

**THE DETERMINANTS OF BANK FAILURES: A SURVEY OF COMMERCIAL
BANKS IN KENYA**

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**MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
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DECLARATION

I, the undersigned declare that this project is my original work and it has never been presented to any university for academic credit. All information from other sources are duly cited and acknowledged.

Signed----------Date-----07/11/2007

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

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DEDICATION

This research project is dedicated to my late parents Mr. Jackson Kipkore Cheserek and Mrs. Pauline Cheserek. I further dedicate it to my spouse Hellen Jerop Kosgei and my sons Adrian and Fidelis for all their love and support.

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ABBREVIATIONS

BSA	-	Banking Supervisory Application
CBK	-	Central Bank of Kenya
DPF	-	Deposit Protection Fund
GDP	-	Gross domestic product
IMF	-	International Monetary Fund
NBFI	-	Non-bank financial institutions
SPSS	-	Statistical packaging of Social Science

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ABSTRACT

This paper examines the determinants of bank failure in Kenya over a period of five years between 1998 and 2005 using capital adequacy, asset quality and earnings after tax are cited as major predictors of bank failure. Ratios used to measure capital adequacy, asset quality and return on assets have shown to be suitable predictors of bank failure. This study addresses the determinants of commercial bank failures in the banking industry.

Data from 21 commercial banks was obtained and analyzed using SPSS package. Kenya's banking industry looked shaky but is currently stabilizing. Key ratios like capital adequacy, asset quality and return on assets did not have a consistent trend and this was worrying. It showed that banks' management did not have clear policies on how to maintain and grow these key ratios. Looking at individual bank may not be a strong relationship that certain variable highly affected bank failure.

The study showed that bank failure has no significant relationship with earnings after tax, total loans, total equity and return on assets. However, bank failure has a significant relationship with capital adequacy, asset quality and total assets. Asset quality was the most critical aspect that affects bank failure but capital adequacy and total assets also affected the predictability of a failure in a commercial bank. Total assets influenced the relationship between the asset quality with bank failure and increase in capital adequacy will accelerate the chances of bank failure. A decrease in total assets will increase the capital adequacy ratio and hence increase the chances of bank failure.

Over the last decade, national and international regulatory bodies, in an attempt to lessen the chance of a bank failure have imposed stricter requirements on capital adequacy and asset quality. This study addresses the imbalance by developing an approach to measure the benefits of capital adequacy, asset quality, total loans, total assets and return on assets to curb the bank failure and adopt the desired levels for all the variables that influence bank failure.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The term “bank failure” has been interpreted varyingly. The more precise definitions have focused on accounting factors (for example, Martin, 1977 and Beston and Kaufman, 1995), economic factors (Bell, Ribar, and Verchio 1990 and Gonzalez-Hermosillo, Pazarbasioglu and Billings 1997), or legal factors (Meyer and Pifer, 1970). Conversely, more general definitions have attempted to be all-inclusive and have applied a “catch-all” combination of specific definitions (for example, Thomson, 1992). Using general definitions of “bank failure” embracing closure, bankruptcy, supervised merger, or direct government assistance, we assess the population of banks in Kenya over the period 2001-2005.

Over the last decade, national and international bank regulatory authorities have tightened capital adequacy requirements for financial institutions with the aim of increasing the stability of national banking systems. Instrumental in this development has been the so-called Basle committee Capital Accord, which was issued in 1988 and set common minimum capital requirements on the perceived risk of bank portfolios instead of on simple leverage ratios.

Several studies have identified the characteristics that cause banks to fail. Apart from excessive risk-taking, or simply bad luck, banks that are poorly managed are thought to be prone to failure. By contrast, the characteristics that determine whether a bank will fail have received comparatively little attention. One hypothesis, discussed by Hannan and Rhodes (1987), suggests that poorly-managed banks are likely targets for acquisition by bankers who think they can enhance the target’s management quality, and hence its profitability and value.

The regulator evaluates banks on five criteria: capital adequacy, asset quality, management, earnings and liquidity (CAMEL). We base our empirical model on these

criteria, and identify a number of characteristics significantly affecting the likelihood that a bank will disappear because of failure or acquisition. Not surprisingly, we find that highly leveraged banks, banks with low earnings, low liquidity, or risky asset portfolios are more likely to fail than other banks.

The question of bank failure has received much attention in the literature. Literally, from the US banking crisis in 1930's economic researches have addressed the question of causes of bank failure. There are basically two approaches to the explanation of this question and each centres upon a particular problem analysed. Analysis of the probability of failure is based on calculation of regression equations in which regress and is dichotomous and the regressors are the value and trend of selected balance sheet and income variables. Meyer and Pifer (1970) created a model that analyses bank failure by matching each failed bank with comparable solvent bank under similar local and national economic conditions, and determined financial variables, which can potentially lead to insolvency. Hwang, Lee and Lian (1997) determined the most stable factors influence the probability of bank failure and those factors which can be changed over time.

In Kenya as in many parts of the world, the management of a bank's capital adequacy position is instrumental in sustaining its liquidity and by extension a key ingredient in maintaining its solvency. Without sufficient capital a bank can find itself unable to grow its deposit base and its loans portfolio. In addition to capital adequacy, too tight a regulation, such as that of raising the minimum liquidity ratio, may lead banks to reduce their credit offer and, as a result, give rise to a fall in productive investments. All these arguments justify studying the way banks set their capital to assets ratio.

On the other hand, the classic thesis states that, restoring one or more of these excluded conditions, the value of the firm may reach an internal maximum with positive equity in its financial structure. In supporting the idea of an optimal capital ratio for banking institutions, some authors have contemplated several exceptions to the theorem of MM: bankruptcy and agency costs, liquidity services and operations costs associated to deposits and deposit insurance. In those situations they have shown that the market value

of a bank is not independent of the way it is financed; in the absence of regulation an optimal capital ratio may exist.

The last few decades brought significant changes to financial markets on a global scale. Structural changes involving traditional operators in the fields of banking, asset management or insurance business led to modifications of regulatory as well as supervisory settings of the financial systems. Moreover, as numerous serious financial crises especially at the end of the 1990's showed, the global financial architecture is still fragile and comparably easy to attack. Bank failures is not a unique phenomenon to the Kenyan economy only, but have been experienced in both the developed and developing world. Effective regulation is therefore meant to reduce failure and loss to depositors (Nicholl Peter, 1996).

It is worth noting however, that despite the government's effort to streamline the banking sector by introducing statutory regulatory measures of containment more banks in 1983, 32 to be precise, have been liquidated or put under receivership in the period that followed the introduction of these control mechanisms. During this period, more banks collapsed due to the weak internal controls, bad governance and management practices. For instance, the Continental Bank of Kenya Limited and Continental Credit Finance Limited collapsed in 1986, Capital Finance Limited collapsed in 1987, and seven banks which had collapsed were merged in to the Consolidated Bank of Kenya limited in 1989, thirteen banks collapsed in 1993 and five banks collapsed between 1996 and 1999. In 1999 Trust Bank, the sixth largest bank in Kenya – in terms of deposits - collapsed due mainly to insider lending to directors and share holders. The most recent bank failure was witnessed Euro Bank in 2003 and Daima Bank in 2005 collapsed and the statutory management of Charter House bank

The rapid growth in these financial institutions in Kenya has facilitated control of the money supply by easy cash deposit and withdrawal which plays a vital role in an economy and normal running of businesses. The Government of Kenya through the regulatory and supervisory roles has tried to establish a financial system which is

relatively developed compared with many other Sub - Sahara African countries. The numbers of commercial banks have grown over the last thirty years as well as the number of services they offer. The country also has thousands of savings and credit associations to which most Kenyan workers belong and which have become very important avenues to accumulate savings. This makes it evident that the Kenyan economy is highly monetized, with the monetary sector contributing nearly 95 percent of the country's Gross Domestic Product (GDP). (The Economist Intelligent Unit: Country report on Kenya, 1995).

1.2 Review of Central Bank Regulatory Policy

Policy makers everywhere protect or regulate the banking system on efficiency, welfare and public policy growth. One problem is that it is almost impossible to find a banking system where there is no intervention, so it becomes academic to describe how an intervention-free banking system would look and behave (Nicholl Peter, 1996). What then is the role of the modern bank supervisor? The supervisor's primary role is damage control. The form of the damage control in banking begins with diagnosis, assessments and evaluation of problems on a timely basis. (Sheng A. 1996).

A corollary of this objective requires bank supervisors to minimise moral hazard behaviour, connected lending, conflicts of interest, fraud and mismanagement through effective regulation backed by a good legal regulation framework. Accordingly, financial sector liberalization is going through a phase of re-regulation with a broader coverage extending not only to the banking sector but also to non-banking financial intermediaries (Sheng A. 1996). Banks are particularly subject to market failures arising from asymmetries of information. On the asset side, they take on the risk of valuing projects and funding borrowers whose ability to repay is uncertain. On the liability side, the confidence of creditors and deposits who have imperfect information on the bank's actual position is essential to a bank's ability to provide deposits and payments services. High leverage and the illiquidity and in transparency of bank assets render banks particularly vulnerable to losses of creditors' confidence. Because of sequential servicing (where the

first in line is served first), depositors and other creditors have an incentive to run when confidence is lost (Diamond and Dybig, 1983).

Section 107 of the Banking Act prohibits banks from lending to any individual or group of companies more than 25 percent of Capital and Reserves. (Central Bank, 1998). This section has been a contentious issue and has been blamed for the collapse of many banks in Kenya. Banks continue to lend more than this percentage to people, especially directors. Therefore Central Bank supervisory department has to be more stringent in ensuring that this section is fully complied with in order to avoid such practices in the future. Another area is insider lending which involves giving loans to bank officers without adhering to the rules as per the Central bank regulations.

Meanwhile Central Bank of Kenya has put in place the following measures, aimed at enhancing stability and soundness of the banking system.

1. Enforcement of compliance with banking laws and prudential regulations.
2. Full implementation of the Risk Based Supervisory which started by the end of 2005 and this is done with technical assistance from IMF- East African office.
3. Introduction of more advanced inspection techniques by the use of Computer assisted audit techniques. In this, Bank examiners are using audit command language to interrogate computer files in the banking institutions and produce exception reports.
4. Introduction of the parallel run of Banking Supervisory Application (BSA)
5. Strengthening the inspection follow up process to ensure that financial institutions promptly address weaknesses observed during on –site examination.
6. Working closely with other Government agencies in addressing the problem of non-performing loans. (Central Bank Annual Report, 2005)

The regulation of the banking system is important not only for purposes of the reduction of possibility of bank failure or minimising depositors' possible loss, but because banking sector collapse is a systemic risk which may impact heavily and negatively in other areas of macro economy (Nicholl Peter, 1996).

1.3 Current Composition of the Banking Sector

The number of financial institutions currently operating is 42 commercial banks as per the lists of banks from the Central Bank of Kenya.

1.4 Problem Statement

Kenya has experienced banking problems since 1986 culminating in major bank failure (37 failed banks as at 1998) following the crises of 1986-1989, 1993/1994, 1998 and 2003 and subsequently 2005. In a banking crisis, depositors, lenders to banks and owners of bank capital all lose confidence and seek to simultaneously salvage their resources by withdrawing them. The cost of bank failure is colossal hence the necessity to get "Out of the Dark" (Sheng, 1991). Indeed a "Wake up Call" to improve performance, restore insolvency, improve profitability and rebuild confidence as most financial system, "were asleep" prior to the financial crisis, (Senbet, 1998). Ailing banks require quick action by supervisory authority to salvage them before they collapse.

Given the important role that banks play in any economy, it is crucial to understand the determinants that influence their predictability of viability and survival. Instances of bank failure thus raise important concerns to both local and foreign investors in any country. According to Waciira (1999), the apparent variability of collapse of companies with time has real implications for the business community, especially the banking sector. The recent failures in banking industry have raised great concern and have forced banks to put more emphasis on determining the variables that cause the bank failures.

Kenya has suffered major bank failures and has led to erosion of confidence in Kenya's banking sector and bank failures will culminate into huge losses in non-monetary costs which accompany bank failures and restructuring of banks in terms of business folding ups, creation of unemployment and general instability in the financial system have not been fully quantified but no doubt a financial sector crisis has far reaching effects to the general economic growth by the country (Obiero, 2002).

There have been calls for a more productive approach to forestalling bank failures. According to the market intelligence 2000 Banking Survey, “The Central Bank of Kenya, besides regulating the banking sector is charged with the responsibility of supervising banks and raising the red flag at the first sight of danger. The banks supervision department of the Central Bank has not discharged this mandate effectively in the past, if the perennial closures are anything to go by. Infact some quarters have viewed the departments as more of a liquidator than a regulator (Oloo et al 2000).

The research focused on the determinants that led to collapse of banking institutions in Kenya. On the whole, these are attributed to or related to weak corporate governance practices, poor risk management strategies, lack of internal controls, weaknesses in regulatory and supervisory systems, insider lending and conflict of interest among others. Thus the researcher used a ratio analysis to investigate possible causes that maybe attributed to the collapse of commercial banks.

Bett (1992) conducted a study on bank’s failure predictive model and found them good predictor of bank failures. Katherenje (2000), on his study focused on performance measures internal to commercial banks and Obiero (2002), looked at The Banking Sector Regulatory Framework in Kenya; its adequacy in reducing bank failures. The review of earlier researchers shows that the studies were not carried to survey the current variables that influenced the causes of commercial bank failure using a ratio analysis.

In contrast to previous work, this study viewed both the costs and benefits of capital adequacy requirements, without, however, aspiring to provide a full-pledged cost benefit analysis. On the other side the study addresses the significance of capital adequacy, asset quality and earnings as predictors of bank failure. It is of interest that the research evaluated the relationship of the capital adequacy, asset quality and earnings ratios as predictors of bank failures or other variables can explain the failure of banks.

1.6 Objectives of the Study

To analyse the variables that determine commercial bank failures in Kenya.

1.8 Hypothesis

To investigate this, the study will be guided by the following hypothesis:-

H₀: Bank failure has a significant relationship with; capital adequacy, asset quality, returns on assets, total assets, total equity, total loans and earnings after tax.

H₁: Bank failure has no significant relationship with; capital adequacy, asset quality, returns on assets, total assets, total equity, total loans and earnings after tax.

1.9 Justification of the Study

The study covered a unique area in banking practice. Many Banking papers revolve around customer care, marketing and strategic issues and very little touch on the matters concerning Governance. The few studies that have been done on Governance have either tackled Bank's performance separately or Central Bank of Kenya supervisory role but this study offered a new dimension on research done on Banking by discussing on the causes of commercial bank failures using a predictive variables with the assistance of predictive models.

1.10 Significance of the Study

The study is significant and important for at least six reasons. First, it helps fill the gap in addressing the problem of bank failures and show how adherence to financial integrity and discipline are paramount in the banking sector. The second reason is that it will enable commercial bank top management to demonstrate and develop good risk management strategies in funds management. The government being an interested party as a regulator through Central bank being the regulator charges with monitoring and ensuring stability in the financial sector.

Further, the study opens new insights on the predictors that enhance the cause of bank failure and the unique characteristics of a sound financial house that is stable within the financial sector. The study adds value to understanding the valuable knowledge of the banking industry. Finally academicians will find the study useful as it gives highlight on areas for further research and also contribute to new knowledge. The academicians being

charged with the responsibility to disseminate knowledge to various stakeholders and thus the study is useful.

1.11 Scope of the Study

The study focused on the operations of all commercial banks in Kenya for the period 1998-2005. The paper explores the overall management style used by banks and emphasised on the management of funds and operations of commercial banks.

1.12 Definition of Terms

The following are the definitions of some of the terms which will be used in this study.

1. The **Banking regulatory** framework refers to the relevant provisions of the: -
 - i) Banking Act Chapter 488 of Kenya laws
 - ii) Central Bank of Kenya Act chapter 491 of Kenya laws
 - iii) Prudential Regulations and banking circulars issued by the Central Bank of Kenya – which are referred to when, regulating the banking sector.
2. Interpretation of the Banking Act Chapter 488
 - i) A “**Bank**” means “a company which carries on, or propose to carry on, banking business in Kenya and includes the Co-operative Bank of Kenya Limited but does not include the Central Bank of Kenya.”
 - ii) A “**Financial Institution**” or “**Non-Bank Financial Institution**” means; “a company, other than a bank which carries on, or proposes to carry on, financial business and includes any other company which the Minister may, by notice in the gazette, declare to be a financial institution for the purpose of Banking Act.”
 - iii) An **institution** means;
“A bank or financial institution or a mortgage finance company.”

3. **Bank failure**

A bank which has failed to meet its obligations to its customers due to one reason or another and is placed under the Central Bank of Kenya’s statutory management or liquidation by the Deposit Protection Fund (DPF). Bank failure can also be attributed to the lack of sufficient liquidity, which subsequently leads to insolvency.

4. **Banking sector**

For purposes of this study this term will be referring to commercial banks.

5. **Bank soundness**

A sound banking system may be defined as one in which most banks are solvent and are likely to remain so. Solvency is reflected in the positive net worth of a bank as measured by the difference between the assets and liabilities (excluding capital reserves) in its balance sheet. In other words, the distance between soundness and insolvency can be gauged in terms of capitalisation, since net worth is equivalent to capital plus reserves. The likelihood of remaining solvent will depend on inter alia Bank being profitable, well managed and sufficiently well capitalized to withstand adverse events.

6. **Financial crisis**

The terms financial crisis and banking crisis can be used interchangeably in countries where the banking system dominates financial intermediation. It is further defined as situation in which significant grouping financial institutions have liabilities exceeding the market value of their assets, leading to runs and other portfolio shifts, collapse of financial firms and government intervention.

7. **Gross Domestic Product (GDP)**

Refers to output from economic activities in the Kenyan Economy. Growth in Real Growth Domestic Product will be used in the study.

1.13 Organization of the Paper

The rest of the paper will be organized as follows. In chapter two, we present a review of relevant literature while in chapter three we present the study methodology. In chapter four we analyse data and empirical results while in chapter five we present key research finding and conclusions.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Banks in Kenya are established under the Banking Act Cap 488 and regulated under the provisions of the Central Bank of Kenya Act Cap 491 of the Laws of Kenya. The Banking Act Part II Sec 4(1) & (2) gives the Minister of Finance powers to licence any institution intending to carry out banking business in Kenya on recommendations from the Central Bank Of Kenya exclusive inspection powers on any licensed banking institutions to ensure that they conform with the prudential guidelines issued by the Central Bank of Kenya from the time to time. This is in line with one of the Principal objectives of the Bank as outlined in the Central Bank of Kenya Act of 1996 Part II Sec 4(2) which states “The Bank shall foster liquidity, solvency and proper functioning of a stable market based financial system”. This objective can be largely achieved by ensuring that the regulatory and supervisory frameworks are put in place for the entire financial system.

The Banking industry is so prone to crisis due to its unique characteristics, hence a special policy interest in preventing and dealing with such crisis (Gavin and Houseman, 1998). The proliferation of large scale banking crisis has therefore raised widespread concern, a banking crisis disrupts flow of credit to households and enterprises reducing investment and consumption and possibly forcing viable firms into collapse. Banking crisis may also jeopardise the functioning of payment systems and by undermining confidence in domestic financial institutions, they may cause decline in domestic savings and/or a large scale capital outflow.

Banks play a very crucial role in the national economy in the form of Gross Domestic Product (GDP) and in turn enhance the standard of living in terms of employment opportunities through the promotion of entrepreneurial activities which are enhanced by credit facilities offered by banks. Despite this crucial role in the national economy and the life of every citizen, Central Bank reports showed that 30 commercial banks failed

between 1983 and 1997. According to The Post, (1998) this was illustrated in the form of financial mismanagement and deep-rooted corruption in the banking sector.

Finally, a systemic crisis may force sound banks to close their doors (Vittas, 1997). In most countries, policy makers have responded to banking crisis with various interventions ranging from loose monetary policy to the bail out of insolvent financial institutions with public funds, as in the case of state owned banks in Kenya (IMF 1997). Even when they are carefully designed, rescue operations have several drawbacks which include; High budgetary costs, Possibility of inefficient banks remaining in business, Creating expectations of future bail outs thereby reducing incentives for adequate crisis management by banks, Weakening managerial incentives as is often the case, thus forcing healthy banks to bear the losses of ailing institutions, Inflammatory loose monetary policy to prevent banking sector losses and in countries with an exchange rate commitment and possibility of trigger of a speculative attack against the currency Kunt and Detragiache, (1997).

