.462
		2007	29.95	0.51	0.48	0.57
		2006	88.96	0.4	0.44	0.61
		2005	7.82	0.51	0.58	0.63
10	CONSOL	2011	1.01	0.6	0.69	0.35
		2010	2.33	0.593	0.722	0.358
		2009	0.56	0.561	0.681	0.39
		2008	1.27	0.591	0.758	0.279
		2007	2.41	0.612	0.713	0.3
		2006	5.49	0.48	0.648	0.366
		2005	.	0.442	0.661	0.412
11	COOP	2011	4.01	0.58	0.72	0.41
		2010	3.87	0.563	0.669	0.425
		2009	13.06	0.619	0.71	0.427
		2008	4.36	0.592	0.656	0.201
		2007	5.48	0.582	0.677	0.196
		2006	3.82	0.486	0.552	0.214
		2005	1.51	0.556	0.621	0.096
12	CREDIT	2011	8.22	0.53	0.68	0.49
		2010	1.63	0.425	0.549	0.668
		2009	8.4	0.513	0.655	0.582
		2008	5.6	0.498	0.625	0.559
		2007	15.57	0.486	0.604	0.599
		2006	8.4	0.545	0.713	0.516
		2005	7.96	0.552	0.601	0.53
13	DEV	2011	0.72	0.51	0.61	0.71
		2010	0.81	0.506	0.608	0.781
		2009	4.62	0.629	0.782	0.365
		2008	0.723	0.527	0.904	0.623
		2007	0.29	0.526	0.769	0.682
		2006	0.703	0.454	0.873	0.479
		2005	0.466	0.377	0.923	0.649
14	DTB	2011	5.7	0.66	0.78	0.36
		2010	2.78	0.646	0.774	0.371
		2009	3.12	0.611	0.726	0.402
		2008	9.76	0.612	0.721	0.409
		2007	27.32	0.652	0.805	0.351
		2006	11.9	0.641	0.793	0.385
		2005	5.11	0.636	0.746	0.361
15	DUBAI	2011	.	0.66	0.97	0.37
		2010	.	0.58	0.9	0.496
		2009	.	0.717	1.16	0.228
		2008	.	0.584	0.927	0.47
		2007	18.33	0.48	0.75	0.61
		2006	5680	0.6	0.93	0.44

		2005	17.68	0.5	0.81	0.48
16	ECOB	2011	82.87	0.42	0.46	0.64
		2010	0.896	0.36	0.588	0.855
		2009	2.78	0.462	0.596	0.392
		2008	8.5	0.488	0.615	0.37
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
17	EQUAT	2011	0.61	0.51	0.66	0.49
		2010	0.675	0.466	0.519	0.427
		2009	4.02	0.616	0.781	0.415
		2008	228.8	0.523	0.629	0.508
		2007	.	0.47	0.56	0.582
		2006	.	0.61	0.74	0.36
		2005	.	0.49	0.78	0.4
18	EQUITY	2011	3.93	0.083	0.11	0.41
		2010	4.96	0.096	0.112	0.413
		2009	.	0.62	0.832	0.304
		2008	8299	0.53	0.834	0.5
		2007	1.38	0.41	0.69	0.14
		2006	.	0.55	0.67	0.39
		2005	.	0.58	0.72	0.41
19	FAMILY	2011	12.82	0.53	0.69	0.44
		2010	.	0.506	0.63	0.461
		2009	.	0.577	0.687	0.338
		2008	9.87	0.483	0.625	0.598
		2007	69.82	0.479	0.607	0.613
		2006	.	.	.	.
		2005	.	.	.	.
20	FIDEL	2011	0.69	0.61	0.69	0.41
		2010	39.32	0.545	0.621	0.475
		2009	14.76	0.599	0.674	0.349
		2008	27.91	0.64	0.734	0.34
		2007	12.22	0.63	0.73	0.38
		2006	.	0.62	0.72	0.4
		2005	.	0.64	0.78	0.42
21	FINA	2011	0.57	0.53	0.6	0.49
		2010	2.14	0.485	0.546	0.536
		2009	1.97	0.507	0.572	0.5
		2008	3.86	0.631	0.74	0.343
		2007	19.18	0.607	0.921	0.484
		2006	6.39	0.582	0.709	0.437
		2005	5.61	0.574	0.71	0.442
22	FIRSTCOM	2011	.	0.49	0.55	0.46
		2010	13.55	0.468	0.532	0.433
		2009		0.514	0.629	0.38
		2008	6.21	0.273	0.415	0.803
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
23	GIRO	2011	6.61	0.54	0.63	0.51
		2010	1.95	0.48	0.594	0.582
		2009	27.45	0.543	0.62	0.509
		2008	11.83	0.574	0.665	0.453

		2007	22.64	0.55	0.625	0.47
		2006	68.18	0.59	0.67	0.43
		2005	58.11	0.6	0.68	0.39
24	GUARD	2011	.	0.69	0.8	0.32
		2010	.	0.589	0.679	0.435
		2009	38.13	0.608	0.716	0.39
		2008	.	0.639	0.775	0.38
		2007	.	0.59	0.72	0.44
		2006	5590	0.6	0.74	0.42
		2005	.	0.58	0.71	0.45
25	GULF	2011	7.18	0.58	0.69	0.44
		2010	26.5	0.654	0.761	0.297
		2009	.	0.639	0.77	0.384
		2008	.	0.386	0.56	0.61
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
26	HABZ	2011	7.88	0.31	0.4	0.82
		2010	3.45	0.277	0.331	0.797
		2009	1.15	0.296	0.372	0.792
		2008	5.79	0.334	0.41	0.757
		2007	8.84	0.265	0.33	0.846
		2006	31.8	0.24	0.3	0.86
		2005	8.91	0.26	0.35	0.85
27	HABIB	2011	289.67	0.37	0.46	0.77
		2010	1.42	0.294	0.359	0.845
		2009	2.31	0.269	0.356	0.95
		2008	0.9	0.22	0.327	1.13
		2007	1.13	0.24	0.34	1.04
		2006	230	0.27	0.33	0.85
		2005	2.53	0.28	0.37	0.91
28	HFCK	2011	.	0.79	0.95	0.29
		2010	.	0.665	0.794	0.36
		2009	.	0.793	1.04	0.239
		2008	.	0.727	1.03	0.32
		2007	.	0.74	0.88	0.22
		2006	.	0.69	0.83	0.27
		2005	.	0.7	0.81	0.23
29	IM	2011	4.51	0.61	0.78	0.44
		2010	4.06	0.57	0.759	0.443
		2009	20.12	0.56	0.684	0.46
		2008	3.63	0.71	0.913	0.28
		2007	9.59	0.65	0.81	0.32
		2006	11.18	0.66	0.81	0.34
		2005	10.13	0.61	0.78	0.31
30	IMPERIAL	2011	1.41	0.58	0.69	0.44
		2010	0.684	0.577	0.704	0.444
		2009	4.81	0.63	0.752	0.407
		2008	3.92	0.616	0.742	0.388
		2007	2.12	0.597	0.683	0.401
		2006	4.01	0.576	0.6	0.442
		2005	3.29	0.548	0.612	0.481
31	JAMII	2011	.	0.2	0.64	1.49
		2010	.	0.19	0.615	0.29

		2009	.	.	.	.
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
32	KCB	2011	2.54	0.64	0.82	0.34
		2010	1.11	0.616	0.789	0.349
		2009	1.58	0.56	0.7	0.311
		2008	1.16	0.454	0.722	0.674
		2007	1.11	0.5	0.66	0.41
		2006	7.69	0.47	0.57	0.47
		2005	1.21	0.52	0.68	0.35
33	KREP	2011	.	0.73	0.88	0.29
		2010	.	0.685	0.963	0.305
		2009	.	0.675	1.09	0.325
		2008	6.02	0.723	0.866	0.306
		2007	24.59	0.73	0.88	0.33
		2006	.	0.72	0.92	0.32
		2005	.	0.74	0.91	0.39
34	MIDEAST	2011	0.37	0.55	0.95	0.62
		2010	0.718	0.551	0.763	0.514
		2009	1.49	0.515	0.855	0.609
		2008	1.91	0.526	0.82	0.64
		2007	1.53	0.61	0.99	0.45
		2006	51.22	0.58	0.85	0.43
		2005	2.18	0.63	0.89	0.4
35	NBK	2011	42.97	0.41	0.5	0.63
		2010	5.47	0.347	0.429	0.738
		2009	151.46	0.256	0.313	0.849
		2008	70.77	0.21	0.26	0.87
		2007	79.56	0.19	0.23	0.86
		2006	12.65	0.73	0.9	0.24
		2005	63.13	0.23	0.4	0.64
36	NIC	2011	42.18	0.71	0.84	0.27
		2010	81.19	0.7	0.844	0.298
		2009	.	0.697	0.842	0.303
		2008	1254.6	0.7	0.834	0.3
		2007	27.87	0.71	0.9	0.3
		2006	36.58	0.63	0.75	0.39
		2005	30.09	0.7	0.87	0.46
37	ORIENT	2011	33.12	0.57	0.77	0.41
		2010	3.79	0.538	0.722	0.457
		2009	11.26	0.498	0.754	0.45
		2008	.	0.42	0.73	0.57
		2007	.	0.31	0.63	0.62
		2006	.	0.29	0.56	0.47
		2005	.	0.28	0.65	0.49
38	PARAM	2011	.	0.44	0.56	0.69
		2010	.	0.393	0.487	0.718
		2009	.	0.438	0.532	0.622
		2008	.	0.48	0.6	0.59
		2007	.	0.44	0.56	0.58
		2006	.	0.42	0.53	0.66
		2005	.	0.47	0.59	0.43

39	PRIME	2011	7.48	0.52	0.56	0.55
		2010	2.01	0.457	0.539	0.536
		2009	6.54	0.448	0.541	0.493
		2008	4.47	0.473	0.582	0.44
		2007	4.18	0.454	0.565	0.497
		2006	3.61	0.562	0.613	0.518
		2005	.	0.522	0.57	0.463
40	STD	2011	1.5	0.59	0.79	0.32
		2010	2.09	0.422	0.576	0.639
		2009	0.6	0.46	0.653	0.634
		2008	2.16	0.437	0.56	0.42
		2007	58.1	0.43	0.53	0.47
		2006	1.6	0.44	0.55	0.52
		2005	7.12	0.43	0.49	0.41
41	TRANS	2011	7.91	0.52	0.73	0.92
		2010	40.31	0.407	0.64	0.82
		2009	6.92	0.502	0.828	0.744
		2008	0.33	0.422	0.756	0.922
		2007	35.88	0.375	0.595	1.01
		2006	9.55	0.508	0.91	0.729
		2005	.	0.599	1.35	0.665
42	UBA	2011	0.74	0.16	0.4	1.83
		2010	.	0.118	0.239	1.35
		2009	.	.	.	4.64
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
43	VICTOR	2011	7.74	0.46	0.59	0.45
		2010	8.14	0.561	0.688	13.33
		2009	10.4	0.619	0.779	0.319
		2008	1.24	0.62	0.78	0.35
		2007	.	0.58	0.7	0.42
		2006	.	0.53	0.59	0.52
		2005	.	0.61	0.75	0.38