According to Africa Magazine (1998), banks in Kenya collapse when there is a change of government. The first bank crashed in 1983 and the other crashes followed, making such banks financially powerless.

2.2 Importance of Bank Regulation

The questions why are banks so closely regulated? Many types of answers from lay man will come filling in the gaps. Meanwhile a number of reasons for this heavy burden of government supervision have been there over the years. The following are the reasons for this strict regulation: -

First, according to (Rose, 1991), banks are the leading depositories of the public's savings which constitute the savings of individuals, families, companies, parastatals, pension societies. These savers lack the in-depth information to accurately evaluate the riskiness of banks. For this reason, regulatory agencies like Central Bank comes in to frequently assess the financial condition of banks in order to protect the public against loss which most of the time comes from theft, fraud, corruption, and financial

mismanagement. Secondly, taking into account for instance, long-term savings for retirement in pension programs and individual retirement accounts, banks need heavy regulation in order to safeguard against such losses. According to Kareken, (1990) this regulation acts are done by providing deposit insurance through periodic examination of bank policies and practices so as to promote sound management.

Thirdly, banks are so closely watched because of the power in the form of readily spendable deposits by making loans and investments opportunities to the companies as well as individuals (Heller, 1989). This is because; the amount of money in an economy is closely co-related with the national economic conditions in the area of job-creation and the presence or absence of inflation. Therefore since banks have the ability to create money which thus impacts on the vitality of the economy, there is an acute need for government regulations through Central Banks policies.

Fourthly, Banks are regulated because they give loans to individuals and institutions which support consumption and investment spending (Horvitz, 1983). At this level, regulation comes in to avoid discrimination in the granting of credit. This is especially very crucial if access to credit is denied because of age, sex, race, national origin. Moreover this discrimination in credit grant would constitute a significant obstacle to personal well-being and improved standard of living. Therefore, Central Bank comes in to pass anti discriminatory laws and to promote more competition among banks (Bernette, 1984).

Finally banks provide financial support to governments to conduct their affairs in form of bank credits and taxation (Crockett, 1988). This support helps in the formulation of economic policy and dispensing government payments.

Having pointed out key reasons why banks are heavily regulated, the research will give some focus on bank management.

2.3 Bank failure literature

Studies attempting to empirically identify the causes of bank failures in developing countries have focussed mainly on macroeconomic factors (Rojas-Suarez 1998, Bongini, Claessens and Feri, 2000). It is common for banking crises to occur in periods of macroeconomic downturn (Benston and Kaufman, 1995; Gavin and Hausmann, 1996; Gonzalez-Hermosillo et al., 1997; Demirguc-Kunt and Detragiache, 1998; Hardy and Pazarbasoiglu, 1998; Brownbridge and Kirkpatrick, 1999). Some observers find that credit expansion is strongly associated with banking crises (Gavin and Hausmann, 1996; Hardy and Pazarbasoiglu, 1998; Kaminsky and Reinhart, 1999; Demirguc-Kunt and Detragiache, 1999). In contrast, other observers note that the link between lending booms and banking crises is weak, particularly outside Latin America (Caprio and Klingebiel, 1996; Hanohan, 1997; Gourinchas, Valdes and Landerretche, 2001). While macroeconomic factors are clearly important, bank failures are more likely to occur when banks are both weak and face macroeconomic shocks (IMF, 2000). Bank failure, then, would seem to result from the vulnerability of individual banks, macroeconomic shocks expose the inherent weaknesses of such banks.

The literature on quantitative bank failure studies separates bank-specific effects from common industry or macroeconomic effects. In general, the bank-specific factors to which bank failures have been attributed are the 'CAMELS' variables. Capital adequacy measures have been found to be significant predictors in a number of studies (Martin 1977; Lane, Looney and Wansley, 1986; Thomson, 1992; Bongini et al., 2000; Estrella, Park and Peristiani 2000). Bongini et al. (2000) found that the ratio of loan loss reserves to capital and the rate of growth of loans were good predictors of distress and closure in the East Asian crises. Sheng (1996) cited connected party lending between banks and their shareholder-managers as one of the main factors contributing to the lending problems in Argentina and Chile. The importance of the behaviour and capability of management to the survival of banks has also been emphasised (Meyer and Pifer, 1970; Wheelock and Wilson, 2000). In addition, the source of a bank's earnings (Espahbodi, 1991; Wheelock and Wilson, 2000) and also the level (Martin, 1977; Thomson, 1992;

Bongini et al., 2000) have been shown to be significantly greater when a bank is illiquid (Lane et al., 1986; Bell et al., 1990).

In addition to the CAMEL components, other non-financial bank specific factors such as size (Boyd and Gertler, 1993 and Bongini et al., 2000 contrast with Thomson, 1992) and the extent of foreign ownership (Goldstein and Turner, 1996) have been suggested to explain bank failures. However, no consensus has merged as to which indicators are most relevant for assessing bank soundness and stability, or for building effective 'early warning' systems. The statistical significance of individual factors, as well as variables, varies across studies and the results have produced conflicting results. Moreover, an understanding of the interplay between these factors and banking crises in developing countries is still scant. As most of these studies have been conducted in industrialised countries, the efficacy of the factors in developing countries remains unproven.

2.4 CASES OF BANK FAILURES

2.4.1 The Argentine Banking Crisis

In March 1980, one of the largest private banks in Argentine- Banco de Intercambio Regional failed. Few days later the Central Bank had to intervene to rescue three other banks, two of which were liquidated. Thereafter began serious crisis of the Argentine financial system which ended up in the liquidation of 71 financial institutions over the next two years. (The World Bank, 1984). This situation arose during the Argentine financial crisis as firms defaulted on their bank loans. These defaults came from enterprises failures and also due to lack of strong supervision by the Central Bank.

Bank collapse in Argentine had had strong negative impact on the national economy. The costs to the economy were as follow:

There were huge losses of lower money balances. The economy experienced temporal disruptions of the credits and payment system, deterioration and unemployment of labour, misallocation of credit and ultimately capital out flows. (The World Bank, 1984). In this case many companies loss their deposits which constitute their capital base and thereafter they had to close down having led to a very high level of unemployment in the country. Banks failure entailed heavy losses to depositors and holders of financial assets.

On the other hand during this period Central Bank had to intervene by providing assistance to distress banks and this led to excessive monetary expansion hence increasing money supply in the economy leading finally to high inflation and high interest rate in the country. (Feldman, 1983)

The consequences had had negative impact on the Argentine economy which suffered for a long period before recovery policy put things in order.

2.4.2 The Chilean Banking Crisis

The banking crisis in the country took place 1982-84 and its estimated cost ranges from 30- 40 percent of GDP. The causes of this crisis were: erroneous macroeconomic policies and lack of strong regulation. The macroeconomic policies led to fast credit expansion and large capital inflows into recent regulated bank whose supervision was very weak. Hence banks increased their capital base using money lent to them by their owners and this type of lending has played very important role in most banking crisis in Chile. Another problem was that deposits were not insured according to the law. The lack of transparency about banks' financial conditions played a considerable role on depositors' lack of knowledge regarding the risk that the banks were taking. This has therefore increased the risks the banks were taking in credit and investment. For instance some banks got credit from abroad to finance credit to the non-tradable sector, like real estate. (Marshall, 1998). The economic impact of bank failure on the Chilean economy was very disastrous in various ways: the country GDP had dropped by 14 percent in 1982 and unemployment increased from 11 percent in 1981 to more than 22 percent in 1982. Inflation grew from 10 percent in 1982 to 23 percent in 1983. (Balino, 1991).

2.4.3 Bank Failure in the United States

Banking problems occurred in the United States in 1980 through 1996. Many factors were responsible for these problems but most acute one was the bank regulation. In particular there were overly restrictive laws and regulations which contributed to thousands of depository institutions which were exposed to substantial interest rate risk in the late 1970s and early 1980s. Subsequently this cosy period was followed in mid – 1980s by laxity in the regulation and supervision enabling many inadequate financial

institutions growing rapidly and which were engaged in high-risk activities. (Barth & James, 1991).

2.4.4 The Banking Crisis in Japan

In the 1970s Japan had taken steps in the liberalisation of financial institutions. Despite considerable progress towards these liberalised financial institutions, the transition did not progress smoothly and it was marked in many cases by severe financial disruptions and banking problems. (Economy, 1997). What started as a smooth transition changed into various crises: sharp increase in asset prices, monetary growth, and subsequent fall in asset prices in the early 1990s. Financial institutions were left with a massive non – performing loan problem estimated at some US\$ 500 billion. This therefore has led to the crash of many financial institutions in Japan. (Cargil & al, 1997).

2.4.5 Bank Failure in Scandinavia

Between 1980 and 1990 each of the Scandinavian countries (Denmark, Norway, Sweden, and Finland) faced serious banking crisis that have got strong impact on their respective economy. In the four countries, all the major banks got into serious difficulties as a result of heavy loan losses. In most cases corrective actions were taken; either through bank merger with other banks or enabling them to continue as independent banks through financial supports from insurance funds or governments. (Moller & Nielson, 1995).

2.4.6 Spain Crisis

As with other banking crisis, Spain (which peaked in 1982 and 1983 affecting 52 of the countries 110 banks). Banking problem resulted from a combination of factors including the oil shock of 1973 – 1974. Inappropriate policy responses to these shocks, and the rapid liberalization and expansion of the banking sector without adequate regulations and solutions. The initial response to the growing crisis was simple deposit insurance scheme introduced in November, 1977 (Larrain and Montes – Negret 1986).

The bank of Spain began to tighten supervision of control during this period. It devoted more attention to loan and investment analysis and to asset quality. There were important improvements in information disclosure as well. Substantial improvements in the legal

and accounting frameworks and in bank regulations and supervision have since followed e.g. Law 13 (1985) – reduced the amount of compulsory investment by banks and additional issues of capital adequacy and financial disclosure.

2.4.7 Ghana experience

In 1988 Ghana's formal banking system had about 11 commercial banks and 112 rural banks under the supervision of Bank of Ghana. Their first phase of financial sector restructuring program began in 1988 and ended in 1991 costing an estimated US\$300 million or 6% of GDP (World Bank 1989), shortcomings in banking regulation and supervisory capacity contributed to the build up in bank losses. To revamp the financial sector the regulatory and supervisory framework was strengthened to enable supervision to monitor bank performance and detect problems. On-site inspection capacities were also strengthened (Tannar 1990). The above literature review on bank failures across the world shows that the collapse of bank is common and frequent scenario around the globe. With careful observation on the cause of these crashes, the common denominator of this causes is non-performing loan followed by laxity in regulation, other factors remain minor causes to these falls. Having said about various falls, the next literature review will focus on the main causes of bank failures.

2.5 DETERMINANTS OF BANK FAILURES

In the next paragraphs, the researcher will show the reasons why banks collapse, giving more attention to non-performing loans. Therefore in this paragraph, bank management will focus on loan management and financial management and other causes of bank failures will be highlighted thereafter.

2.5.1 Loan Management

(Eyring, 1984) says in his journal of Commercial Bank lending that the loan portfolio of any bank is strongly influenced by regulation, the reason being that the quality of bank's loan has more to do with risk and safety in banking system than any other aspect of the banking business. Because of this risky nature of loans on the bank's performances, some loans are restricted or even prohibited by law. For instance, Section 10 of the Kenya Banking Act says "Banks are not allowed to lend any individual or group of

companies more than 25% of its paid up Capital and Reserves” (Central Bank of Kenya; Directory of Commercial Banks, 1994). Therefore, the quality of a bank’s loan portfolio and the soundness of its lending policies are very crucial and constitute the areas where bank examiners look at closely when examining a bank, thus this shows that lending management in banks is very essential for its growth as well as its fall.

One of the most important methods a bank can use to make sure its loans meet regulatory standards and are profitable is to establish a written clear policy and which will give the loan officers and the bank’s management specific guidelines in making decisions on individuals as well as corporate loans. This will thus increase the chances that the bank will achieve its goals (Grimming, 1982). These policy guidelines should include credit analysis which involves the borrower credit worthiness.

In this case according to (Rose, 1991) credit worthiness involves a detailed study of six aspects of the loan application: character, capacity, capital, collateral, conditions and control. Therefore a good loan must satisfy all the above aspects on the lender’s point of view. Loan management is the main source of financial theft in banks. Many borrowers in collaboration with bank management are involved in non-performing loans leading to financial theft of banks which end up collapsing. (The Post, 1998) a Kenya News Magazine reported that the financial problems faced by First National Finance Bank was the result of insider borrowing, abuse of the existing banking rules and many years of bad management that characterise Kenya’s banking industry.

2.5.2 Corporate Governance Practices in Banking Sector

The way the companies are being managed and controlled in Kenya has been scrutinized due to the corruption cases in the country, and consequently the subject of corporate governance is the top of the agenda. Focusing on corporate governance is particularly crucial in financial services offered by banks. This is because of the collapsed banks cases in Kenya. For example the case of Euro bank, Trust and Daima Bank just but to mention a few.

According to the Financial Stability (2000), the main factors that support the stability of any country's financial system include good corporate governance, strong prudential regulation and supervision, an appropriate savings deposit protection system and sound disclosure regimes. Corporate governance has been defined over the years differently by various scholars, however they all have pointed to the same end. For example, the Financial Times (1997) defines it as the relationship of the enterprise to shareholders. The Financial Stability (2001) gives this definition: Corporate Governance means the sum of the processes, structures and information used for directing and overseeing the management of an organization.

Arun and Turner (2002) joined the above scholars in a broader way. They argue that the crucial importance of banking in the national economy requires not only a broader view of corporate governance, but also government intervention in order to control the behaviour of bank management. Hence they adopted the following definition.

“Corporate governance is the manner in which systems, procedures, processes and practices of a bank are managed so as to allow positive relationships and the exercise of power in the management of assets and resources with an aim of advancing shareholders' value and shareholders' satisfaction together with improved accountability, resource use, and transparent administration”.(Arun and Turner, 2002)

Hettes, (2002) says that banking supervision cannot function properly if there is no correct corporate governance, experiences have shown the need for an appropriate level of responsibility, control and balance of competences. Hettes goes further to say that; adopting correct corporate governance simplifies even the work of banking supervision and therefore contribute to good corporation between the management of a bank and the banking supervision authority.

The researcher is going to end this subsection on corporate governance in banking sector by citing what Donald Brash, the governor of the Reserve Bank of New Zealand said when addressing the Conference for Commonwealth Central Banks on Corporate Governance for the Banking Sector in London June 2001:“...Improving governance is an

important way to promote financial stability. The effectiveness of bank's internal governance arrangements has very substantial effect on the ability of a bank to identify, monitor and control its risks. Although banking crisis are caused by many factors, some of which are beyond the control of bank management, almost every bank failure is at least partially the result of poor risk management within the bank itself. And poor risk management is ultimately a failure of internal governance. Although banking supervision and the regulation of bank's risk positions can go some way towards countering the effects of poor governance, supervision by some external official agent is not a substitute for sound corporate governance practices.

Ultimately, banking system risks are not most likely to be reduced to acceptable levels by fostering sound risk management practices within individual banks. Instilling sound corporate governance practices within banks is a crucial element of achieving this” (Brash, 2001). There is strong correlation between internal governance and risk management. The poorer the bank's corporate governance the riskier the bank. Strong supervision cannot counteract the effects of the corporate governance on the banking system. This means according to Brash that if the regulatory and supervision systems are for instance taken off and there is strong corporate governance within that bank, the result will be better than having a regulatory system with weak corporate governance.

Therefore, the concept of good governance in banking industry empirically implies total quality management which includes six performance areas (Khatoon, 2000). These performance areas include capital adequacy, assets quality, management, earnings, liquidity, and sensitivity risk. Khatoon argues that the degree of adherence to these parameters determines the level of avoidance of a bank failure. Having expanded quite a lot on the importance of corporate governance practices in order to save banks from crashing, the researcher will therefore go further by showing what has been said about bank crisis on other parts of the globe.

2.5.3 Macroeconomic Circumstances

Macroeconomic instability is sometimes blamed on the banking instability. This takes place with the combination of collapse of asset prices, or sharp increase in the interest rates or fall in the exchange rate. These factors mostly are interrelated. Therefore, bank management and bank supervisors must ensure that banks are not vulnerable to such factors (Latter, 1997). The problems of poor loan quality faced by the local banks were compounded by macroeconomic instability. Periods of high and very volatile inflation occurred in Kenya during 1990s is 46%, nominal lending rates were also high, with real rates fluctuating between positive and negative levels, often in an unpredictable manner, because of the volatility of Inflation (Collier, 1993, pp 19-20). Macroeconomic instability would have had two important consequences for the loan quality of the local banks.

First, high inflation increases the volatility of business profits because of its unpredictability, and because it normally entails a high degree of variability in the rates of increase of the prices of the particular goods and services which make up the overall price index. The probability that firms will make losses rises, as does the probability that they will earn windfall profits (Harvey and Jenkins, 1994). This intensifies both adverse selection and adverse incentives for the borrowers to take risks, and thus the probabilities of loan default. The second consequence of high inflation is that it makes loan appraisal more difficult for the bank, because the viability of potential borrowers depends upon unpredictable developments in the overall rate of inflation, its individual components, exchange rates and interest rates. Moreover, asset prices are also likely to be highly volatile under such conditions. Hence, the future real value of loan security is also very uncertain.

2.5.4 Insider Lending

The single biggest contributor to the bad loans of many of the failed local banks was insider lending. In at least half of the bank failures referred to above, insider loans accounted for a substantial proportion of the bad debts. Most of the larger local banks failures in Kenya, such as the Continental Bank, Trade Bank and Pan African Bank, involved extensive insider lending , often to politicians. The high incidence of insider

lending among failed banks suggests that problems of moral hazard were especially acute in these banks. (Central Bank of Kenya 1995, pp.9).

Several factors contributed to this:

First, politicians were involved as shareholders and directors of some of the local banks. Political connections were used to obtain public-sector deposits: many of the failed banks in Kenya relied heavily on wholesale deposits from a small number of Parastatals. Because of political pressure, the parastatals which made these deposits are unlikely to have made a purely commercial judgement as to the safety of their deposits. Political connections also facilitated access to bank licences and were used in some cases to pressure bank Regulator not to take action against banks when violations of the banking laws were discovered. All these factors reduced the constraints on imprudent management. (Central Bank of Kenya 1995, pp.9)

Second, most of the failed banks were undercapitalized, in part because minimum capital requirements in force when they had been set up were very low. Owners had little of their funds at risk should their bank fail, which created a large asymmetry in the potential risks and rewards of insider lending. (Central Bank of Kenya 1995, pp.9)

The third factor contributing to insider lending was the excessive concentration of ownership. In many of the failed banks, the majority of shares were held by one man or one family, while managers lacked sufficient independence from interference by owners in operational decisions. A more diversified ownership structure and a more independent management might have been expected to impose greater constraints on insider lending, because at least some of the directors would have stood to lose more than they gained from insider lending, while managers would not have wanted to risk their reputations and careers. (Central Bank of Kenya 1995, pp.9)

2.5.5 Lending to high-risk borrowers

The second major factor contributing to bank failure was lending, at high interest rates, to borrowers in high-risk segments of the credit market. This involved elements of moral hazard on the part of both the banks and their borrowers and the adverse selection of the borrowers. It was in part motivated by the cost of mobilizing funds. Because they were perceived by depositors as being less safe than the established banks, local banks had to offer depositors higher deposit rates. Some of the local banks relied heavily on high-cost interbank borrowings from other banks and financial institutions, on which real interest rates of over 20% were not uncommon. (Mamman and Oluyemi, 1994).