PROFITABILITY RATIOS

	FIRM	YEAR	NIM	OIAA	ROA	ROE	REP
1	ABC	2011	0.066	0.037	0.03	0.219	0.042
		2010	0.073	0.038	0.033	0.21	0.051
		2009	0.078	0.03	0.02	0.155	0.028
		2008	0.082	0.041	0.024	0.162	0.03
		2007	0.082	0.04	0.022	0.17	0.03
		2006	0.08	0.03	0.018	0.143	0.021
		2005	0.081	0.032	0.019	0.15	0.024
2	AFRICA	2011	0.042	0.014	0.011	0.093	0.012
		2010	0.039	0.023	0.013	0.121	0.015
		2009	0.041	0.036	0.016	0.142	0.013
		2008	0.038	0.029	0.017	0.155	0.012
		2007	0.04	0.029	0.019	0.126	0.017
		2006	0.035	0.022	0.009	0.102	0.013
		2005	0.039	0.016	0.001	0.005	0.006
3	BARODA	2011	0.064	0.005	0.037	0.276	0.043
		2010	0.053	0.024	0.043	0.294	0.045
		2009	0.055	0.008	0.023	0.204	0.026
		2008	0.071	0.009	0.024	0.23	0.037
		2007	0.06	0.011	0.024	0.08	0.027
		2006	0.06	0.008	0.022	0.21	0.022
		2005	0.06	0.009	0.024	0.16	0.029
4	INDIA	2011	0.048	0.008	0.033	0.227	0.034
		2010	0.049	0.01	0.035	0.249	0.029
		2009	0.054	0.011	0.026	0.193	0.033
		2008	0.06	0.014	0.03	0.22	0.034
		2007	0.063	0.012	0.028	0.22	0.031
		2006	0.052	0.011	0.019	0.16	0.023
		2005	0.056	0.01	0.02	0.18	0.021
5	BBK	2011	0.103	0.082	0.051	0.366	0.052
		2010	0.109	0.084	0.061	0.337	0.068
		2009	0.103	0.063	0.037	0.253	0.04
		2008	0.089	0.05	0.033	0.27	0.043
		2007	0.085	0.047	0.031	0.28	0.036
		2006	0.089	0.052	0.038	0.302	0.046
		2005	0.101	0.056	0.036	0.283	0.048
6	STANBIC	2011	0.06	0.033	0.014	0.189	0.018
		2010	0.047	0.042	0.014	0.147	0.018
		2009	0.039	0.041	-0.007	-0.013	0.016
		2008	0.046	0.041	0.015	0.184	0.021
		2007	0.098	0.056	0.024	0.16	0.019
		2006	0.092	0.063	0.037	0.314	0.025
		2005	0.087	0.072	0.026	0.278	0.031
7	CHASE	2011	0.056	0.021	0.016	0.203	0.019
		2010	0.062	0.031	0.018	0.216	0.022
		2009	0.064	0.03	0.016	0.173	0.018
		2008	0.07	0.023	0.016	0.2	0.02
		2007	0.063	0.033	0.022	0.18	0.03
		2006	0.062	0.026	0.019	0.123	0.023
		2005	0.061	0.023	0.021	0.17	0.024

8	CITIB	2011	0.042	0.05	0.039	0.991	0.04
		2010	0.083	0.038	0.028	0.134	0.028
		2009	0.064	0.038	0.036	0.168	0.036
		2008	0.084	0.047	0.04	0.2	0.04
		2007	0.08	0.03	0.022	0.14	0.03
		2006	0.08	0.032	0.024	0.144	0.026
		2005	0.05	0.02	0.02	0.117	0.021
9	CBA	2011	0.043	0.032	0.02	0.165	0.022
		2010	0.044	0.036	0.022	0.178	0.024
		2009	0.051	0.03	0.021	0.194	0.026
		2008	0.052	0.033	0.026	0.26	0.031
		2007	0.055	0.03	0.025	0.22	0.03
		2006	0.053	0.026	0.024	0.25	0.034
		2005	0.08	0.031	0.023	0.144	0.03
10	CONSOL	2011	0.069	0.041	0.01	0.105	0.015
		2010	0.074	0.062	0.017	0.134	0.028
		2009	0.088	0.057	0.012	0.087	0.026
		2008	0.092	0.063	0.021	0.113	0.024
		2007	0.092	0.061	0.016	0.143	0.018
		2006	0.074	0.052	0.019	0.105	0.023
		2005	0.115	0.072	-0.004	-0.016	-0.008
11	COOP	2011	0.072	0.058	0.025	0.201	0.027
		2010	0.074	0.066	0.028	0.217	0.034
		2009	0.076	0.069	0.027	0.184	0.032
		2008	0.104	0.072	0.028	0.174	0.033
		2007	0.102	0.072	0.023	0.238	0.034
		2006	0.099	0.061	0.015	0.177	0.039
		2005	0.051	0.056	0.008	0.108	0.032
12	CREDIT	2011	0.067	0.067	0.009	0.049	0.019
		2010	0.068	0.041	0.008	0.036	0.032
		2009	0.072	0.023	0.016	0.08	0.024
		2008	0.0598	0.025	0.015	0.081	0.023
		2007	0.071	0.021	0.027	0.162	0.03
		2006	0.072	0.024	0.024	0.124	0.021
		2005	0.071	0.019	0.025	0.116	0.019
13	DEV	2011	0.031	0.011	0.009	0.069	0.012
		2010	0.04	0.012	0.015	0.108	0.017
		2009	0.038	0.013	0.017	0.1	0.018
		2008	0.044	0.015	0.018	0.1	0.02
		2007	0.06	0.02	0.024	0.1	0.026
		2006	0.073	0.02	0.027	0.083	0.054
		2005	0.07	0.017	0.061	0.157	0.063
14	DTB	2011	0.069	0.022	0.029	0.217	0.048
		2010	0.066	0.036	0.035	0.255	0.057
		2009	0.083	0.039	0.029	0.216	0.035
		2008	0.066	0.029	0.029	0.215	0.032
		2007	0.071	0.032	0.021	0.158	0.027
		2006	0.056	0.02	0.023	0.187	0.025
		2005	0.057	0.021	0.018	0.208	0.024
15	DUBAI	2011	0.083	0.067	0.006	0.02	0.041
		2010	0.078	0.066	0.001	0.003	0.033
		2009	0.102	0.084	0.002	0.006	0.055
		2008	0.14	0.056	0.002	0.007	0.07
		2007	0.15	0.073	0.004	0.015	0.07

		2006	0.12	0.068	0.009	0.028	0.062
		2005	0.13	0.061	0.007	0.018	0.07
16	ECOB	2011	0.033	0.035	0.005	0.072	0.013
		2010	0.039	0.035	0.005	0.025	0.013
		2009	0.036	0.041	-0.057	-0.371	-0.003
		2008	0.04	0.037	0.007	0.04	0.01
		2007	.	.	.	.	.
		2006	.	.	.	.	.
		2005	.	.	.	.	.
17	EQUAT	2011	0.035	0.027	0.006	0.06	0.006
		2010	0.079	0.033	-0.01	-0.118	-0.003
		2009	0.076	0.016	0.012	0.025	0.014
		2008	0.07	0.02	0.001	0.01	0.024
		2007	0.05	0.014	0.011	0.08	0.02
		2006	0.06	0.02	0.016	0.102	0.025
		2005	0.06	0.026	0.021	0.097	0.03
18	EQUITY	2011	0.103	0.056	0.055	0.279	0.064
		2010	0.096	0.048	0.05	0.24	0.052
		2009	0.11	0.062	0.048	0.2	0.056
		2008	0.1	0.072	0.05	0.19	0.06
		2007	0.066	0.06	0.04	0.13	0.04
		2006	0.102	0.093	0.038	0.34	0.05
		2005	0.11	0.091	0.036	0.19	0.047
19	FAMILY	2011	0.109	0.054	0.014	0.107	0.028
		2010	0.1	0.072	0.019	0.125	0.039
		2009	0.11	0.076	0.017	0.119	0.022
		2008	0.069	0.062	0.021	0.144	0.03
		2007	0.078	0.068	0.019	0.131	0.023
		2006	.	.	.	.	.
		2005	.	.	.	.	.
20	FIDEL	2011	0.039	0.032	0.018	0.194	0.02
		2010	0.029	0.058	0.033	0.34	0.038
		2009	0.04	0.03	0.009	0.1	0.011
		2008	0.043	0.04	0.014	0.14	0.02
		2007	0.051	0.027	0.01	0.1	0.014
		2006	0.048	0.036	0.008	0.063	0.054
		2005	0.04	0.028	0.01	0.096	0.029
21	FINA	2011	0.062	0.037	0.014	0.133	0.022
		2010	0.058	0.04	0.006	0.066	0.023
		2009	0.068	0.034	0.005	0.058	0.014
		2008	0.065	0.026	0.004	0.035	0.014
		2007	0.084	0.041	0.014	0.107	0.026
		2006	0.086	0.042	0.035	0.236	0.041
		2005	0.076	0.043	0.03	0.226	0.036
22	FIRSTCOM	2011	0.073	0.036	0.008	0.085	0.013
		2010	0.1	0.022	0.015	0.173	0.017
		2009	0.068	0.02	-0.026	-0.17	-0.021
		2008	0.006	0.001	-0.071	-0.29	-0.068
		2007	.	.	.	.	.
		2006	.	.	.	.	.
		2005	.	.	.	.	.
23	GIRO	2011	0.048	0.013	0.025	0.191	0.027
		2010	0.041	0.062	0.05	0.384	0.053
		2009	0.057	0.023	0.022	0.17	0.024

		2008	0.06	0.018	0.013	0.13	0.018
		2007	0.06	0.024	0.006	0.063	0.04
		2006	0.06	0.02	0.008	0.09	0.033
		2005	0.06	0.021	0.007	0.065	0.039
24	GUARD	2011	0.057	0.02	0.013	0.11	0.028
		2010	0.037	0.025	0.009	0.079	0.019
		2009	0.06	0.014	0.006	0.044	0.025
		2008	0.066	0.024	0.006	0.035	0.04
		2007	0.047	0.02	0.003	0.021	0.02
		2006	0.06	0.02	0.007	0.043	0.025
		2005	0.052	0.02	0.004	0.029	0.021
25	GULF	2011	0.075	0.02	0.007	0.072	0.01
		2010	0.07	0.028	0.008	0.06	0.01
		2009	0.072	0.02	-0.016	-0.11	-0.013
		2008	0.041	0.02	-0.06	-0.22	-0.052
		2007	.	.	.	.	.
		2006	.	.	.	.	.
		2005	.	.	.	.	.
26	HABZ	2011	0.056	0.013	0.019	0.127	0.039
		2010	0.046	0.02	0.02	0.142	0.028
		2009	0.06	0.016	0.025	0.19	0.03
		2008	0.065	0.016	0.024	0.2	0.025
		2007	0.06	0.015	0.022	0.182	0.028
		2006	0.061	0.016	0.02	0.165	0.027
		2005	0.053	0.016	0.02	0.15	0.03
27	HABIB	2011	0.68	0.015	0.028	0.156	0.028
		2010	0.063	0.003	0.027	0.166	0.031
		2009	0.07	0.013	0.027	0.17	0.03
		2008	0.06	0.012	0.022	0.16	0.022
		2007	0.06	0.015	0.02	0.144	0.028
		2006	0.06	0.016	0.006	0.04	0.018
		2005	0.06	0.014	0.008	0.041	0.019
28	HFCK	2011	0.062	0.009	0.021	0.141	0.027
		2010	0.05	0.009	0.013	0.089	0.021
		2009	0.07	0.011	0.013	0.056	0.03
		2008	0.061	0.014	0.009	0.04	0.016
		2007	0.07	0.018	0.009	0.063	0.05
		2006	0.082	0.016	0.008	0.06	0.055
		2005	0.071	0.015	0.006	0.06	0.052
29	IM	2011	0.069	0.026	0.04	0.223	0.043
		2010	0.055	0.029	0.034	0.163	0.039
		2009	0.06	0.02	0.027	0.163	0.03
		2008	0.065	0.023	0.031	0.22	0.04
		2007	0.068	0.022	0.03	0.23	0.034
		2006	0.064	0.022	0.029	0.23	0.032
		2005	0.059	0.02	0.028	0.228	0.037
30	IMPERIAL	2011	0.11	0.028	0.047	0.325	0.04
		2010	0.111	0.035	0.046	0.293	0.04
		2009	0.102	0.034	0.037	0.247	0.036
		2008	0.096	0.035	0.036	0.24	0.038
		2007	0.097	0.043	0.032	0.238	0.036
		2006	0.104	0.028	0.032	0.184	0.04
		2005	0.102	0.039	0.03	0.176	0.043
31	JAMII	2011	0.125	0.02	-0.018	-0.025	-0.009