The high cost of funds meant that the local banks had to generate high earnings from their assets; for example, by charging high lending rates, with consequences for the quality of their loan portfolios. The local banks almost inevitably suffered from the adverse selection of their borrowers, many of who had been rejected by the foreign banks (or would have been had they applied for a loan) because they did not meet the strict creditworthiness criteria demanded by them. Because they had to charge higher lending rates to compensate for the higher costs of funds, it was very difficult for the local banks to compete with the foreign banks for the “prime” borrowers (i.e. the most creditworthy borrowers). Managers and directors of these banks often lacked the necessary expertise and experience (Mamman and Oluyemi, 1994). The problem of most of the failed banks was that they did not have adequate expertise to screen and monitor their borrowers, and therefore distinguish between good and bad risks.

2.5.6 Liquidity support and prudential Regulation

The willingness of the regulatory authorities to support distressed banks with loans, rather than close them down, was probably an important contributor to moral hazard. The extent of imprudent management in the failed banks indicates that there were serious deficiencies in bank regulation and supervision. When many of the banks were set up in the 1980s or early 1990s, banking legislation was outdated and Central Bank supervision departments were seriously understaffed. In Kenya and Nigeria many banks avoided being inspected for long periods because the rapid expansion of banks in the second half

of the 1980s overwhelmed supervisory capacities (Kariuki, 1993, pp 300-9). Furthermore; political pressure was brought to bear on Central Banks to exercise regulatory forbearance and often lacked sufficient independence from the government to refuse liquidity support to politically connected banks and to strictly enforce the banking laws.

2.57 Microeconomic Policies

This heading will cover all those structural and supervisory parameters which are under the government's direct control or influence. The government through the regulator will influence the levels of controls on how the economy is managed in the market especially on the issues of taxation matters and the general economic management.

2.5.8 Poor Bank Supervision and Regulation

It is of common perception that banks fail due to supervisory failure. This may not be 100 percent true; but the fact of the matter is that bank failure may fairly be attributed to supervisory failure to some percentage only. (Handbooks in Central Banking, 1997).

2.5.9 Inadequate Infrastructures in Accounting and Law

This may be a cause of banking failure. Shortcomings in accounting or auditing may even disguise, or delay the realisation of illiquidity or insolvency problems. In the same way for instance inhibit the application of property rights or the pledging and realisation of collateral in support of bank loans (Centre for Central Banking Studies, Bank of England, 1997)

2.5.10 Liberalisation/ Deregulation

Deregulation in the financial sector has in most cases encouraged crash behaviour, leading to many problems. (Latter, 1997). This is not an argument against deregulation but a wake up call for the bank management and regulators to be aware of the potential consequences and particularly to let them be alert.

2.5.11 Government Interference

There are some instances, government interferes in banking business by recommending particular customer for loans possibly at special interest rates or to maintain or extend an

economic branch networks in a location in the country. These interferences have precipitated many banks liquidation or solvency. (Economic Development Institute of the World Bank, 1988).

2.5.12 Banking Strategies and Operations

In many cases, banks failure has been brought by the shortcomings in their own strategy.

The following are the sliding ground banks may venture on:

- ❖ Rush to expand has been one of the most common causes of failure.
- ❖ Failure to inculcate new management style to bank's staff, to utilise information technology effectively. All this may lead to bank failure due to permanent competition from other banks (Latter, 1997).
- ❖ Poor credit assessment: failure to conduct an accurate assessment of credit risk and to price accordingly is common cause of bank's problems.
- ❖ Interest rate or exchange rate exposures may result in losses, and may be limited by internal or supervisory controls (Handbooks in Central Banking, 1997).
- ❖ Concentration of lending, and connected lending: this means that banks have long standing links to, particular customers or an economic sector in mind allowing lending to the specified sectors or customers. This concentration has been shown historically to be sources of banking crisis.
- ❖ *Unauthorised trading or position taking, associated with a failure of internal controls* appeared to have been an increasingly worrying source of bank losses or ultimate failure (Latter, 1997).
- ❖ Over-reliance on IT systems, without adequate back-up, sufficient verification, proper audit arrangements or management understanding enough about the systems.

2.5.13 Fraud and Corruption

Some causes cited above may amount to fraud by some particular dealers or traders depending on how legalistic one may be. There have been rampant frauds and corrupt dealing in many banks. Employees and management in collaboration with outsiders may be susceptible to corruption or capable of fraud on a bank especially with the present high

computer technology, example of money laundering through internet. This therefore leads to bank crashes (Latter, 1997).

2.5.14 Political Patronage

Many banks failure are due to mismanagement that occasioned the withdrawal of huge amounts of money by politicians with the connections at the State House and the office of the President. People in high level of political arena of the country will walk into the bank with chits signed by men in authority and withdraw money that would never be repaid. This tradition has enriched few individuals while the bank crashed, leaving depositors suffering. The political influences in most cases are prerequisite to the above causes especially in the developing countries (The Post, 1997).

2.6 Earnings

Profit/losses is the end result of the commercial banks after deducting operating expenses and operational losses from their income. Profitability is the performance of commercial banks income-generating activities (Komen, 2002; Mirghani, 2003). Profit/loss position is very crucial to any firm because it determines its growth rate and its survival. Every firm embarks on cost management strategies aimed at increasing profits. This cost management strategies omits the element of operational losses. The profitability of any commercial banks drives the earnings ratio which is a critical aspect in the survival of any bank since it will relate the net income to total assets

Earnings = Net Income after taxes/total assets

2.6.1 Determinants of Earnings of Commercial Banks

According to Saunders (2000), the level of operating costs, non-operating costs and macro-economic variables, taxes determines the earnings of the commercial banks. Operating costs and macro-economic variables are areas where commercial banks have laid more emphasis (Yussuf, 2005). The efficiency of the commercial banks contributes a lot to increased income generation, collection and increased efficiency results to increased returns as the operating loss element is reduced. The income variables of a commercial bank include Interest income, investment income (dividends, rent) and other

miscellaneous incomes whereas the operating costs of a commercial bank include interest expense, staff salaries, loan loss provisions, operating lease rentals, bad and doubtful debts charges, director's emoluments and other operating expenses. He further argues that through increased efficiency the commercial banks can save on the loan loss provisions, operating lease rentals, bad and doubtful debts charges, and other operating expenses thus increased incomes.

2.7 Determinant model of predicting failure of commercial bank

In choosing the hazard model, we attempt to account for capital adequacy, asset quality and earnings are used to predict the bank failure or disappearance of a commercial bank. We analyse the disappearance of banks using proportional hazards models with time varying covariates, which are estimated by maximising the partial likelihood function. The approach is standard in most applied work (e.g. see Meyer 1990). In modelling the failure hazard, acquired banks are treated as censored in modelling the failure, banks that failed are treated as censored at the failure date. Specifically, we define the following variables:

1. Capital adequacy = total equity/total assets
2. Asset Quality = total assets/total assets
3. Earnings = Net income after taxes/ total assets

Partial selection of CAMEL'S variables in predicting bank's failure, the study assumed that bank failure is a linear function of capital adequacy, asset quality and return on assets.

$$BF = CAPAD + AQ + ROA$$

Where

BF: Bank's Failure ratio

CAPAD: Capital Adequacy

AQ: Asset Quality

ROA: Return on Asset

Since CAPAD, AQ and ROA are also affected by equity, total assets, total loans and earnings after tax.

$$BF = fn(CAPAD, AQ, ROA, E, TA, TL, EAT)$$

2.8 Conclusion

The issue of determining bank failure using a model on the failure of commercial banks has only recently been given prominence in the world banking industry.

Obiero (2002), did a study on the banking sector regulatory framework; its adequacy in reducing bank failures and found that of the 39 banks which failed during the period 1984 and 2000, 37.8 % collapsed mainly due to poor quality of lending. Though most banks pride in clear and sound lending policies, the reality is that they have been quite reckless in their lending activities.

Yussuf (2005), conducted a survey on operational risks management practices by commercial banks and found that operational risk departments exist only in the big banks. He noted that the most common categories of operational risks in Kenyan Commercial banks are human risks, which arise from failure of employees and conflict of interest or from other internal fraudulent behaviors; external risks, which arise from fraud or litigation by parties external to the firm and weaknesses in processes.

This study will bring new insight into banking literature by analysis the determinants of bank failure using the ratio analysis. The ratios in particular will include the three significant variables of capital adequacy, asset quality and earnings ratios as predictors of bank failure; this will help the management in curbing against failure early signals and symptom of bank failure before the eventual collapse of any commercial bank in banking sector.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the population of study, the basis of sampling, the data collection instruments as well as the data analysis techniques to be used to achieve the objectives of study. The study is a survey, which sought to assess the predictors of the causes of commercial bank failure in Kenya.

3.2 Research Design

The research intends to determine the causes of commercial bank failures using a ratio analysis. The ratio analysis model will be use the predictors of commercial bank failures to ascertain the influence of capital adequacy requirements, asset quality and the earnings ratios. These variables are critical in determining the eventual success and avoid the speed disappearance of commercial bank in the market.

3.3 Population of Study

The study population comprised 21 commercial banks representing 50% of all banks in Kenya for the period covering a period of five years 1998 to 2005. However, for banks that collapsed the study covered a period of five years before the eventual failure of that bank in the industry.

3.4 Data Collection

The study used the secondary data from financial statements from the selected commercial banks listed in the Nairobi Stock Exchange. Bank specific data for each reporting period (or calendar year) comes from two sources. The first one was the year-end balance sheet and the second is income statement reported to the Central Bank of Kenya. *The data on financial ratios covered entire population of listed commercial banks as well as other commercial banks listed by the Central Bank of Kenya and the Kenya Bankers Association.*

3.5 Data Analysis

Data analysis is defined as the whole process, which starts immediately, after data collection and end at point of interpretation of the processes results. Data was analysed using statistical package for social science (SPSS) and content analysis was used in summarising the findings.

Descriptive statistics, case analysis, comparative analysis and regression analysis was used in determining the determinants of bank failures. The ratios were plotted in graphs to determine the trend, while the cause was established by estimating a ration analysis for the period under study.

CHAPTER FOUR

4.0 DATA ANALYSIS

4.1 Analysis and Findings

In this chapter the research checked the outlook of banking industry in Kenya . It made observations on descriptive statistics which focused on the measure of central tendency, dispersions, skewness and trend. The study then checked the trends of the key ratios for each bank under the study. Finally inferential statistics was conducted by the application of both parametric and non parametric tests.

4.2 Kenya's Banking Industrial Outlook

Kenya's banking industry looked shaky but is currently stabilizing. Key ratios like capital adequacy, Asset Quality and return on assets did not have a consistent trend and this was worrying. It showed that banks' management did not have clear policies on how to maintain and grow these key ratios.

4.3 Descriptive Statistics

In descriptive statistics the study looked at measures of central tendency, dispersions, skewness and trends.

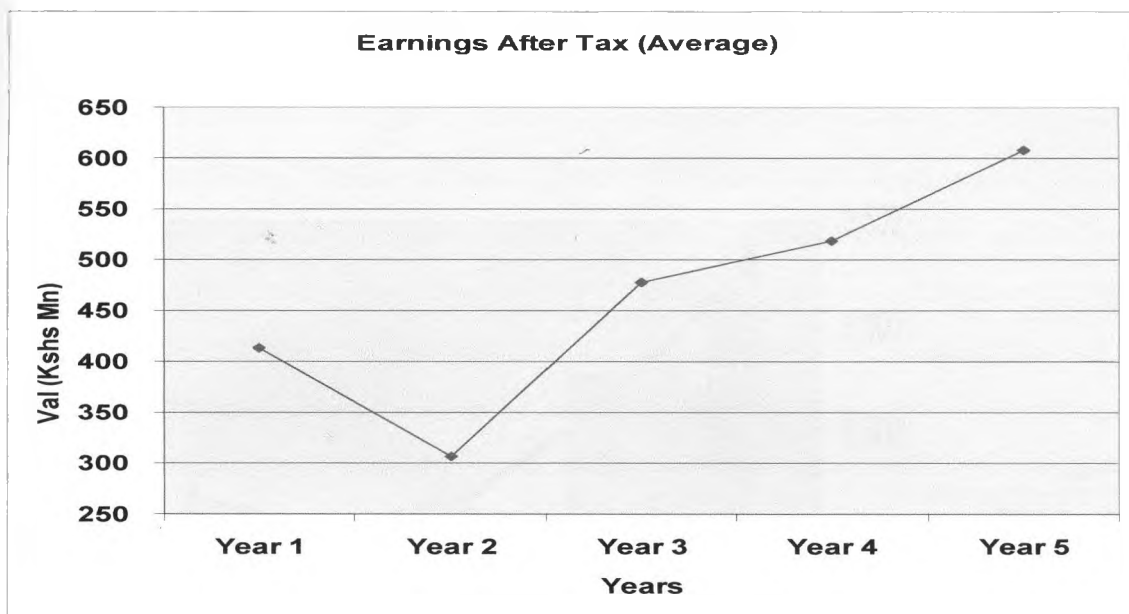
4.3.1 Earnings after Tax: Measures of Central Tendency, Dispersions, Skewness and Trend

Table 1: Earnings after tax

Description	Earnings After Tax
N	96
Mean	464.08
Median	151.17
Mode	20.00
Std. Deviation	829.44
Skewness	2.68

Table 1 shows that the mean earnings after tax for the banking industry was Kshs. 464 million with median being Kshs.150 million, a mode of Kshs.20 million and a standard deviation of Kshs.829 million. The data was positively and highly skewed at 2.64.

Graph1: Earnings after Tax: Trend in the Banking Industry in Kenya



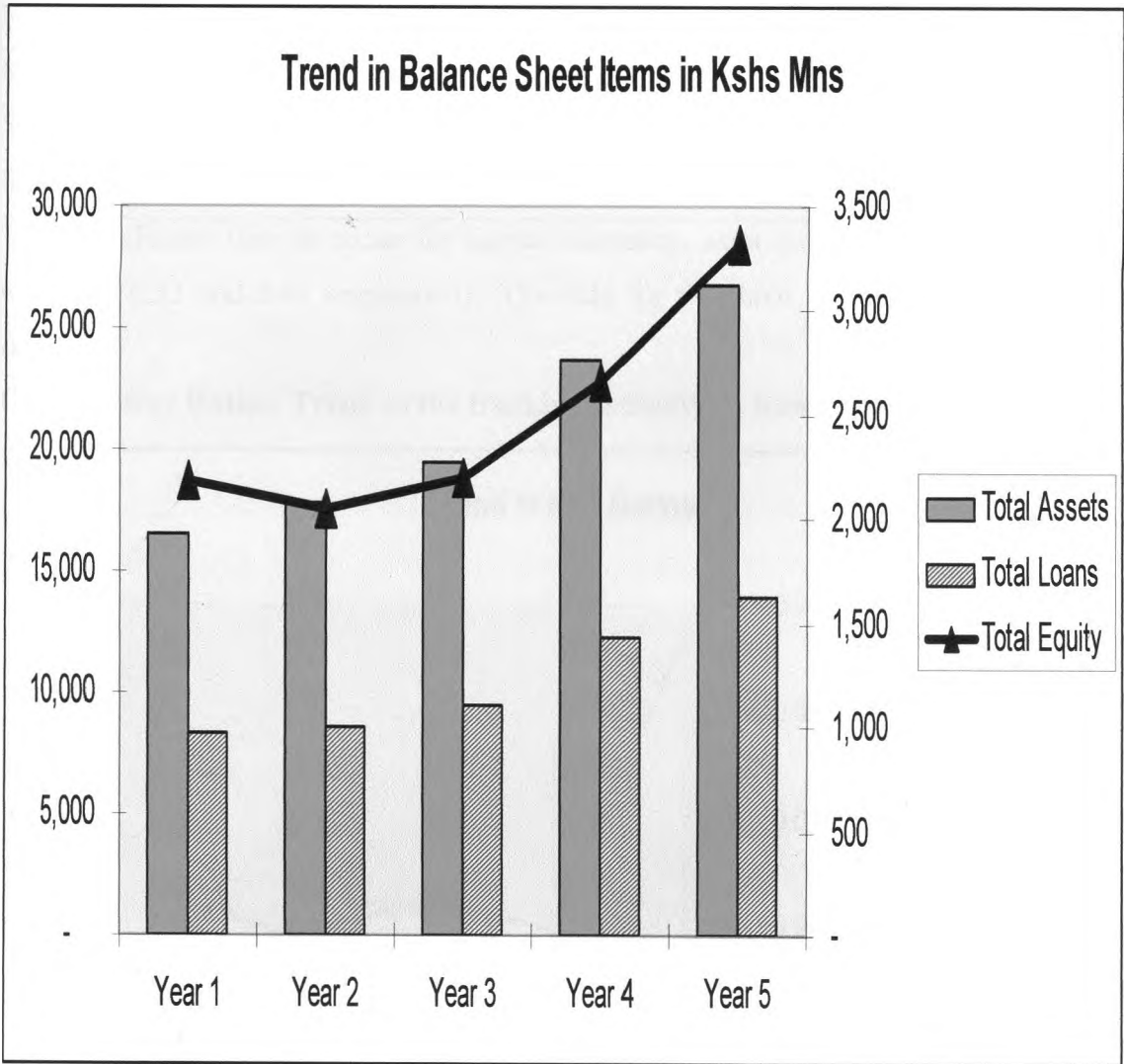
Graph 1 shows that average earnings was above 400 million in Year 1 and declined to 300 million before it rose steadily in Year3 to Year 5 to surpass the 600 million mark.

Table 2: Balance Sheet Items: Measures of Central Tendency and Dispersions

Description	Total Assets	Total Loans	Total Equity
N	105	105	105
Mean	20,905.09	10,507.74	2,483.78
Median	8,638.00	4,247.00	1,269.00
Mode	5,516.00	1,826.00	604.00
Std. Deviation	25,252.71	13,773.58	2,936.45
Skewness	1.70	2.17	1.99

Table 2 show that total assets, total loans and total equity had means of 20.9, 10.5 and 2.4 Billions Kenya Shillings respectively. The data for the three variables were positively and highly skewed.

Graph2: Balance Sheet Items: Trend in the Banking Industry in Kenya



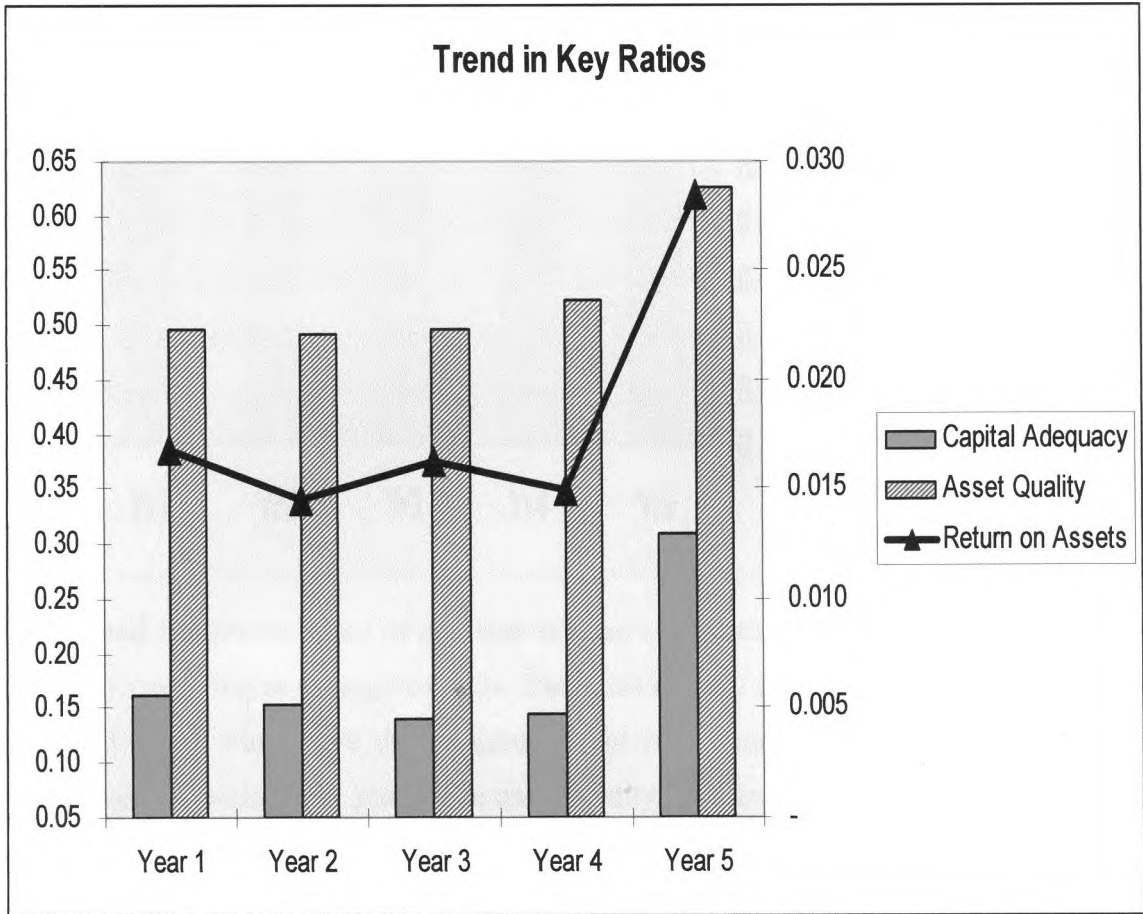
Graph 2 shows that total assets and total loans consistently rose to surpass 25 and 10 Billion Kenya shillings respectively. Total equity on the other hand declined in Year 2 to 2 Billion before rising steadily and surpassing 3 Billion Kenya shillings.