		2010	0.294	0.025	-0.049	-0.082	-0.026
		2009	.	.	.	.	.
		2008	.	.	.	.	.
		2007	.	.	.	.	.
		2006	.	.	.	.	.
		2005	.	.	.	.	.
32	KCB	2011	0.092	0.043	0.035	0.218	0.04
		2010	0.096	0.044	0.04	0.216	0.048
		2009	0.1	0.05	0.026	0.2	0.033
		2008	0.08	0.052	0.022	0.19	0.042
		2007	0.093	0.075	0.02	0.183	0.07
		2006	0.082	0.11	0.031	0.24	0.1
		2005	0.074	0.102	0.027	0.18	0.08
33	KREP	2011	0.142	0.06	0.02	0.13	0.05
		2010	0.126	0.049	0.007	0.044	0.014
		2009	0.17	0.052	-0.03	-0.19	0.008
		2008	0.12	0.05	-0.044	-0.32	-0.003
		2007	0.142	0.047	0.019	0.129	0.03
		2006	0.125	0.045	0.02	0.112	0.022
		2005	0.18	0.046	0.02	0.126	0.04
34	MIDEAST	2011	0.05	0.03	0.02	0.09	0.02
		2010	0.045	0.068	0.035	0.137	0.042
		2009	0.06	0.03	0.009	0.032	0.012
		2008	0.054	0.03	0.005	0.021	0.02
		2007	0.071	0.026	0.02	0.07	0.028
		2006	0.065	0.026	0.02	0.081	0.031
		2005	0.068	0.028	0.03	0.083	0.036
35	NBK	2011	0.09	0.04	0.02	0.15	0.03
		2010	0.077	0.046	0.024	0.147	0.027
		2009	0.081	0.047	0.028	0.185	0.31
		2008	0.084	0.05	0.03	0.2	0.04
		2007	0.086	0.043	0.027	0.23	0.095
		2006	0.12	0.04	0.018	0.16	0.461
		2005	0.1	0.036	0.02	0.18	0.101
36	NIC	2011	0.06	0.03	0.03	0.26	0.04
		2010	0.061	0.028	0.032	0.219	0.037
		2009	0.06	0.03	0.024	0.16	0.033
		2008	0.05	0.026	0.024	0.19	0.03
		2007	0.06	0.024	0.024	0.16	0.04
		2006	0.065	0.02	0.018	0.15	0.042
		2005	0.061	0.018	0.019	0.13	0.032
37	ORIENT	2011	0.05	0.05	0.03	0.12	0.04
		2010	0.038	0.06	0.034	0.137	0.047
		2009	0.04	0.032	0.012	0.04	0.02
		2008	0.051	0.053	0.021	0.052	0.025
		2007	0.06	0.2	0.086	0.18	0.3
		2006	0.048	0.033	-0.035	-0.074	0.24
		2005	0.06	0.11	0.076	0.21	0.087
38	PARAM	2011	0.04	0.02	0.02	0.1	0.02
		2010	0.061	0.076	0.057	0.321	0.063
		2009	0.06	0.018	0.011	0.064	0.014
		2008	0.06	0.023	0.014	0.08	0.02
		2007	0.064	0.032	0.013	0.07	0.06
		2006	0.042	0.042	0.01	0.052	0.062

		2005	0.054	0.054	0.012	0.061	0.058
39	PRIME	2011	0.116	0.019	0.024	0.224	0.029
		2010	0.078	0.021	0.019	0.155	0.024
		2009	0.094	0.018	0.017	0.132	0.021
		2008	0.122	0.017	0.017	0.107	0.024
		2007	0.043	0.019	0.017	0.124	0.024
		2006	0.083	0.024	0.016	0.113	0.021
		2005	0.101	0.019	0.018	0.11	0.024
40	STD	2011	0.08	0.04	0.04	0.28	0.04
		2010	0.07	0.04	0.038	0.266	0.041
		2009	0.07	0.04	0.04	0.34	0.043
		2008	0.09	0.041	0.033	0.28	0.37
		2007	0.084	0.044	0.04	0.32	0.044
		2006	0.08	0.04	0.032	0.26	0.042
		2005	0.08	0.031	0.03	0.27	0.04
41	TRANS	2011	0.078	0.054	0.028	0.116	0.037
		2010	0.085	0.065	0.03	0.092	0.043
		2009	0.118	0.045	0.027	0.068	0.037
		2008	0.102	0.046	0.039	0.107	0.05
		2007	0.094	0.097	0.059	0.172	0.073
		2006	0.097	0.078	0.033	0.075	0.057
		2005	0.12	0.074	0.026	0.049	0.04
42	UBA	2011	0.03	0.06	-0.05	-0.21	-0.05
		2010	0.072	0.106	-0.045	-0.12	-0.045
		2009	0.05	0.009	-0.13	-0.16	-0.013
		2008	.	.	.	.	.
		2007	.	.	.	.	.
		2006	.	.	.	.	.
		2005	.	.	.	.	.
43	VICTOR	2011	0.07	0.02	0.03	0.18	0.03
		2010	0.082	0.025	0.035	0.195	0.035
		2009	0.07	0.016	0.03	0.16	0.03
		2008	0.06	0.02	0.026	0.15	0.026
		2007	0.051	0.02	0.025	0.16	0.028
		2006	0.05	0.018	0.022	0.14	0.024
		2005	0.043	0.017	0.023	0.146	0.026

ASSET QUALITY RATIOS

	FIRM	YEAR	LLPNIR	LLRIL	ILGL	NCONIBLLP
1	ABC	2011	0.016	0.043	0.039	0.031
		2010	0.058	0.127	0.059	0.105
		2009	0.125	0.016	0.094	0.28
		2008	0.092	0.013	0.084	0.21
		2007	0.14	0.011	0.105	0.295
		2006	0.04	0.02	0.124	0.12
		2005	0.09	0.019	0.118	0.22
2	AFRICA	2011	0.033	0.591	0.016	0.094
		2010	0.063	0.539	0.017	0.136
		2009	0.052	0.564	0.018	0.152
		2008	0.048	0.55	0.012	0.12
		2007	0.061	.	0.013	0.09
		2006	0.057	.	0.011	0.082
		2005	0.043	.	0.009	0.065
3	BARODA	2011	0.087	0.313	0.034	0.127
		2010	0.033	0.298	0.038	0.039
		2009	0.038	0.093	0.113	0.074
		2008	0.203	0.21	0.06	0.36
		2007	0.06	.	0.05	0.12
		2006	0.005	.	0.07	0.011
		2005	0.046	.	0.05	0.16
4	INDIA	2011	0.016	0.444	0.023	0.023
		2010	-0.104	0.473	0.022	-0.17
		2009	0.133	0.3	0.037	0.208
		2008	0.05	0.17	0.06	0.09
		2007	0.06	.	0.05	0.11
		2006	0.089	.	0.04	0.18
		2005	0.059	.	0.06	0.19
5	BBK	2011	0.062	0.86	0.026	0.096
		2010	0.077	1.11	0.025	0.102
		2009	0.035	0.751	0.024	0.078
		2008	0.092	0.322	0.018	0.188
		2007	0.06	0.098	0.026	0.123
		2006	0.099	0.031	0.057	0.164
		2005	0.158	.	0.064	0.263
6	STANBIC	2011	.	.	0.016	.
		2010	.	.	0.03	.
		2009	0.128	.	0.062	0.165
		2008	0.073	0.181	0.083	0.21
		2007	0.067	0.178	0.092	0.192
		2006	0.085	0.169	0.088	0.155
		2005	0.059	0.022	0.063	0.141
7	CHASE	2011	0.053	0.543	0.034	0.138
		2010	0.054	0.546	0.042	0.123
		2009	0.033	0.285	0.054	0.054
		2008	0.068	0.24	0.07	0.18
		2007	0.1232	0.1	0.08	0.23
		2006	0.05	0.24	0.062	0.18
		2005	0.13	0.11	0.09	0.24
8	CITIB	2011	0.004	0.748	0.014	0.004

		2010	0.005	0.648	0.018	0.007
		2009	0.002	0.991	0.016	0.002
		2008	0.006	0.82	0.017	0.008
		2007	0.09	0.325	0.04	0.13
		2006	0.04	0.26	0.04	0.07
		2005	0.104	0.13	0.07	0.188
9	CBA	2011	0.064	0.207	0.065	0.123
		2010	0.078	0.212	0.068	0.131
		2009	0.096	0.157	0.058	0.166
		2008	0.12	0.123	0.062	0.165
		2007	0.04	0.114	0.09	0.07
		2006	0.25	0.07	0.1	0.3
		2005	0.09	0.115	0.08	0.06
10	CONSOL	2011	0.094	0.149	0.039	0.353
		2010	0.19	0.153	0.059	0.407
		2009	0.198	0.056	0.153	0.44
		2008	0.164	0.052	0.146	0.433
		2007	0.166	0.132	0.098	0.462
		2006	0.174	0.061	0.059	0.384
		2005	0.053	0.042	0.056	0.433
11	COOP	2011	0.09	0.382	0.0002	0.163
		2010	0.084	0.418	0.0001	0.154
		2009	0.089	0.312	0.0001	0.175
		2008	0.071	.	0.0002	0.146
		2007	0.155	.	0.0002	0.314
		2006	0.427	.	0.0003	0.626
		2005	0.351	.	0.0003	0.726
12	CREDIT	2011	0.104	0.045	0.153	0.552
		2010	0.388	0.04	0.26	0.767
		2009	0.113	0.069	0.154	0.408
		2008	0.141	0.058	0.189	0.349
		2007	0.048	0.06	0.206	0.108
		2006	-0.04	0.037	0.249	-0.125
		2005	0.032	0.028	0.224	0.096
13	DEV	2011	0.093	0.131	0.179	0.223
		2010	0.108	0.144	0.131	0.212
		2009	0.028	.	0.136	0.056
		2008	0.03	.	0.12	0.06
		2007	0.04	.	0.08	0.083
		2006	0.43	.	0.23	0.51
		2005	0.41	.	0.34	0.11
14	DTB	2011	0.105	0.174	0.013	0.132
		2010	0.13	0.169	0.018	0.134
		2009	0.084	0.349	0.009	0.179
		2008	0.078	.	0.0009	0.144
		2007	0.039	.	0.003	0.083
		2006	0.055	.	0.002	0.108
		2005	0.113	.	0.0005	0.258
15	DUBAI	2011	0.503	0.03	0.349	0.854
		2010	0.484	0.02	0.449	0.968
		2009	0.702	0.017	0.627	0.966
		2008	0.61	0.022	0.72	0.97
		2007	0.8	.	1.01	0.94
		2006	0.57	.	0.64	0.86