Table 3: Key Ratios: Measures of Central Tendency and Dispersions

Description	Capital adequacy	Asset quality	Return on assets
N	105	105	96
Mean	.18	.53	.02
Median	.13	.51	.01
Mode	.12	.45	.01
Std deviation	.39	.25	.02
Skewness	9.54	6.80	7.25

Table 3 indicates that the mean for capital adequacy, asset quality and return on assets was 0.18, 0.53 and 0.02 respectively. The data for the three variables were extremely skewed.

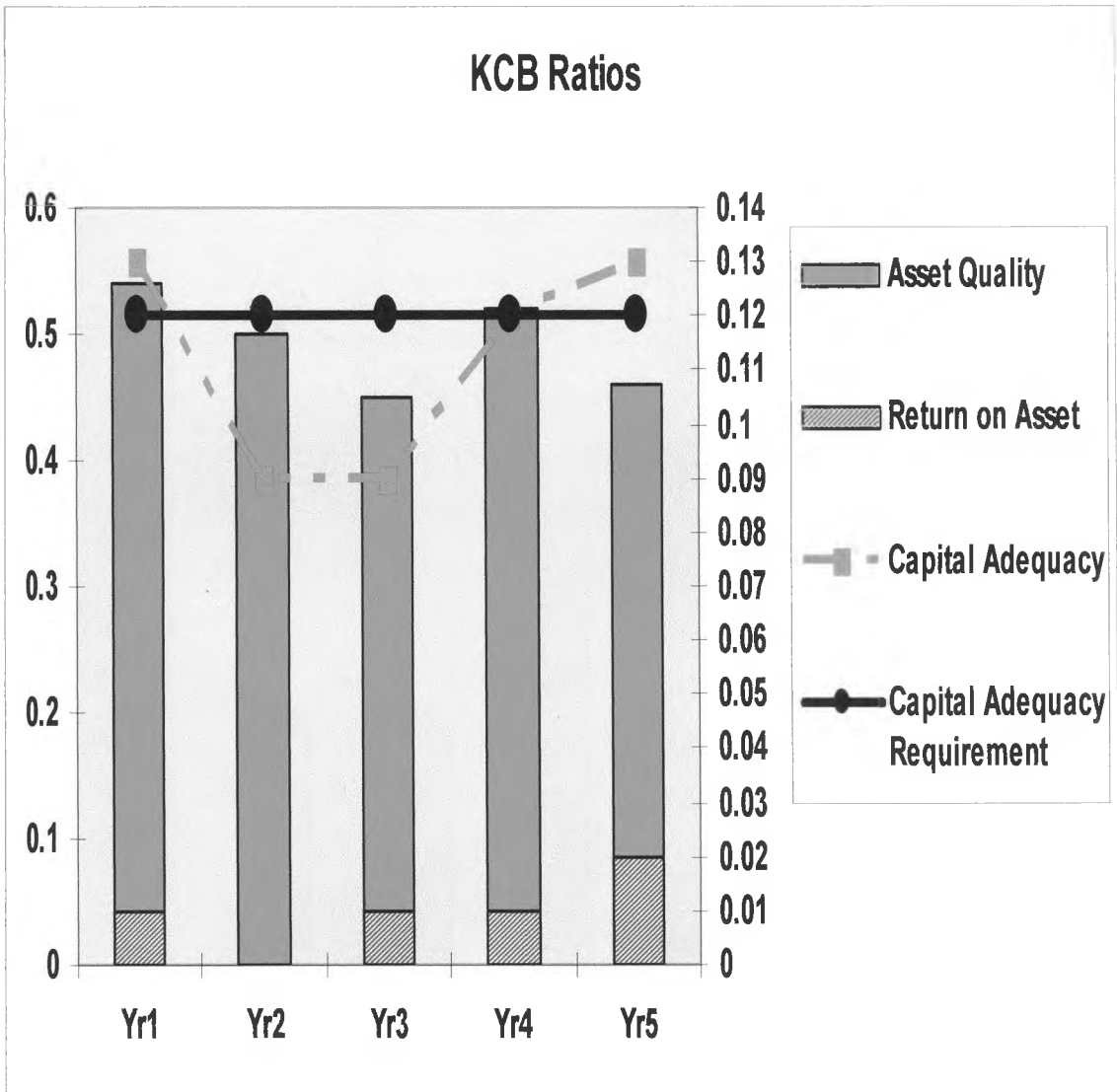
Graph 4: Key Ratios: Trend in the Banking Industry in Kenya



Graph 3 shows that asset quality from 0.49 to surpass 0.6 in Year 5 while return on asset and capital adequacy did not have a consistent pattern.

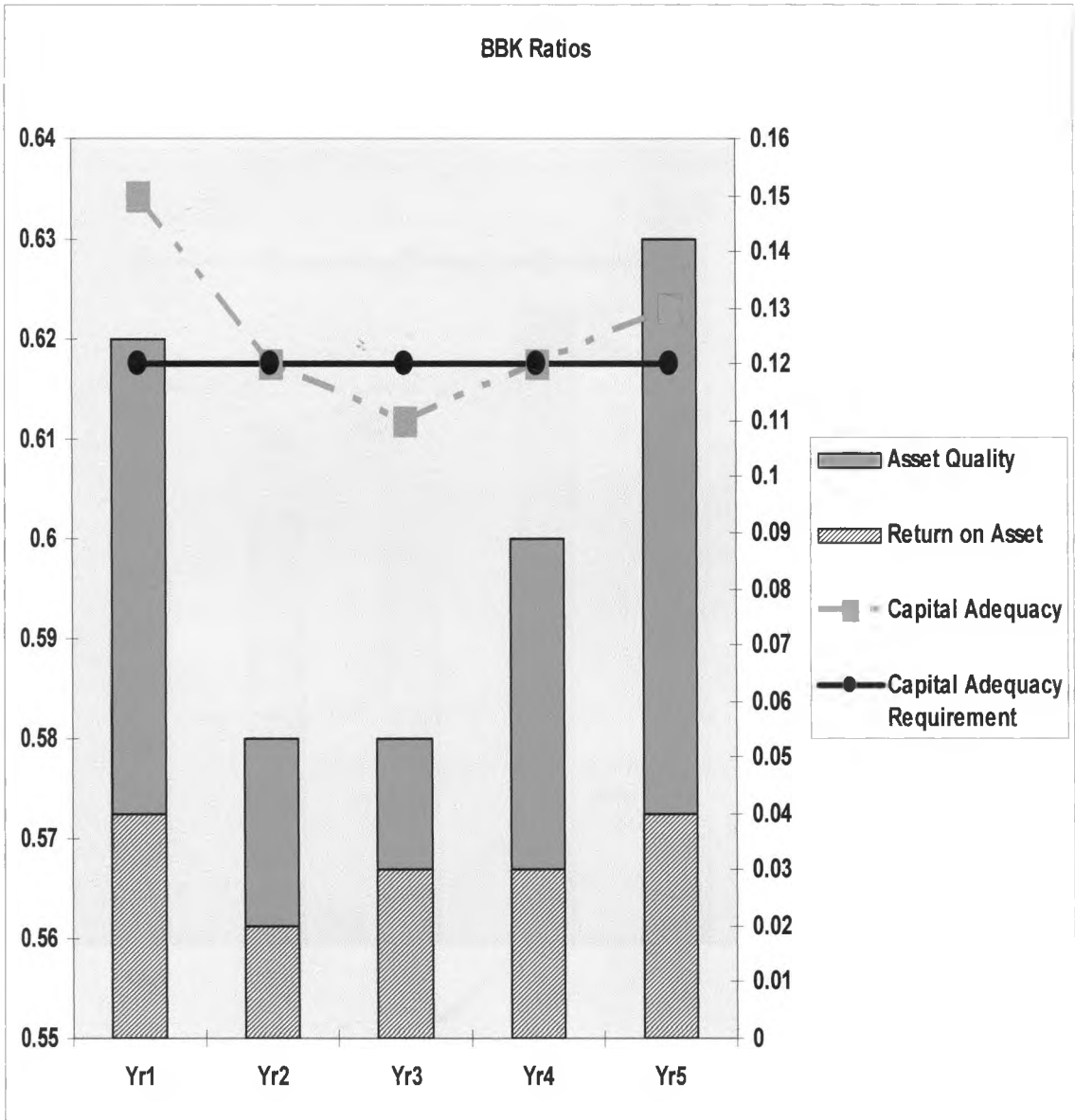
4.4 RATIO ANALYSIS FOR COMMERCIAL BANKS

4.4.1 Kenya Commercial Bank



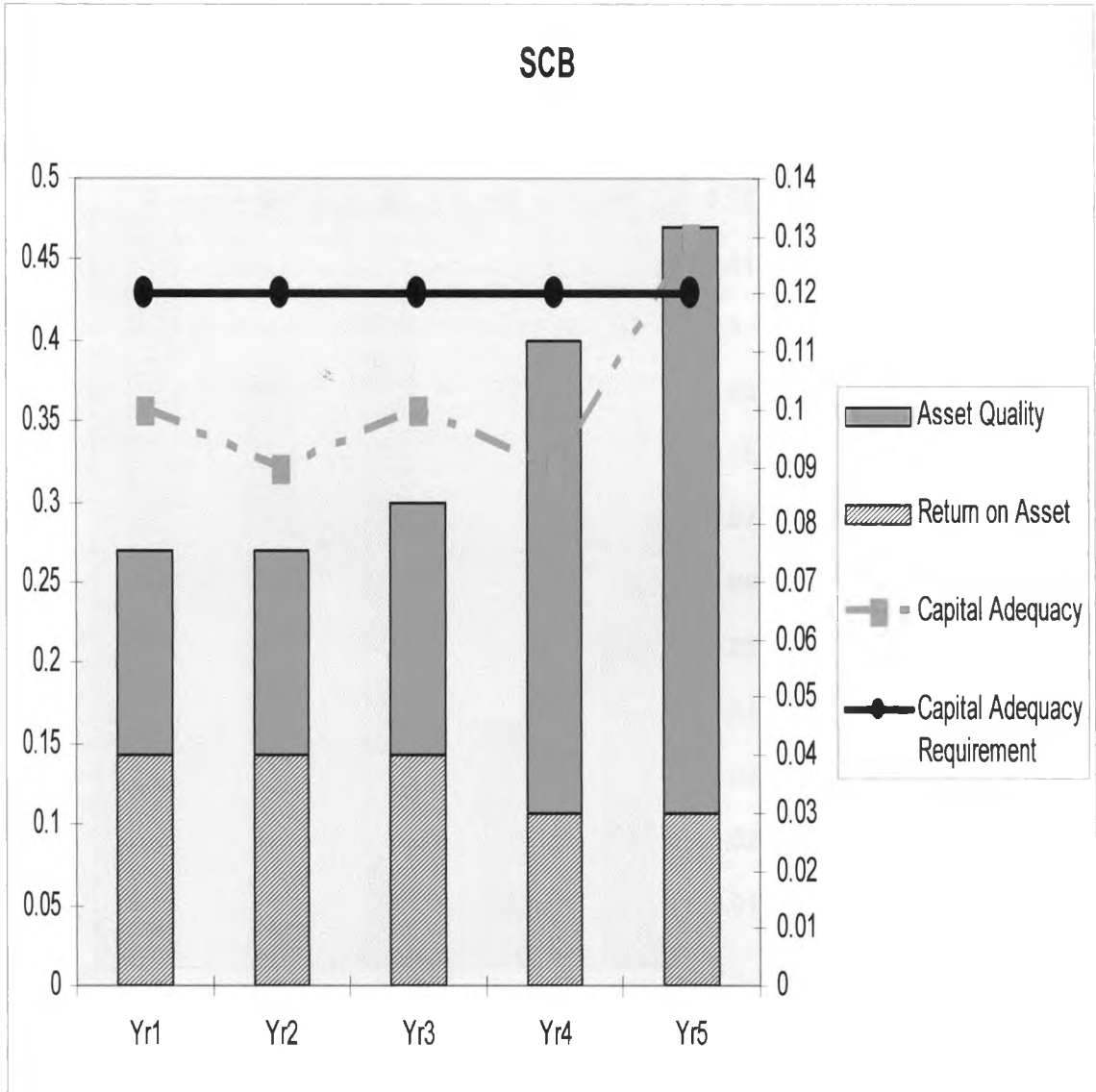
The overall composite rating of the bank is rated satisfactory. This was a result of capital adequacy operating at average of 12%. The ratio of core capital and total capital to risk weighted assets was above the minimum legal requirement of 12%. Asset quality was stable over the period of 5 years. The asset quality revealed KCB has adequate provision and the non-performing loans confirm a strong controls and effective involvement of the board in credit management. Earnings over the period under the review are rated satisfactory and steadily growing over the five years.

4.4.2 Barclays Bank



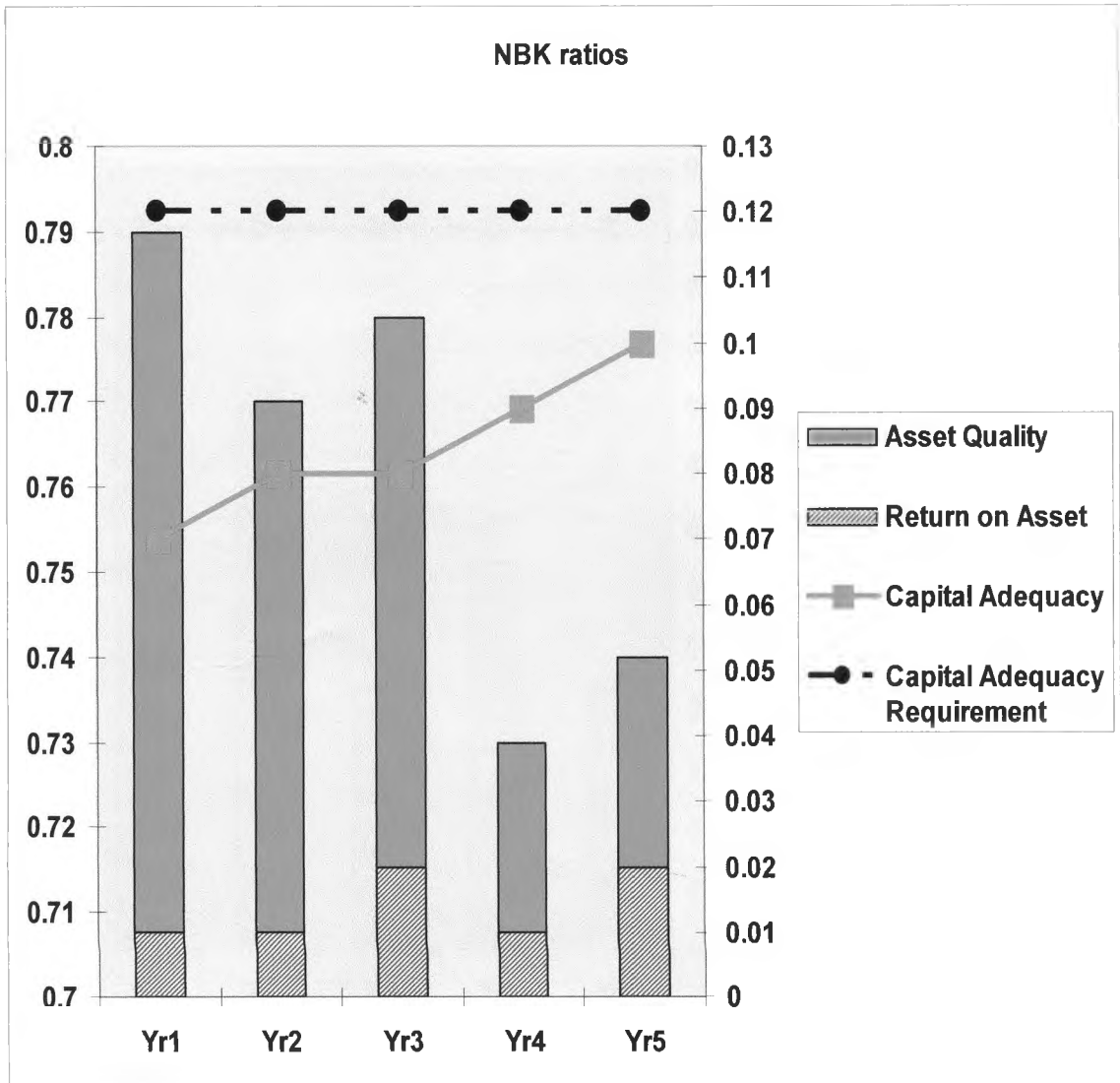
The overall composite rating of the bank is rated good. The capital adequacy of the bank is rated stable. The ratio of core capital and total capital to risk weighted assets was above the minimum requirement of 12%. Asset Quality is also stable over the period of 5 years. The asset quality revealed Barclays has adequate provision and the non-performing loans confirm a strong controls and effective involvement of the board in credit management. Earnings over the period under the review was rated positive and upward trend which shows the banks return on assets exhibited an upward turn.