		2005	0.75	.	0.98	0.965
16	ECOB	2011	0.323	.	0.214	0.646
		2010	0.248	.	0.351	0.646
		2009	2.11	.	0.629	-0.199
		2008	0.13	0.065	0.79	0.35
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
17	EQUAT	2011	0.0003	0.26	0.089	0.001
		2010	0.253	0.081	0.247	-2.34
		2009	0.028	0.1	0.147	0.129
		2008	0.38	0.13	0.094	0.944
		2007	0.163	.	0.074	0.411
		2006	0.168	.	0.103	0.36
		2005	0.17	.	0.082	0.4
18	EQUITY	2011	0.099	0.136	0.029	0.136
		2010	0.1	0.13	0.026	0.13
		2009	0.11	0.074	0.076	0.16
		2008	0.15	0.13	0.06	0.19
		2007	0.07	0.211	0.055	0.1
		2006	0.102	.	0.073	0.17
		2005	0.09	.	0.069	0.13
19	FAMILY	2011	0.099	0.198	0.045	0.487
		2010	0.233	.	0.029	0.499
		2009	0.061	.	0.064	0.246
		2008	0.063	.	0.128	0.165
		2007	0.059	.	0.132	0.157
		2006	.	.	.	.
		2005	.	.	.	.
20	FIDELITY	2011	0.043	0.167	0.075	0.079
		2010	0.191	0.105	0.104	0.136
		2009	0.08	0.22	0.05	0.21
		2008	0.1	0.25	0.05	0.21
		2007	0.1	0.16	0.06	0.304
		2006	1.13	0.13	0.08	0.86
		2005	0.32	0.12	0.07	0.84
21	FINA	2011	0.136	0.1	0.049	0.369
		2010	0.305	0.022	0.132	0.724
		2009	0.152	0.056	0.126	0.574
		2008	0.156	0.119	0.086	0.68
		2007	0.152	0.08	0.112	0.459
		2006	0.072	0.055	0.172	0.142
		2005	0.071	0.048	0.173	0.148
22	FIRSTCOM	2011	0.073	.	0.128	0.355
		2010	0.032	.	0.073	0.101
		2009	0.1	.	0.009	-0.22
		2008	0.64	.	.	-0.042
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
23	GIRO	2011	0.033	0.549	0.023	0.056
		2010	0.071	0.302	0.042	0.053
		2009	0.039	0.3	0.045	0.09
		2008	0.08	0.13	0.1	0.25

		2007	0.66	0.1	0.15	0.85
		2006	0.48	0.1	0.16	0.74
		2005	0.52	0.1	0.14	0.81
24	GUARD	2011	0.287	.	0.094	0.526
		2010	0.276	.	0.142	0.513
		2009	0.36	.	0.249	0.77
		2008	0.57	.	0.33	0.87
		2007	0.407	.	0.42	0.85
		2006	0.38	.	0.504	0.73
		2005	0.39	.	0.494	0.8
25	GULF	2011	0.044	0.138	0.064	0.269
		2010	0.039	0.486	0.023	0.237
		2009	0.04	3.36	0.003	-0.16
		2008	0.14	.	.	-0.077
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
26	HABZ	2011	0.406	0.93	0.037	0.519
		2010	0.203	0.755	0.042	0.309
		2009	0.005	0.42	0.07	0.01
		2008	0.02	0.15	0.06	0.05
		2007	0.11	.	0.045	0.21
		2006	0.13	.	0.034	0.25
		2005	0.14	.	0.048	0.28
27	HABIB	2011	0.0008	0.31	0.027	0.002
		2010	0.066	0.203	0.037	0.118
		2009	0.003	0.13	0.06	0.008
		2008	0.004	0.1	0.081	0.01
		2007	0.14	.	0.081	0.29
		2006	0.22	.	0.1	0.66
		2005	0.24	.	0.09	0.68
28	HFCK	2011	0.1	0.21	0.063	0.216
		2010	0.17	0.343	0.075	0.384
		2009	0.2	0.32	0.13	0.49
		2008	0.12	0.23	0.2	0.429
		2007	0.6	0.17	0.34	0.82
		2006	0.63	0.104	0.63	0.85
		2005	0.64	0.11	0.38	0.835
29	I&M	2011	0.039	0.023	0.021	0.055
		2010	0.104	.	0.033	0.135
		2009	0.05	.	0.044	0.09
		2008	0.08	.	0.075	0.13
		2007	0.07	0.02	0.022	0.124
		2006	0.062	0.022	0.024	0.106
		2005	0.069	0.02	0.021	0.11
30	IMPERIAL	2011	0.042	0.165	0.062	0.102
		2010	0.043	0.166	0.052	0.087
		2009	0.042	0.176	0.069	0.096
		2008	0.038	0.183	0.068	0.086
		2007	0.049	0.339	0.034	0.109
		2006	0.211	.	0.063	0.322
		2005	0.157	.	0.057	0.22
31	JAMII	2011	0.178	0.011	0.6	-1
		2010	0.279	0.03	0.407	-0.866

		2009	.	.	.	.
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
32	KCB	2011	0.069	0.15	0.058	0.13
		2010	0.103	0.005	0.095	0.177
		2009	0.094	0.007	0.13	0.203
		2008	0.33	.	0.12	0.48
		2007	0.716	.	0.169	0.702
		2006	0.96	.	0.28	0.68
		2005	0.79	.	0.216	0.69
33	KREP	2011	0.26	0.04	0.13	0.63
		2010	0.064	0.032	0.236	0.523
		2009	0.28	0.013	0.25	4.6
		2008	0.43	0.04	0.184	0.48
		2007	0.072	0.1	0.084	0.3
		2006	0.022	0.29	0.04	0.106
		2005	0.07	0.11	0.089	0.42
34	MIDEAST	2011	0.04	0.31	0.25	0.08
		2010	0.175	0.425	0.018	0.165
		2009	0.06	0.33	0.025	0.237
		2008	0.255	0.02	0.2	0.684
		2007	0.15	0.2	0.05	0.314
		2006	0.22	0.082	0.062	0.36
		2005	0.18	0.104	0.079	0.34
35	NBK	2011	0.14	0.23	0.04	0.31
		2010	0.032	0.157	0.062	0.199
		2009	0.04	0.1	0.1	0.09
		2008	0.12	0.034	0.27	0.23
		2007	0.96	0.01	0.697	0.714
		2006	4.05	0.018	1.27	0.96
		2005	3.91	0.019	0.88	0.79
36	NIC	2011	0.06	0.19	0.05	0.09
		2010	0.092	0.168	0.057	0.144
		2009	0.18	0.14	0.07	0.29
		2008	0.1	0.22	0.044	0.16
		2007	0.3	0.18	0.052	0.4
		2006	0.45	0.11	0.085	0.59
		2005	0.38	0.091	0.072	0.42
37	ORIENT	2011	0.32	0.52	0.14	0.29
		2010	0.408	0.509	0.134	0.278
		2009	0.12	0.36	0.29	0.224
		2008	0.13	0.27	0.59	0.16
		2007	8	.	1.16	0.71
		2006	12.44	.	1.71	1.14
		2005	9.03	.	1.5	0.92
38	PARAM	2011	0.05	0.03	0.35	0.09
		2010	0.178	0.026	0.364	0.097
		2009	0.053	0.031	0.355	0.19
		2008	0.008	0.009	0.8	0.3
		2007	1.1	0.008	0.82	0.78
		2006	1.43	0.009	0.81	0.84
		2005	1.28	0.012	0.84	0.89