4.4.3 Standard Chartered Bank



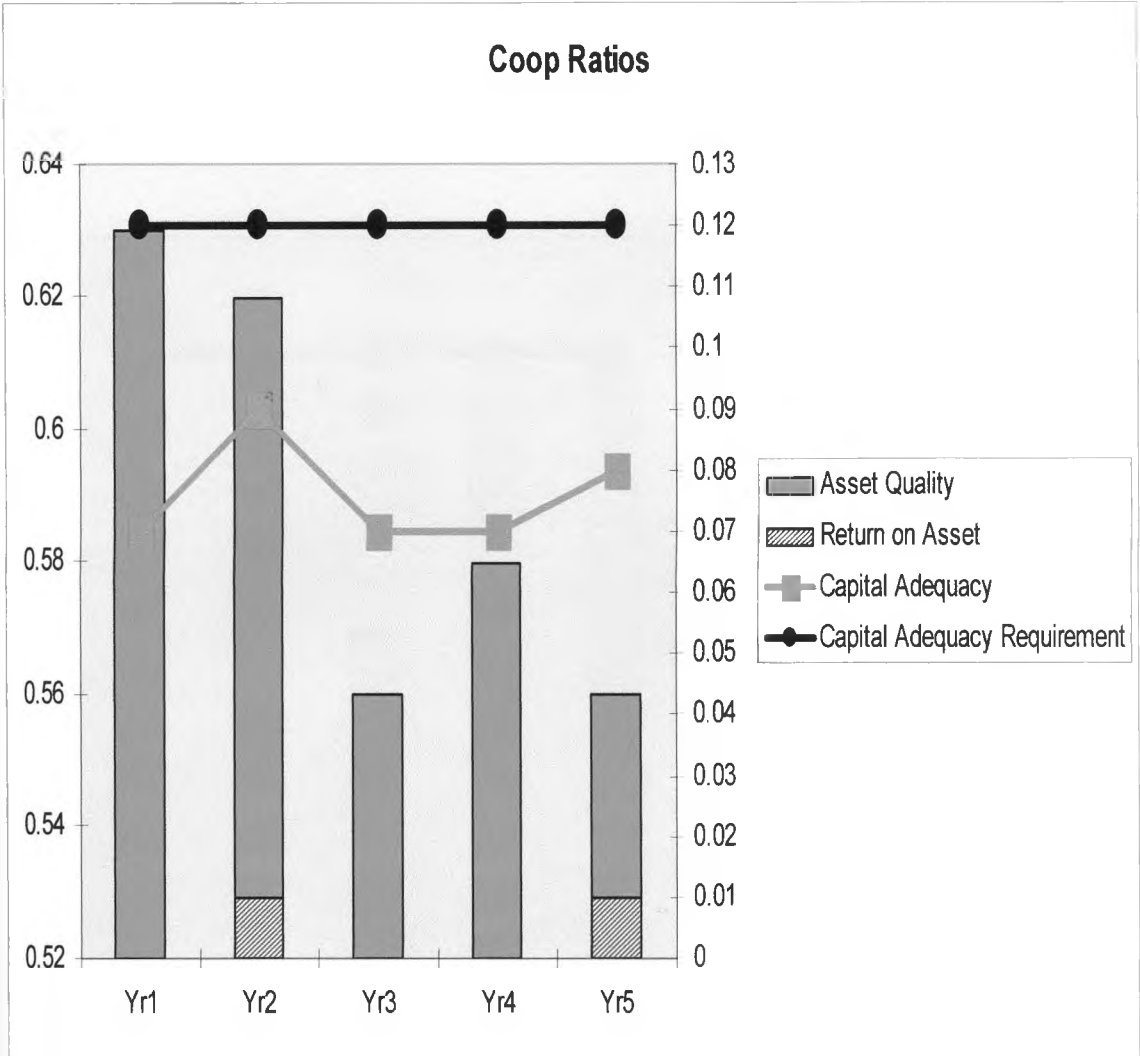
The overall composite rating of the bank is rated good. The capital adequacy of the bank for the first three years was erratic but in the later years was steadily growing. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset Quality is also stable and increasing over the 5 years period. The asset quality revealed the bank has adequate provision and the non-performing loans confirm a strong controls and effective involvement of the board in credit management. Earnings over the period under the review are rated fairly stable.

4.4.4 National Bank of Kenya



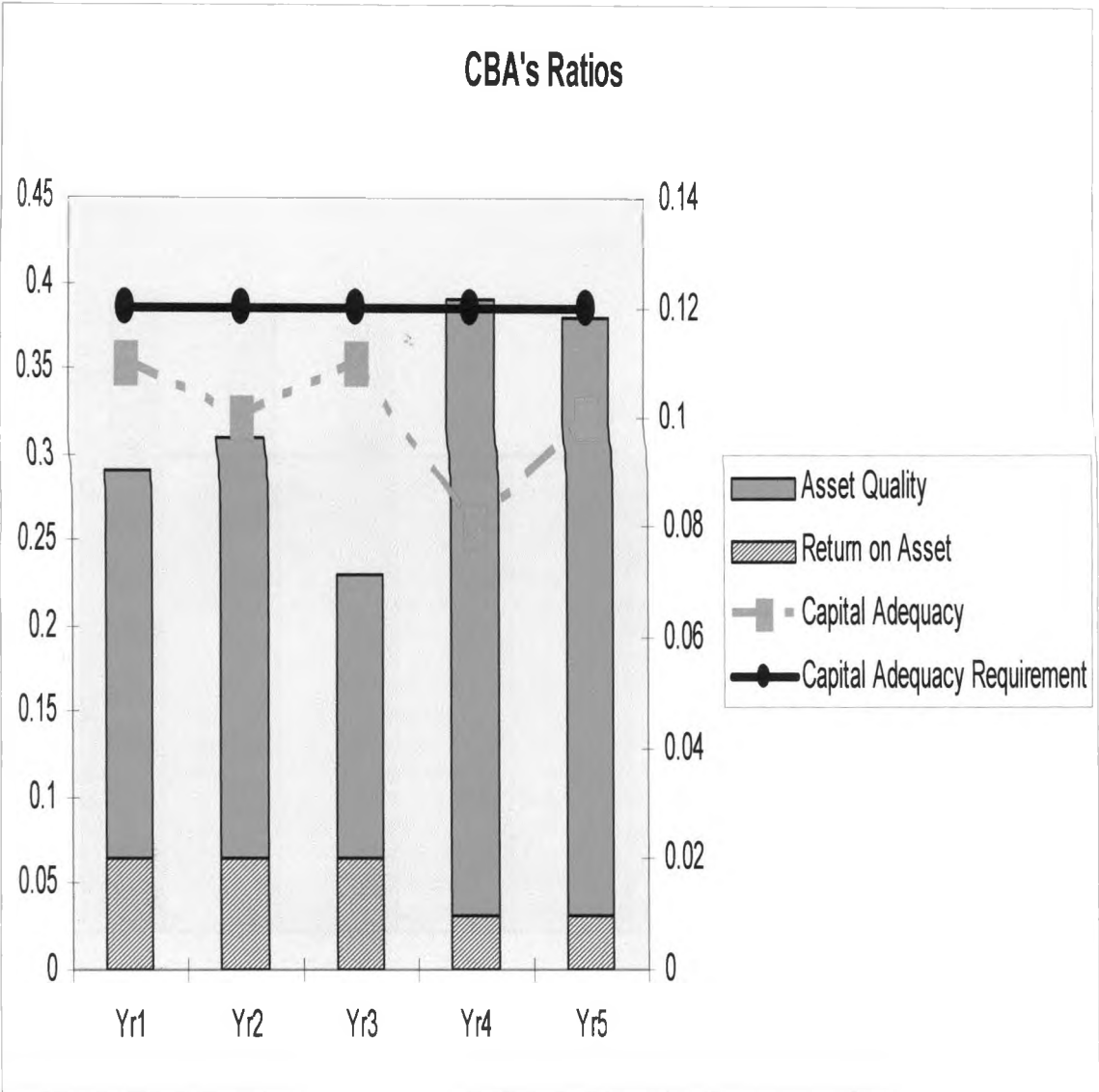
The overall composite rating of the bank was satisfactory. The capital adequacy of the bank is rated low but it is currently in upward trend. This brings to the attention of the bank management the need to improve on growing the assets of the company. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is in downward trend and the management should look for ways to arrest the deteriorating trend. The asset quality reveals that the management is still fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. The earnings of the bank were erratic but in the later two years, the return on assets is growing steadily at a positive note.

4.4.5 Cooperative Bank of Kenya



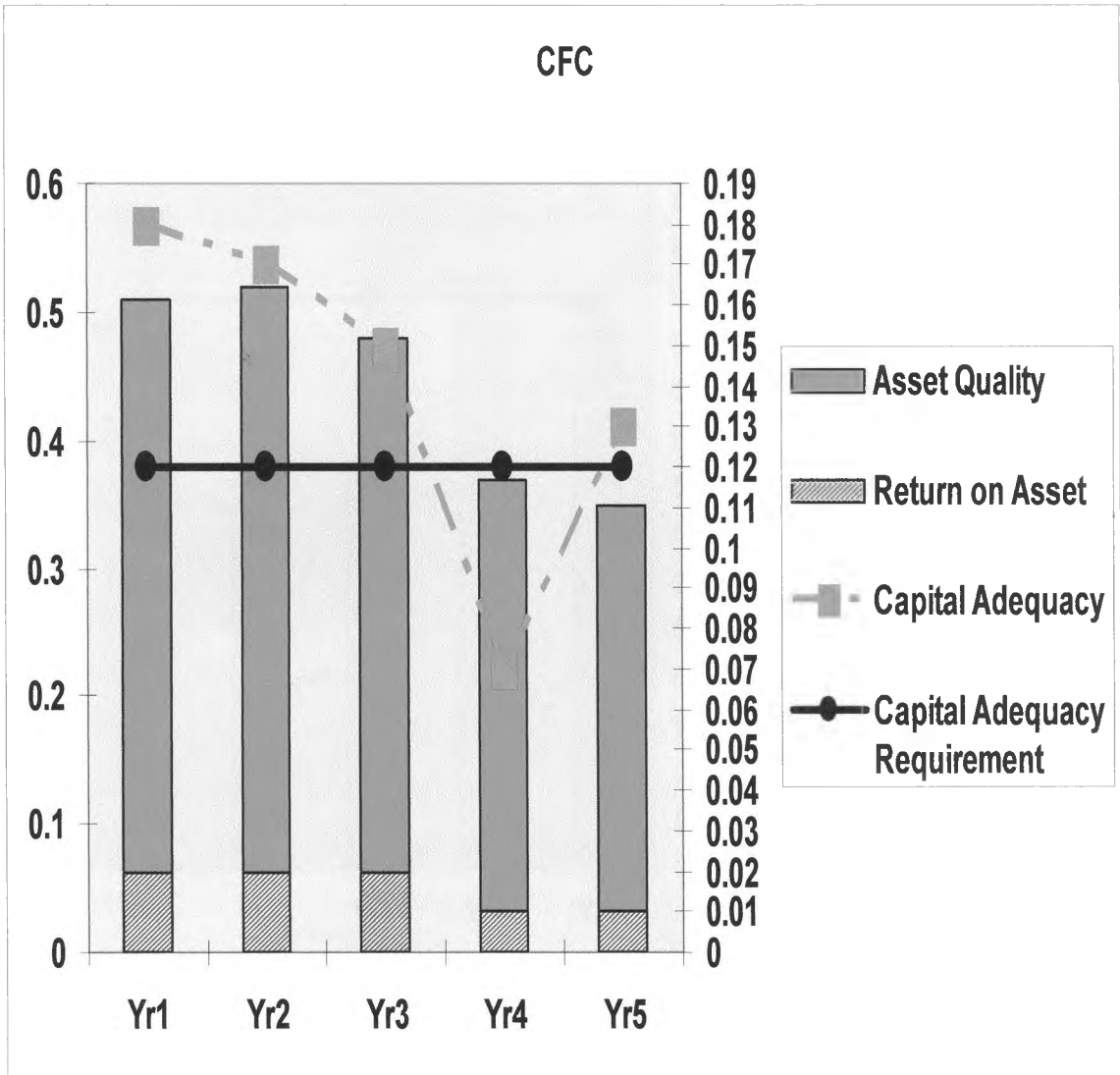
The overall composite rating of the bank was satisfactory. The capital adequacy of the bank is rated low. This brings to the attention of the bank management the need to improve on growing the assets of the company. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset Quality averagely in downward trend and the management should look for ways to arrest the negative trend. The asset quality reveals that the management is still fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. The earnings of the bank were erratic but in the fifth year the return on assets were rated .01 and the management of the bank should grow the earnings and total assets.

4.4.6 Commercial Bank of Africa



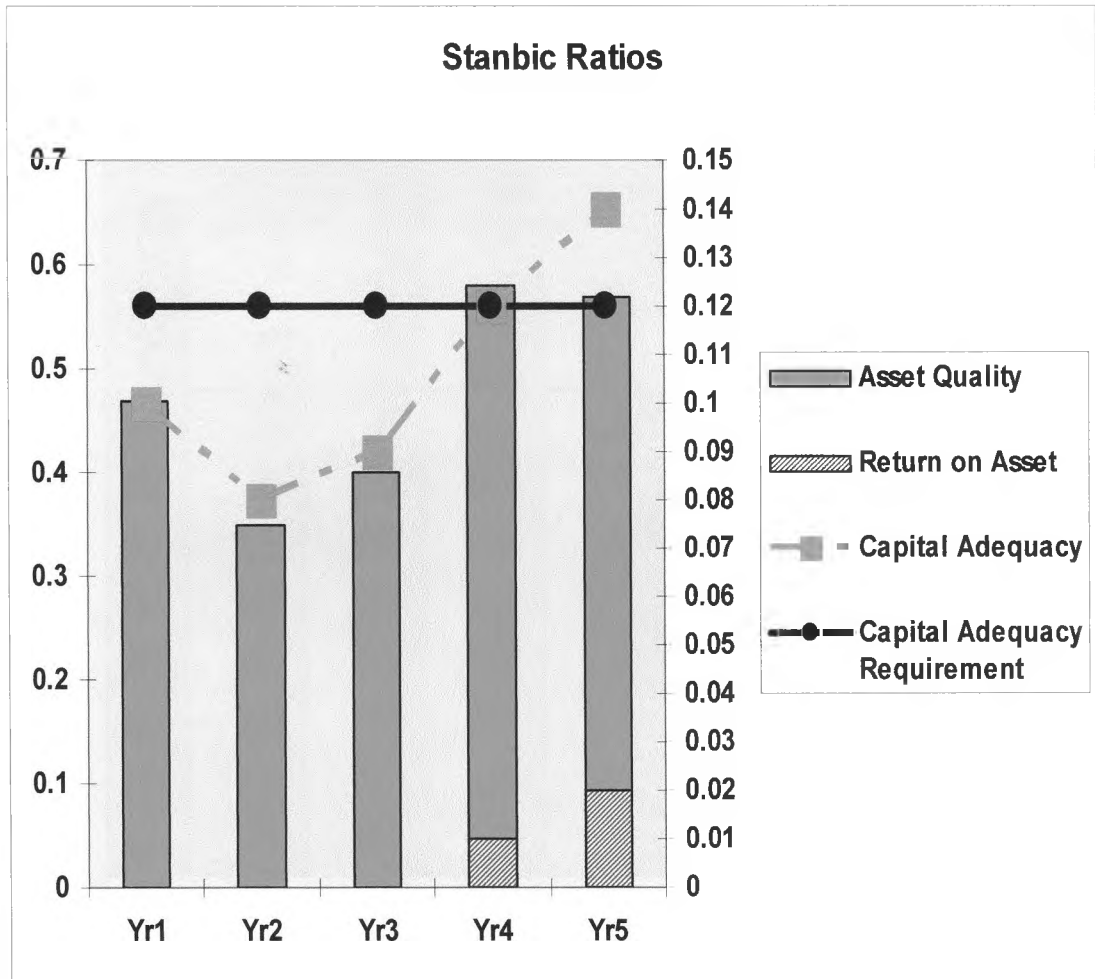
The overall composite rating of the bank was satisfactory. The capital adequacy of the bank is rated fairly low and erratic. This brings the attention of the bank management the need to improve on growing the assets of the company. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset Quality is rated positive and shows the management has put in place controls to fight the non-performing loans and effective involvement of the board in credit administration. The earnings of the bank is recorded low and the bank should grow its assets and the same will have an impact in earnings.

4.4.7 CFC Bank



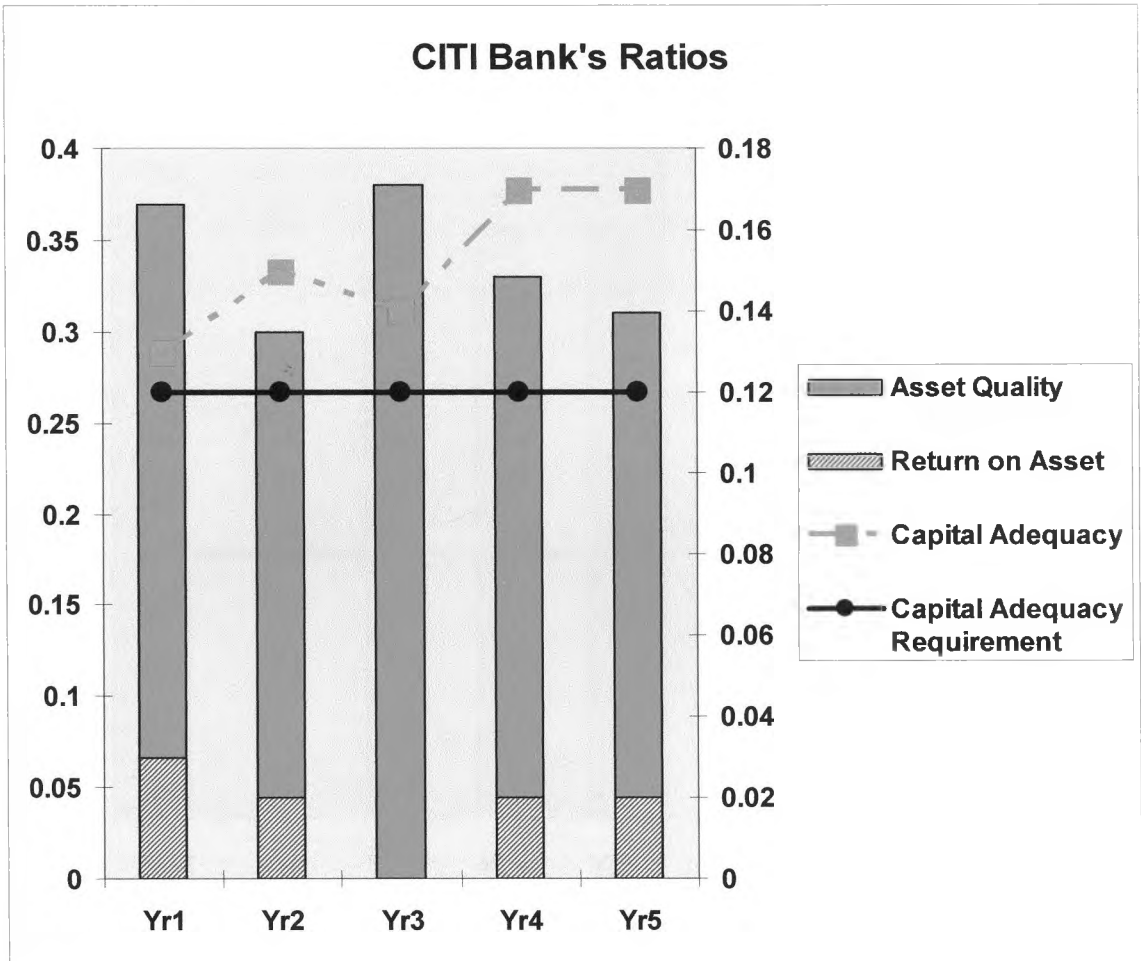
The overall composite rating of the bank was rated satisfactory. The capital adequacy of the bank is rated low but also sporadic. This brings to the attention of the bank management the need to improve on growing the assets of the company. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is rated stable but declining in the later years. The asset quality reveals that the management is still fighting the non-performing loans and should improve on controls and effective involvement of the board in credit administration. The earnings of the bank are low and the management should be concerned to reverse the situation and improve on its assets growth as a matter of urgency.

4.4.8 Stanbic Bank



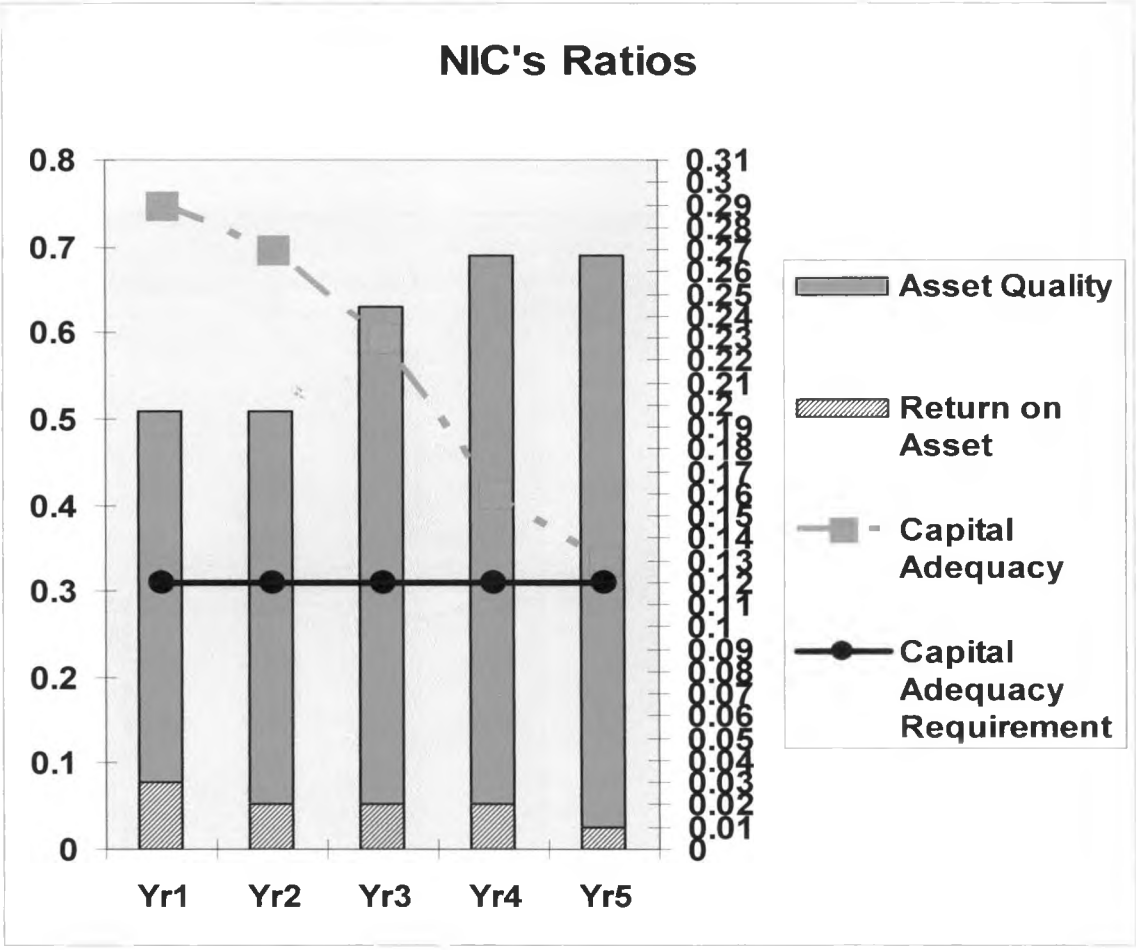
The overall composite rating of the bank was satisfactory. This was a result of capital adequacy of the bank being rated satisfactory. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is rated stable but increasing positively in the later years. The asset quality reveals that the management is fighting the non-performing loans and should improve on controls and effective involvement of the board in credit administration. The earnings of the bank were rated marginal due to return of 1% and 2% and the management should be concerned to reverse the situation and improve on its assets growth as a matter of urgency to develop a good performance in earnings and profitability of the bank.

4.4.9 Citibank



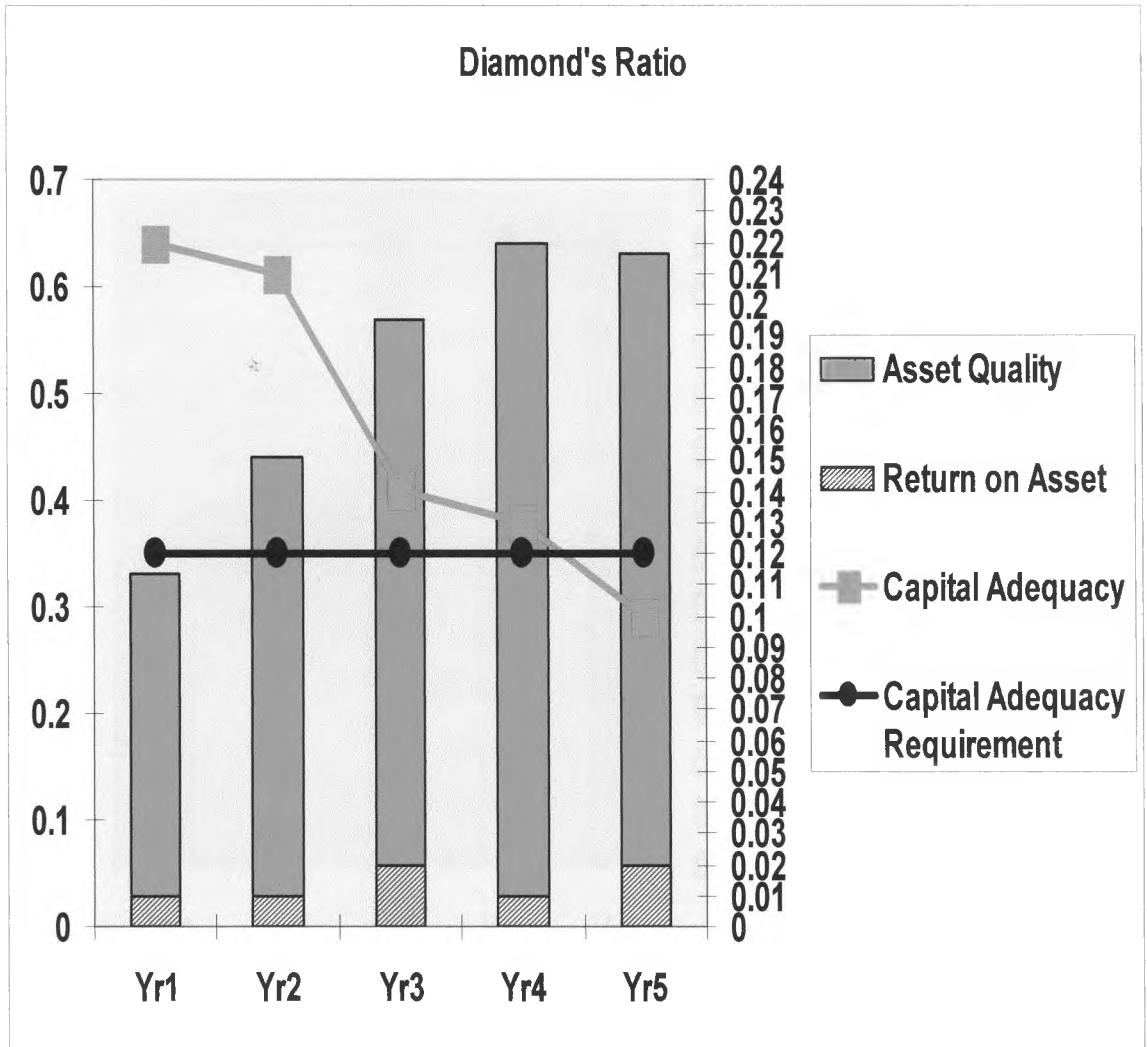
The overall composite rating of the bank is rated stable and in upward turn. This was a result of capital adequacy being rated satisfactory and in growth momentum. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality and earnings being rated stable and both are exhibiting positive trends in growth. The asset quality reveals that the management is fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. The management has also put in place measures which influence the growth of earnings through improved growth in assets.

4.4.10 NIC Bank



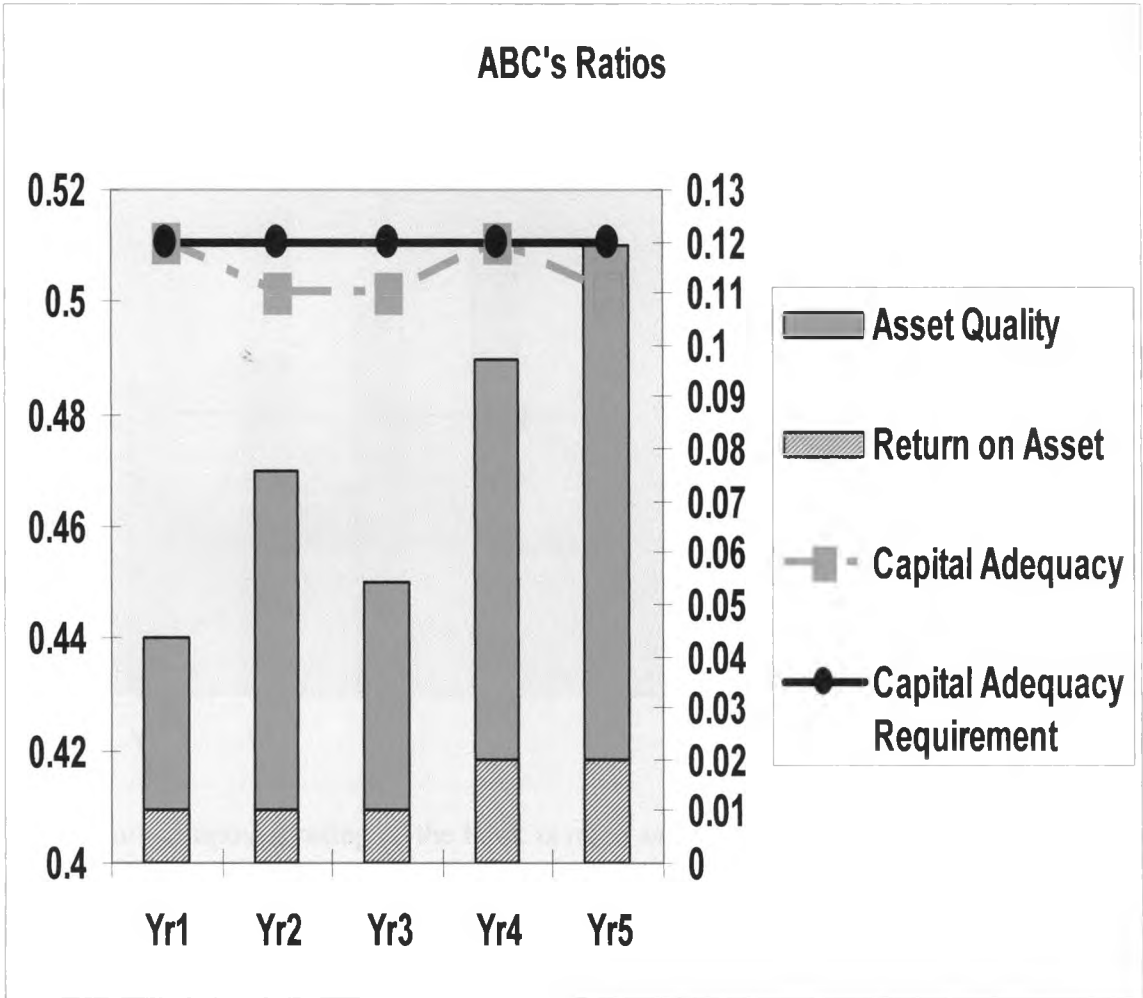
The overall composite rating of the bank is rated satisfactory and the growth is fairly positive. This was a result of capital adequacy being rated satisfactory and steadily declining. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is being rated stable since there is growth in assets of the bank. The asset quality reveals that the management is fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. Earnings were rated marginal due to diminishing returns of assets over the five year period. The management has to put in place measures which will influence the growth of earnings through improved growth in assets.

4.4.11 Diamond Trust Bank



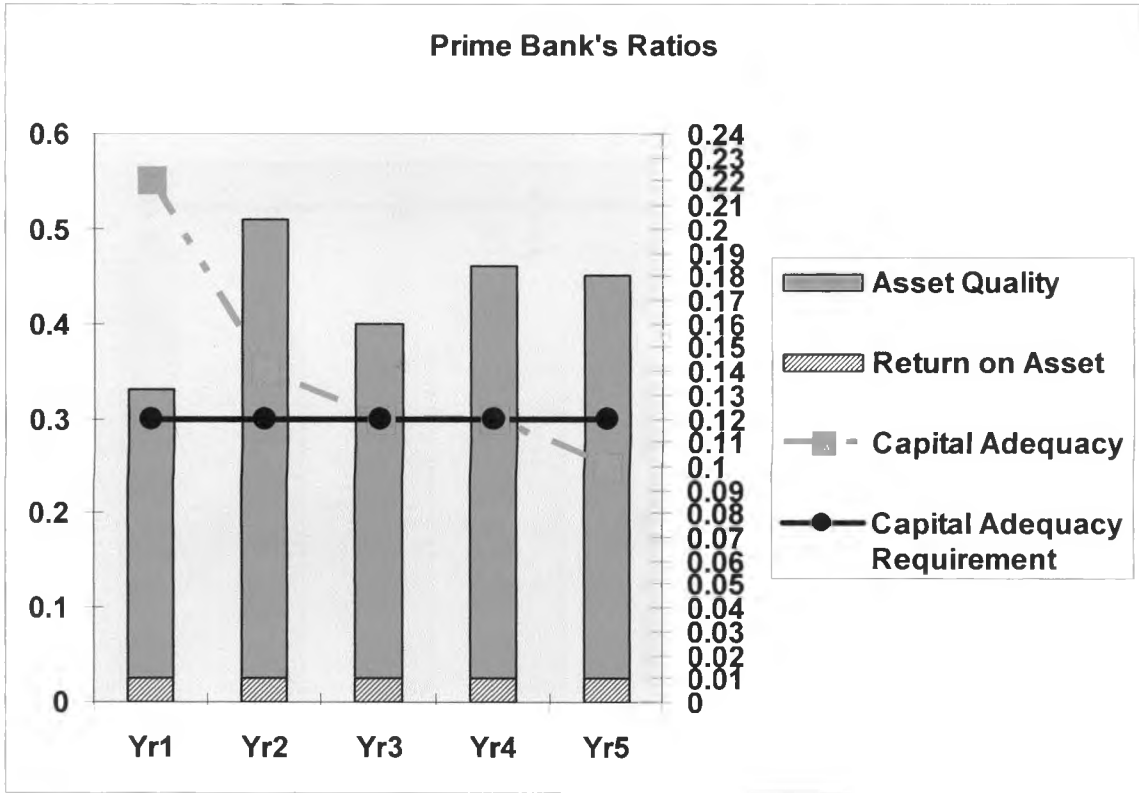
The overall composite rating of the bank is rated satisfactory. This was a result of capital adequacy being rated satisfactory due to consistent declining over the period under review. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is rated stable and steadily rising. The asset quality reveals that the management is fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. Earnings of the company are rated sporadic and the management has to put in place measures which influence the growth of earnings over the future times ahead.

4.4.12 ABC Bank



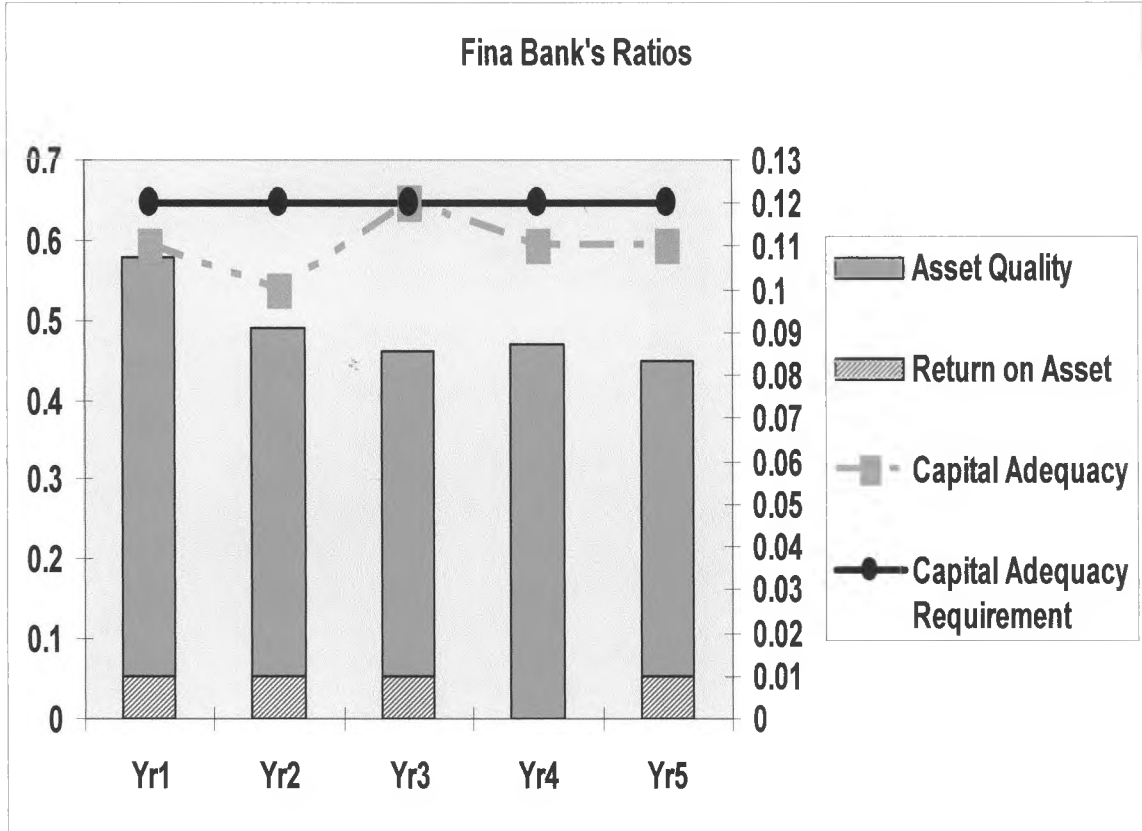
The overall composite rating of the bank is rated stable and in upward turn. This was a result of capital adequacy being rated satisfactory and in growth momentum. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality and earnings are being rated stable and both are exhibiting positive growth. The asset quality reveals that the management is fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. The management has also put in place measures which influence the growth of earnings through increasing the assets.

4.4.13 Prime Bank



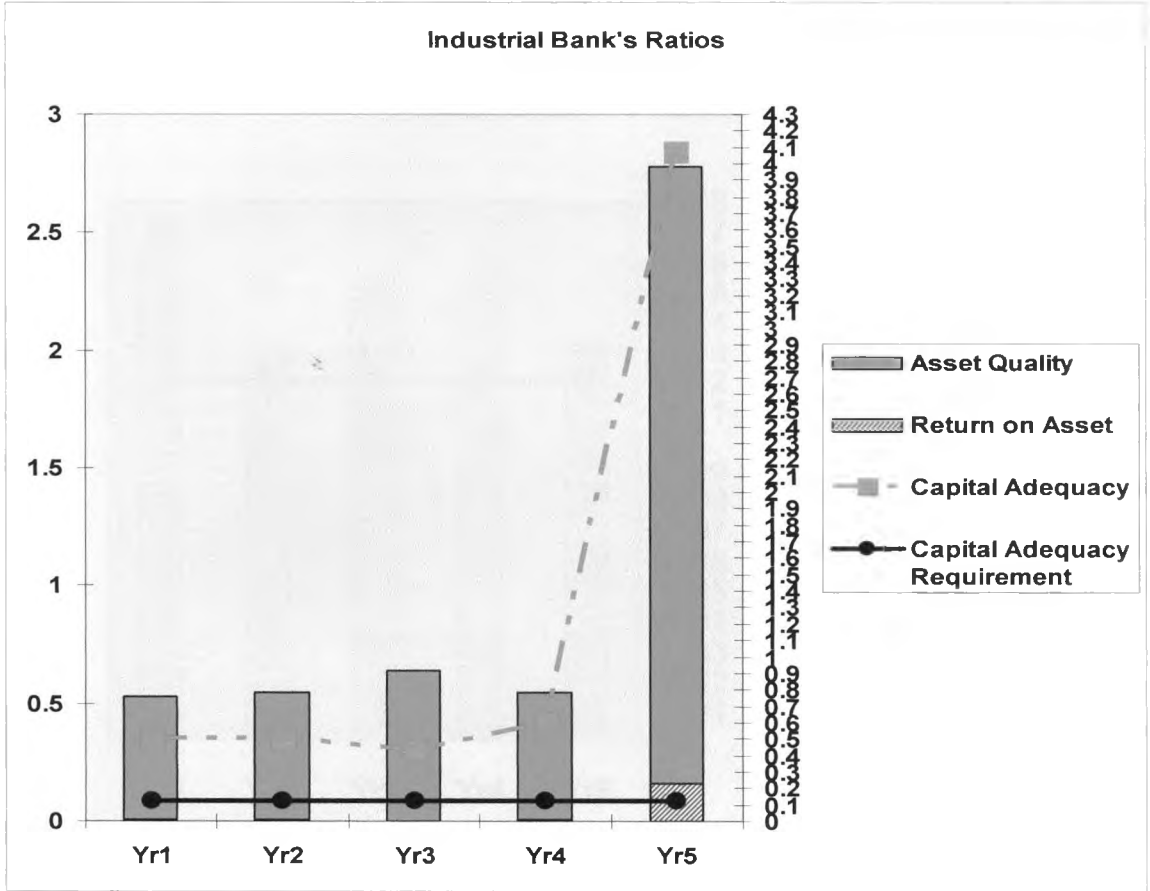
The overall composite rating of the bank is rated satisfactory. This was a result of capital adequacy being rated satisfactory but steadily declining. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is being rated stable. The asset quality reveals that the management is fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. The earnings have stagnated at 1% over five years. Therefore, the management has to move with speed to grow the bank portfolios otherwise the bank will experience serious credibility in profitability and improve on growth of assets.