39	PRIME	2011	0.122	.	0.042	0.191
		2010	0.138	.	0.037	0.204
		2009	0.109	.	0.051	0.194
		2008	0.172	.	0.072	0.305
		2007	0.166	.	0.041	0.278
		2006	0.105	.	0.058	0.24
		2005	0.163	.	0.069	0.228
40	STD	2011	0.06	0.44	0.01	0.09
		2010	0.053	0.215	0.02	0.077
		2009	0.07	0.12	0.026	0.1
		2008	0.07	0.11	0.04	0.12
		2007	0.1	0.094	0.05	0.14
		2006	0.15	0.082	0.074	0.22
		2005	0.16	0.078	0.072	0.24
41	TRANS	2011	0.12	0.072	0.127	0.239
		2010	0.178	0.085	0.139	0.304
		2009	0.102	0.083	0.151	0.274
		2008	0.122	0.079	0.176	0.219
		2007	0.179	0.098	0.178	0.195
		2006	0.309	0.039	0.356	0.429
		2005	0.15	0.047	0.3	0.366
42	UBA	2011	0.06	0.24	0.04	-0.03
		2010	.	.	.	.
		2009	3.48	.	.	-8.69
		2008	.	.	.	.
		2007	.	.	.	.
		2006	.	.	.	.
		2005	.	.	.	.
43	VICTORIA	2011	0.01	.	.	0.03
		2010	0.005	.	.	0.009
		2009	0.003	.	.	0.007
		2008	0.004	3.5	0.004	0.008
		2007	0.04	3.5	0.003	0.071
		2006	0.072	1.08	0.006	0.12
		2005	0.076	1.81	0.005	0.14

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(%)

	FIRM	2005	2006	2007	2008	2009	2010	2011
1	ABC	0.84	0.75	0.7	0.59	0.65	0.63	0.63
2	AFRICA	0.87	0.96	0.9	1.02	1.26	1.42	1.7
3	BARODA	1.53	1.63	1.59	1.49	1.6	1.91	1.83
4	INDIA	1.18	1.21	1.17	1.08	1.17	1.16	1.17
5	BBK	17.3	16.7	16.1	13.9	12.5	10.7	8.87
6	STANBIC	3.46	3.4	3.08	6.17	5.66	5.3	5.09
7	CHASE	0.52	0.62	0.61	0.74	0.87	1.09	1.49
8	CITIB	5.62	5.59	5.22	4.4	4.26	3.84	3.96
9	CBA	4.44	5.04	4.35	4.03	3.98	3.6	3.98
10	CONSOL	0.6	0.58	0.5	0.43	0.5	0.61	0.68
11	COOP	7.77	7.51	7.11	7.83	8.63	8.97	8.41
12	CREDIT	0.51	0.43	0.41	0.34	0.31	0.29	0.28
13	DEV	0.68	0.63	0.57	0.52	0.51	0.5	0.46
14	DTB	2.44	2.98	3.61	3.52	3.44	3.36	3.77
15	DUBAI	0.28	0.25	0.22	0.17	0.15	0.14	0.15
16	ECOB	.	.	.	0.98	1.08	1.59	1.01
17	EQUAT	0.66	0.61	0.57	0.4	0.35	0.53	0.57
18	EQUITY	2.16	3.07	8	8.5	9.02	9.14	10
19	FAMILY	.	.	1.06	0.98	1.06	1.27	1.34
20	FIDEL	0.3	0.33	0.34	0.35	0.38	0.45	0.5
21	FINA	1.07	0.98	0.92	0.83	0.84	0.75	0.69
22	FIRSTCOM	0	0	0	0.33	0.35	0.35	0.41
23	GIRO	0.75	0.69	0.6	0.49	0.52	0.59	0.6
24	GUARD	0.82	0.76	0.65	0.5	0.51	0.46	0.44
25	GULF	0	0	0	0.52	0.61	0.56	0.6
26	HABZ	0.77	0.75	0.68	0.55	0.54	0.48	0.44
27	HABIB	0.51	0.45	0.42	0.37	0.36	0.32	0.32
28	HFCK	1.69	1.4	1.23	1.54	1.56	1.54	1.48
29	IM	2.93	3.17	3.32	3.18	3.51	4.07	4.09
30	IMPERIAL	1.35	1.36	1.29	1.17	1.17	1.13	1.26
31	JAMII	.	.	.	.	.	0.22	0.25
32	KCB	12.7	12.7	12	13.3	12.7	13.9	14.5
33	KREP	0.72	0.82	0.8	0.65	0.55	0.46	0.46
34	MIDEAST	0.77	0.61	0.45	0.35	0.29	0.27	0.26
35	NBK	5.07	4.87	4.65	3.82	4.05	3.72	3.6
36	NIC	3.47	3.66	3.68	3.69	3.43	3.27	3.7
37	ORIENT	0.43	0.36	0.33	0.31	0.31	0.32	0.31
38	PARAM	0.29	0.37	0.31	0.26	0.25	0.28	0.28
39	PRIME	1.12	1.47	1.55	1.79	1.75	1.8	1.64
40	STD	12.3	11.4	10	8.09	8.32	8.01	7.74
41	TRANS	0.63	0.61	0.51	0.42	0.37	0.37	0.44
42	UBA	.	.	.	.	0.21	0.19	0.16
43	VICTORIA	0.72	0.62	0.5	0.42	0.42	0.39	0.4