4.4.14 Fina Bank



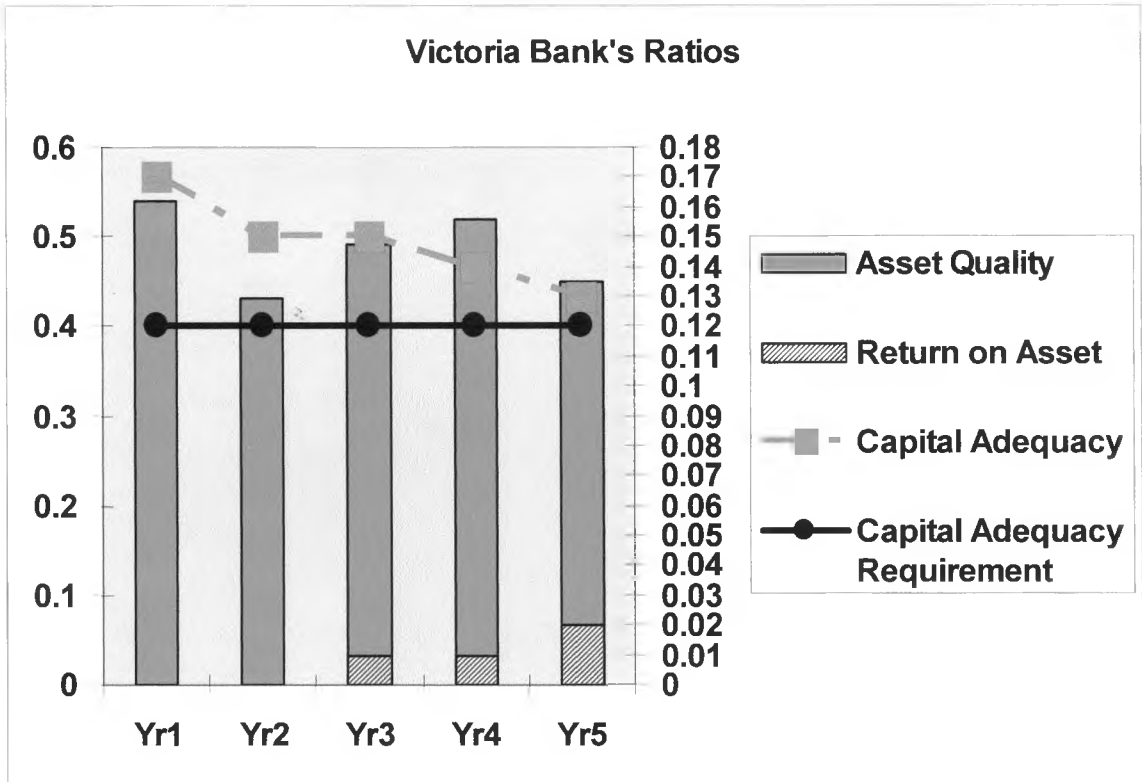
The overall composite rating of the bank is rated satisfactory. This was a result of capital adequacy being rated satisfactory and fairly stable. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality of the bank is consistently declining but the returns on assets was stable at 1%. The asset quality reveals that the management is fighting the non-performing loans and thus improve on controls and effective involvement of the board in credit administration. The management has to put in place measures which will reverse the decline in earnings by influencing the growth assets which is critical for improvement in earnings.

4.4.15 Industrial Development Bank



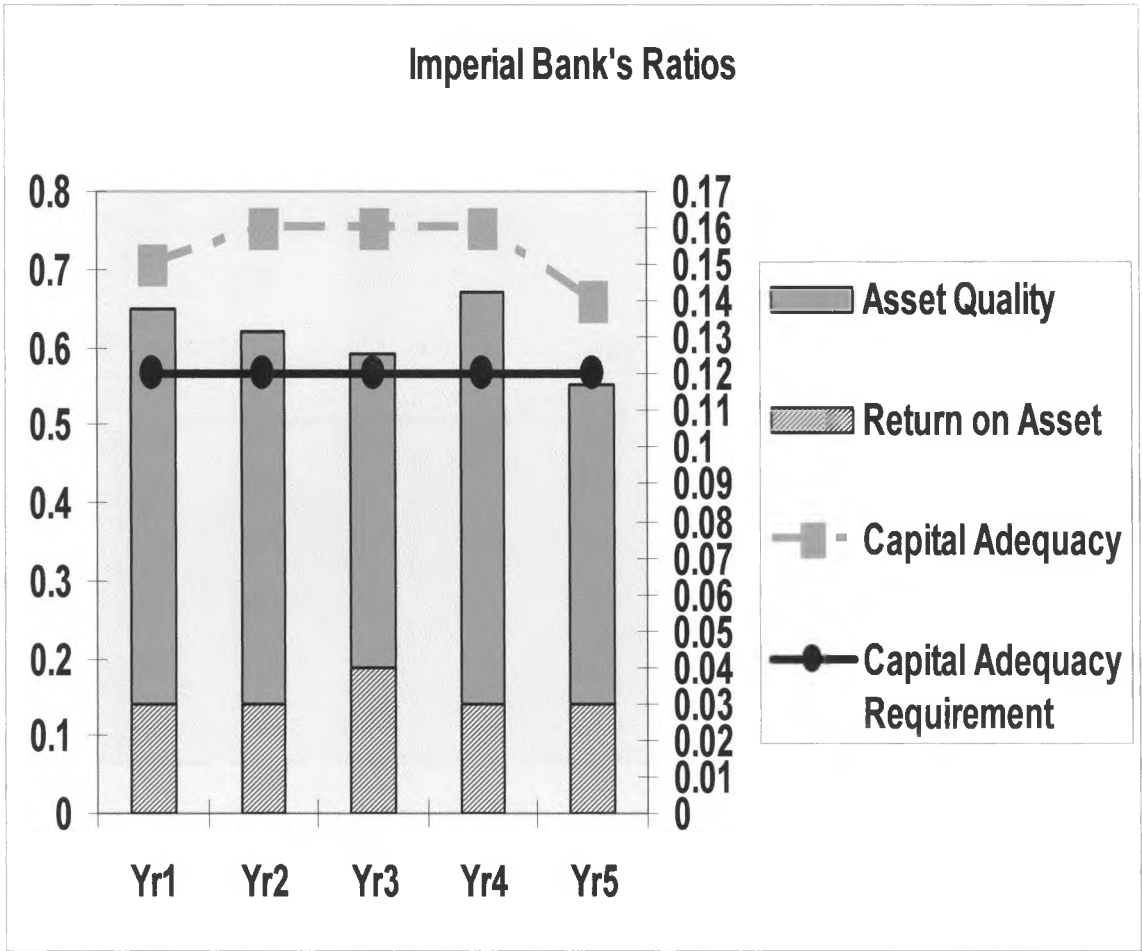
The overall composite rating of the bank is rated unsatisfactory. This was a result of capital adequacy being rated unsatisfactory. The ratio of core capital and total capital to risk weighted assets was below the minimum of 12%. Asset quality and earnings is being rated marginal. The asset quality reveals that the management was not fighting the non-performing loans and thus no controls and ineffective involvement of the board in credit administration. The management has not put in place measures which influence the growth of earnings through improved growth in assets. This study confirms why the management of the company opted for the company to be acquired by Equity Bank. Otherwise the bank was ripe for collapse; the management did not put in place strategies to counter the dismal performance in the prior years to acquisition.

4.4.16 Victoria Bank



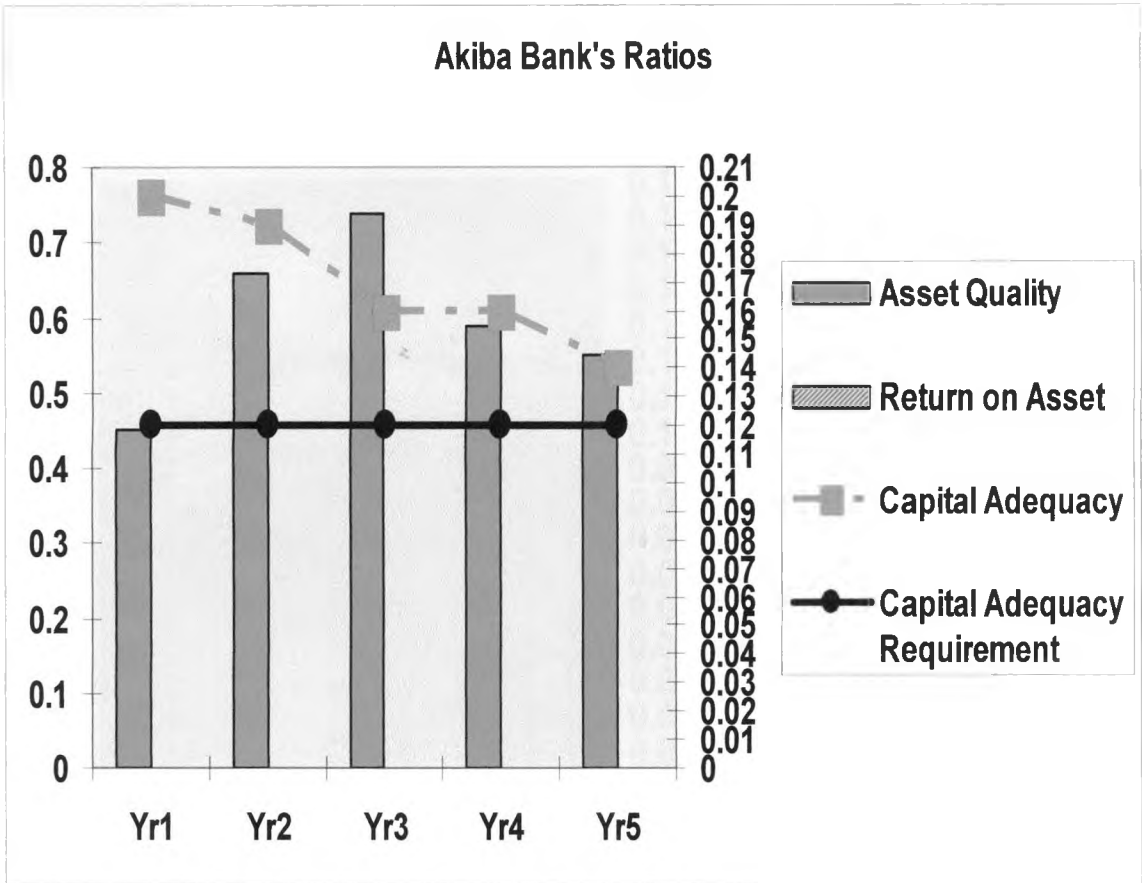
The overall composite rating of the bank is rated satisfactory. This was a result of capital adequacy being rated satisfactory and steadily declining. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality of the bank is rated satisfactory due to the lack of consistent pattern in growth. The asset quality reveals that the management is fighting the non-performing loans and should improve on controls and effective involvement of the board in credit administration. Return on assets is rated marginal and this should bring the attention of management the need to put in place measures which will improve the growth in earnings by influencing the growth of assets.

4.4.17 Imperial Bank



The overall composite rating of the bank is rated satisfactory. This was a result of capital adequacy being rated satisfactory and fairly stable. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality of the bank is being rated stable. This reveals that the management is fighting the non-performing loans and thus improves on controls and effective involvement of the board in credit administration. Earnings also are being rated stable over the period and this confirms that the management of the bank was desirous to put in place measures which will enhance the growth of company assets.

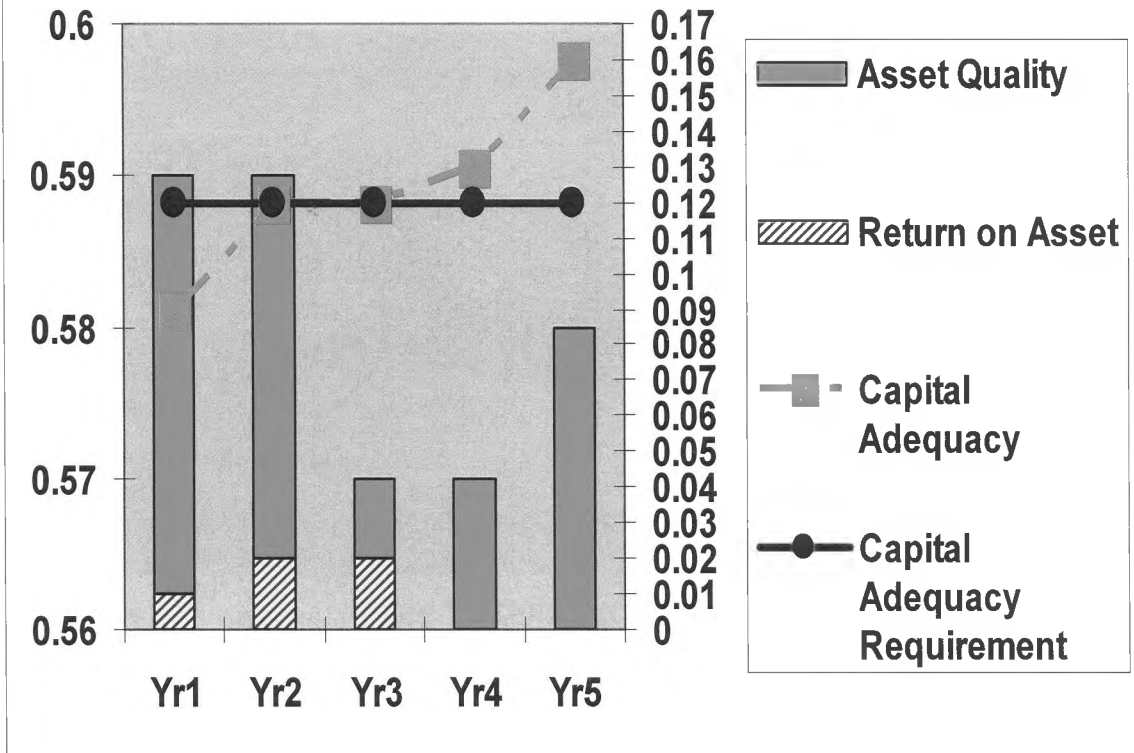
4.4.18 Akiba Bank



The overall composite rating of the bank is rated unsatisfactory. This was a result of capital adequacy being rated satisfactory and steadily deteriorating from years 1 to 5. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality of the bank is being rated sporadic. This reveals that the management is not adequately fighting the non-performing loans and thus improves on controls and effective involvement of the board in credit administration. Earnings also are being rated unsatisfactory over the period and this confirms that the management of this bank should immediately change and increase the assets which have a strong bearing on the earnings of the bank.

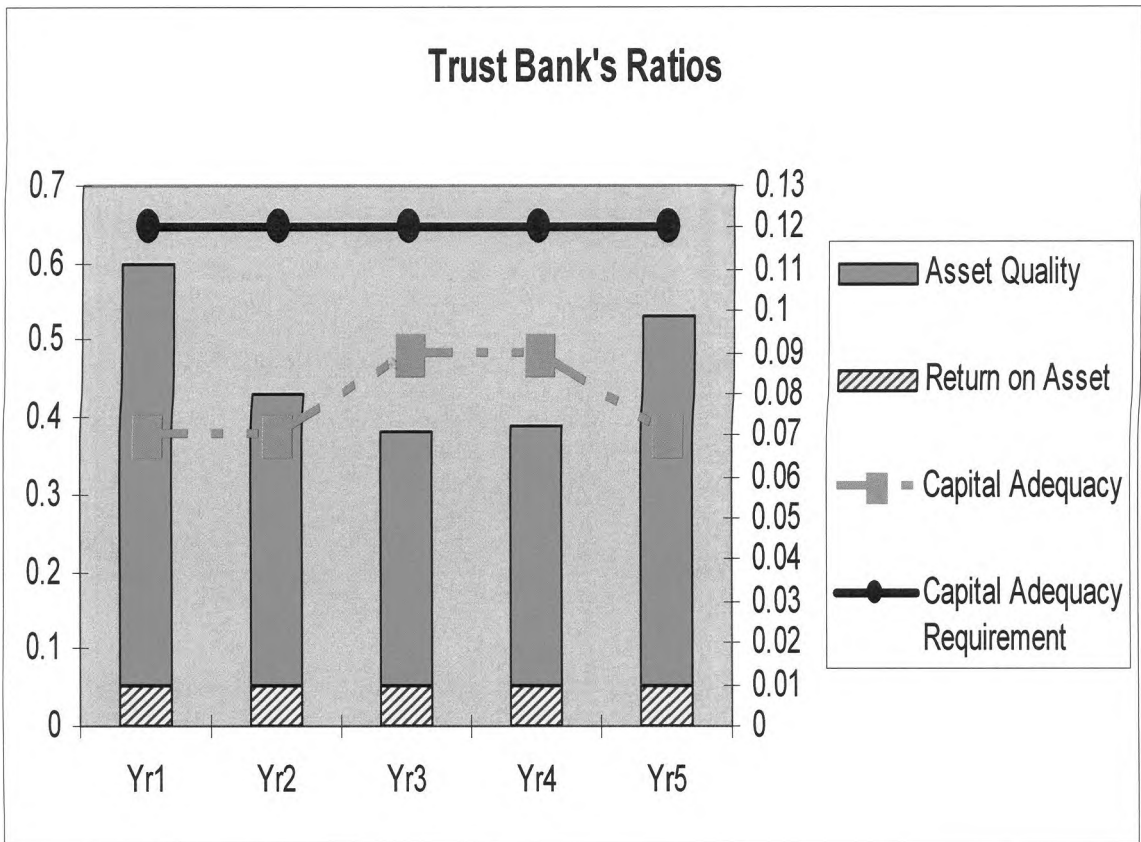
4.4.19 Kenya Finance Bank

Kenya Finance Bank's Ratios



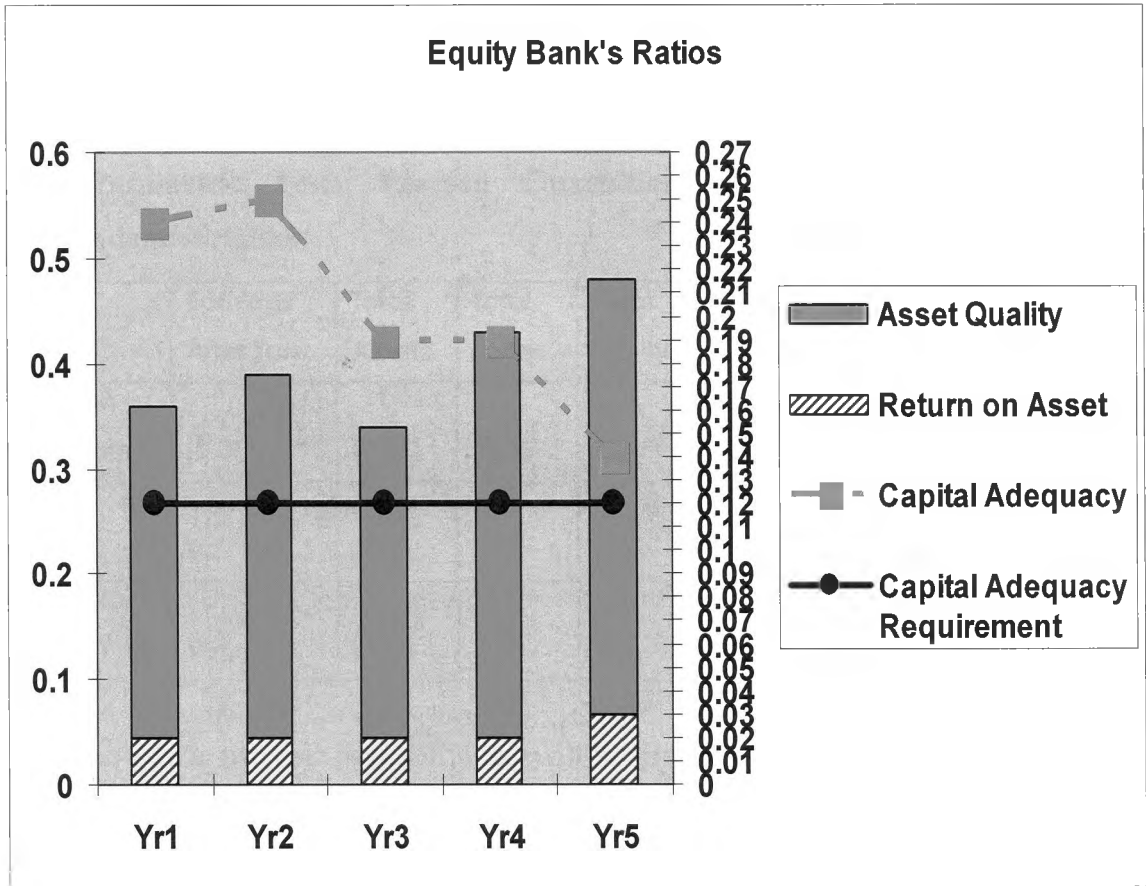
The overall composite rating of the bank is rated unsatisfactory. This was a result of capital adequacy being rated satisfactory. The ratio of core capital and total capital to risk weighted assets was below the minimum of 12%. Asset quality and earnings is being rated marginal and the bank made a loss in period 4 and 5. The asset quality reveals that the management is not fighting the non-performing loans and thus controls and effective involvement of the board in credit administration is rated minimal. The management has not put in place measures which will influence the growth of earnings through improved growth in assets. This study brings serious issues that led to the collapse of Kenya Finance Bank in the banking sector.

4.4.20 Trust Bank



The overall composite rating of the bank is rated marginal. This was a result of capital adequacy being rated satisfactory. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality and earnings is being rated marginal. The asset quality was also sporadic and this reveals that the management was not fighting the non-performing loans and thus controls and effective involvement of the board in credit administration was rated minimal. The management was not able to influence the growth of earnings through increasing the assets. This study brings clear attention to the factors that affected and eroded profitability of the bank and led to the collapse of the bank.

4.4.21 Equity Bank



The overall composite rating of the bank is rated satisfactory. The capital adequacy of the bank is being rated satisfactory. The ratio of core capital and total capital to risk weighted assets was above the minimum of 12%. Asset quality is also stable and shows a steady increase over the 5 years period. The asset quality revealed that the management has put in place adequate provision and the non-performing loans confirm strong controls and effective involvement of the board in credit management. Earnings over the period under the review are rated fairly stable and in positive trend and confirms that the management has put in place strategies to increase their total assets.

4.5 Inferential Statistics

Descriptive statistics showed how the different determinants of bank failure behaved but it could not be conclusive or identify significant relationships. The study in its attempt to identify significant relationships conducted parametric and non parametric tests.

4.5.1 Parametric Tests: Pearson Correlation on Bank Failure with other independent variables

	Earnings After Tax	Total Assets	Total Loans	Total Equity	Capital Adequacy	Asset Quality	Return on Assets
Pearson Correlation	(0.06)	(0.11)	(0.05)	(0.05)	0.98	0.95	0.88
Sig. (1-tailed)	0.27	0.15	0.31	0.32	0.00	0.00	0.00
N	96	96	96	96	96	96	96

Since the data is numeric parametric test will be first be used to analyse it. From the table above the person correlation shows that there is no significance relationship between bank failure and earnings after tax, total assets, total loans and total equity at both 90% and 95% confidence levels. On the other hand there was a significant relationship between capital adequacy, asset quality and return on asset. The relationship showed strong correlation.

4.5.2 Criticism of Pearson Correlation

Pearson correlation assumes that the data is normally distributed but this was not the case. The variables were highly skewed and hence the assumption of normal distribution must be disregarded.

4.5.3 Non Parametric Tests

Spearman's rho	Earnings After Tax	Total Assets	Total Loans	Total Equity	Capital Adequacy	Asset Quality	Return on Assets
Correlation Coefficient	(0.12)	(0.21)	(0.03)	(0.04)	0.37	0.91	0.10
Sig. (2-tailed)	0.24	0.04	0.79	0.70	0.0002	0.000001	0.35
N	96	96	96	96	96	96	96

The spearman rank correlation is then used and it shows that bank failure had significant relationship with only three variables; capital adequacy, asset quality and total assets. Total Assets had a weak negative correlation with bank failure while capital adequacy had a weak positive correlation with bank failure. Asset quality had a strong positive correlation with bank failure.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary Findings

This study was conducted with the aim of achieving the objectives of analyzing the determinants of bank failures using the variables of capital adequacy, asset quality and return on assets. It further analysed the relationship of total equity, total assets, total loans and earnings after tax to predict a bank failure.

Capital adequacy was evaluated in relation to whether the capital meets the minimum regulatory requirements; adequacy of a bank's capital including the impact of asset quality, off-balance sheet items and earnings; adequacy of allowances for probable losses and their effect on the capital when they are inadequate; dividend policies and their impact on the capital; shareholder ability/willingness to maintain an adequate level of capital and any additional capital required to meet regulatory requirements.

Asset quality is evaluated in relation to: adequacy of underwriting standards, soundness of credit administration practices and appropriateness of risk identification practices; the level; distribution; non-performing losses for both on and off-balance sheet transactions; adequacy of probable losses and other valuation reserves; the diversification and quality of loan and investment portfolios; the probability of management to properly monitor and administer its assets and adequacy of internal controls and volume and nature of credit documentation exceptions.

The quality and quantity of earnings are evaluated in relation to: the level of earnings, including trends, quality and structure of earnings, adequacy of provisions for probable losses, major types of income/expense size and trends, vulnerability to outstanding items, transactions of securities (market to market) types of activities with high risks, and unconventional sources of income, control over income and expenses including variances analysis of budget against actual, vulnerability to expensive funds, timely adjustments to the balance sheet to ensure accurate bookings of income and expense, impact of possible

claims to the bank arising from litigations and income/expense items that should be adjusted in accordance with the results of the examination.

For banks where capital adequacy was rated unsatisfactory, asset quality and earnings being rated marginal were good predictors that a commercial bank was facing a problem and the bank was likely to collapse unless measures are put in place to arrest the situation. The overall rating for a bank such as satisfactory shows that capital adequacy was within the legal minimum requirements of the regulator. However, for those banks that their capital adequacy was sporadic and erratic showed the bank was a recipe for a problem in future and its eventual success in the industry was uncertain. An issue such as ratio of core capital and total capital to risk weighted assets was way below the minimum was rated low is also detrimental for failure and the bank management should be interested on how to reverse the negative trends.

Asset quality that was rated marginal or low revealed that the management of banks was not fighting the increase of non-performing loans and controls and involvement of the board was minimal. Earnings is also a factor that affects the success of a commercial bank and where the return on assets is rated low confirms that the future of the bank is also under serious threat of failure. The commercial banks which the study confirmed their poor rating in terms of capital adequacy, asset quality or earnings are predicted to fail. For example banks such as Trust bank, Kenya Finance Bank, Industrial Development Bank or Akiba Bank showed positive results to have characteristics of banks that were likely to fail or their future success was not certain. The banks performed poorly in the following issues:

- Core capital of the bank was below the legal requirements of 12% and the Ratio of Core capital and total capital to risk weighted assets and off balance sheet exposures were both below the minimum requirements.
- The bank's earnings were considered to be marginal.
- The bank's asset quality was rated marginal on the account of large exposures to core capital was also considered high.
- Ratio of non-performing loans to core capital and gross loans was also rated high.

- Existence of inadequate provisioning for both loan losses and other assets.
- Failure to perform review and provisioning of other assets as required by the regulation and management of risk assets regulation by the Central Bank of Kenya.

5.2 Conclusions

Looking at individual banks there may be no strong argument about the variable that highly affected the bank failures. It is therefore necessary to use either the parametric and non-parametric results to show the significant variables for bank failures. The study therefore rejects the null hypothesis that bank failure has a significant relationship with earnings after tax, total loans, total equity and return on assets. It however accepts the null hypothesis that bank failure has a significant relationship with capital adequacy, asset quality and total asset. The most important factor on bank failure was found to be asset quality because it had a strong positive correlation with it.

We find, not surprisingly, the less-well capitalized banks are at a greater risk of failure, as are banks with high ratios of loans to assets, evidence of poor quality loan portfolios and banks with low earnings. Asset quality was the most critical aspect that affects the bank failure, capital adequacy and total assets also affects the predictability of bank failure. Closer look at the asset quality is a function of total loans and total assets. Since total loans did not affect bank failure significantly then it was the denominator (total assets) which influenced the relationship between the assets quality with bank failure.

The holding loans constant will increase in total asset and lead to decrease in quality of assets which will reduce the chances of bank failure. Capital adequacy on the other hand is a function of total equity to total asset. It also had a positive relation with bank failure which meant that increase in capital adequacy will increase chances of bank's failure. Total equity did not have a significant relationship with bank failure therefore it was total assets side of the ratio that affected bank's failure. A decrease in total asset will increase capital adequacy ratio and hence increase the chances of bank's failure.

5.3 Limitations of the Study

Granted that the data used in this study was obtained from published financial statements, one must be cautious of the limitations associated with such data. This data may, to some degree be manipulated by the management of a firm to present a “rosy” view of the firms position. This kind of manipulation is known as “window dressing”. The possibility of window dressing has been controlled to some extent by use of many commercial banks. Data accessibility was a problem because some data was considered confidential and therefore it was very difficult for Central Bank to release them, but the researcher managed to get the needed information. This study was undertaken within a fixed duration and the researcher did not have adequate time to explore aspects like dynamic ratios, which reflect day-to-day operations of the commercial banks.

5.4 Recommendations

- Commercial banks should put more emphasis on growing the assets. This should be done through:
 - i. Acquiring technological faster systems or reengineering asset growth systems
 - ii. Diversifying assets growth through money markets and other securities other than loans
 - iii. Aggressively marketing bank’s assets products including loans
- Others issues important for growing assets:
 - i. Management should not fear expansion programs that involve equity financing since they did not influence bank failure
 - ii. Management should not over emphasize the relevance of earnings after tax and return on assets because they did not influence the chances of bank failure. If the either earnings after tax or return on assets were high but large dividend pay out policies were kept in place and assets growth was not valued by the management then the company could fail despite high earnings after tax and returns on assets.

5.5 Suggestions for further study

An evaluation of bank's failure using CAMEL approach suggests the use of capital adequacy, asset quality, management efficiencies, earnings and liquidity ratios. This study however used partial selection and considered capital adequacy, asset quality and earnings since a previous study conducted showed that the three only had significant relationship with bank failure. It would be interesting if a study on bank failures in Kenya will look at all the five variables. Another interesting area would be the determination of factors affecting management efficiencies, size and foreign ownership in predicting bank failure.

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6.0 APPENDICES

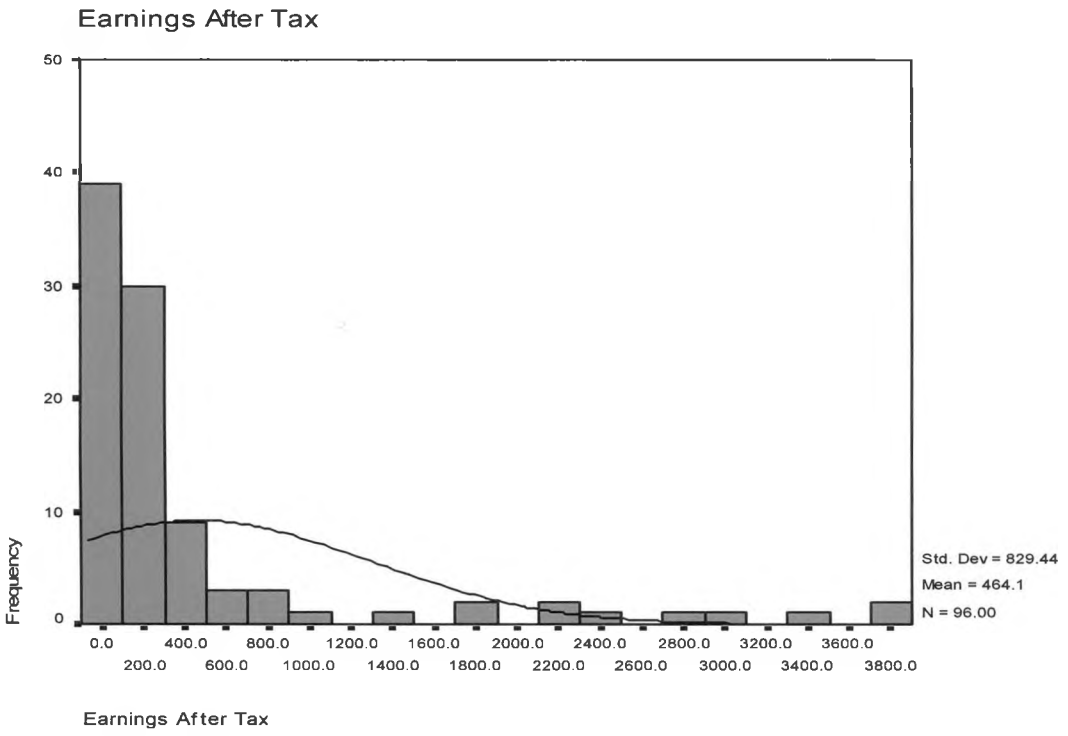
Appendix (i): Commercial Banks in Kenya

1	African Banking Corporation Ltd	22	Fidelity Commercial Bank Ltd
2	Akiba Bank Ltd	23	Fina Bank Ltd
3	Bank of Africa Kenya Ltd	24	Giro Commercial Bank Ltd
4	Bank of Baroda (K) Ltd	25	Guardian Bank Ltd
5	Bank of India Ltd	26	Habib Bank AG Zurich
6	Barclays Bank of Kenya Ltd	27	Habib Bank Ltd
7	CFC Bank Ltd	28	Imperial Bank
8	Chase Bank (K) Ltd	29	I&M Bank Ltd
9	Charterhouse Bank Ltd	30	Kenya Commercial Bank Ltd
10	Citi Bank, N.A	31	K-Rep Bank Ltd
11	City Finance Bank Ltd	32	Middle East Bank Ltd
12	Commercial Bank of Africa Ltd	33	National Bank of Kenya Ltd
13	Consolidated Bank of Kenya Ltd	34	N.I.C Bank Ltd
14	Cooperative Bank of Kenya Ltd	35	Oriental Commercial Bank Ltd
15	Credit Bank Ltd	36	Paramount Universal Bank Ltd
16	Development Bank of Kenya Ltd	37	Prime Bank Ltd
17	Diamond Trust Bank of Kenya Ltd	38	Southern Credit Corporation Ltd
18	Dubai Bank Ltd	39	Stanbic Bank Kenya Ltd
19	Equatorial Commercial Bank Ltd	40	Standard Chartered Bank (K) Ltd
20	Equity Bank Ltd	41	Trans-National Bank Ltd
21	Family Finance Bank	42	Victoria Commercial Bank Ltd

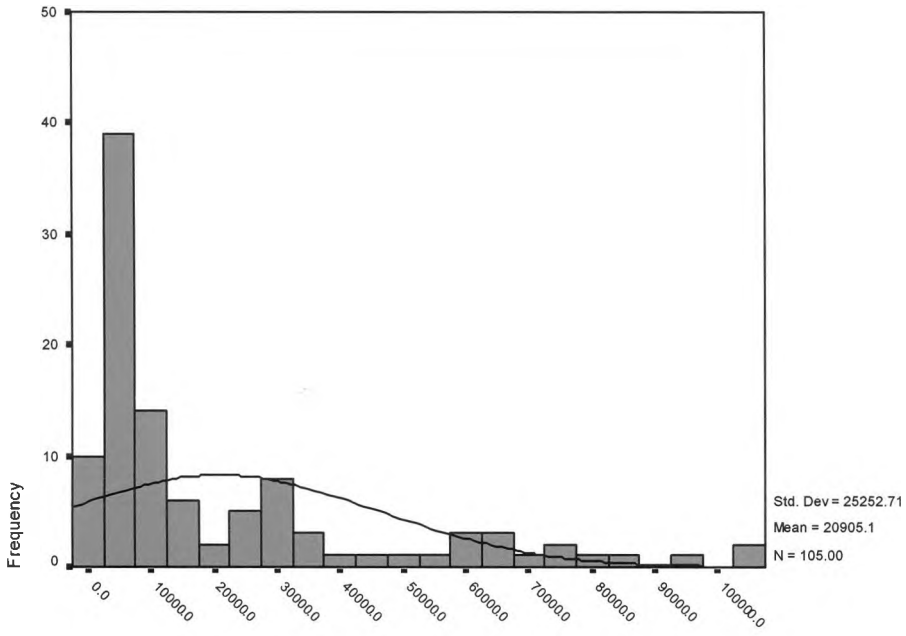
Appendix (ii) Institutions under Liquidation

NAME OF INSTITUTION		LIQUIDATION DATE
1	Inter-Africa Credit & Finance Ltd	31 January 1993
2	International Finance Ltd	16 April 1993
3	Central Finance Ltd	19 May 1993
4	Post bank Credit Ltd	20 May 1993
5	Trade Bank Ltd	18 August 1993
6	Trade Finance Ltd	18 August 1993
7	Middle Africa Finance Ltd	20 August 1993
8	Diners Finance Ltd	20 August 1993
9	Nairobi Finance Ltd	20 August 1993
10	Allied Credit Ltd	20 August 1993
11	Pan-African Bank Ltd	18 August 1994
12	Pan-African Credit & Finance Ltd	18 August 1994
13	Thabiti Finance Ltd	19 December 1994
14	Meridien Biao Bank Ltd	15 April 1996
15	Heritage Bank Ltd	13 September 1996
16	Kenya Finance Bank Ltd	29 October 1996
17	Ari Bank Corporation Ltd	05 December 1997
18	Prudential Bank Ltd	05 May 2000
19	Reliance Bank Ltd	12 September 2000
20	Fortune Finance Ltd	14 September 2000
21	Trust Bank Ltd	15 August 2001
22	Euro Bank Ltd	21 February 2003
23	Prudential Building Society	18 January 2005
24	Daima Bank Ltd	13 June 2005

Appendix (iii) Normality Tests

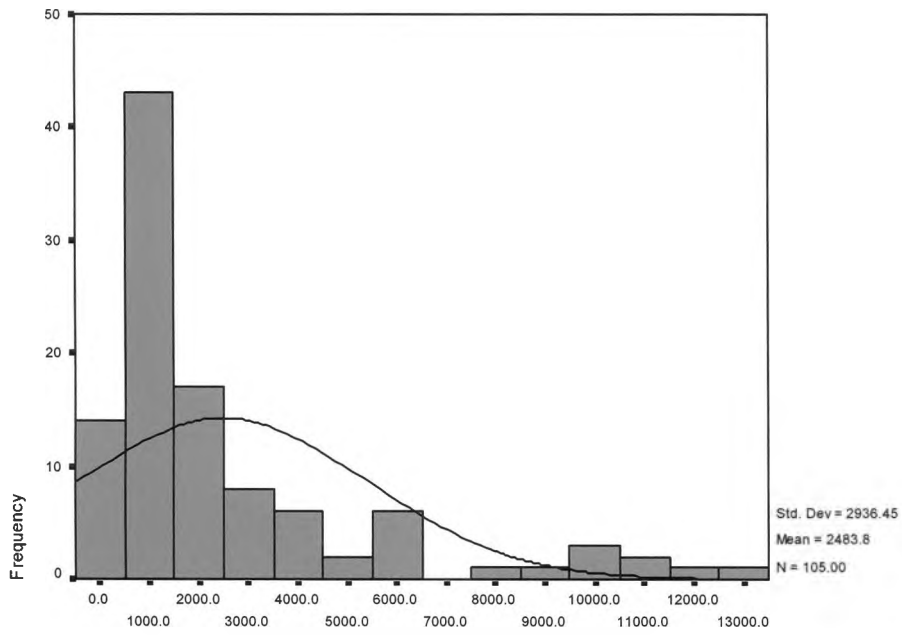


Total Assets



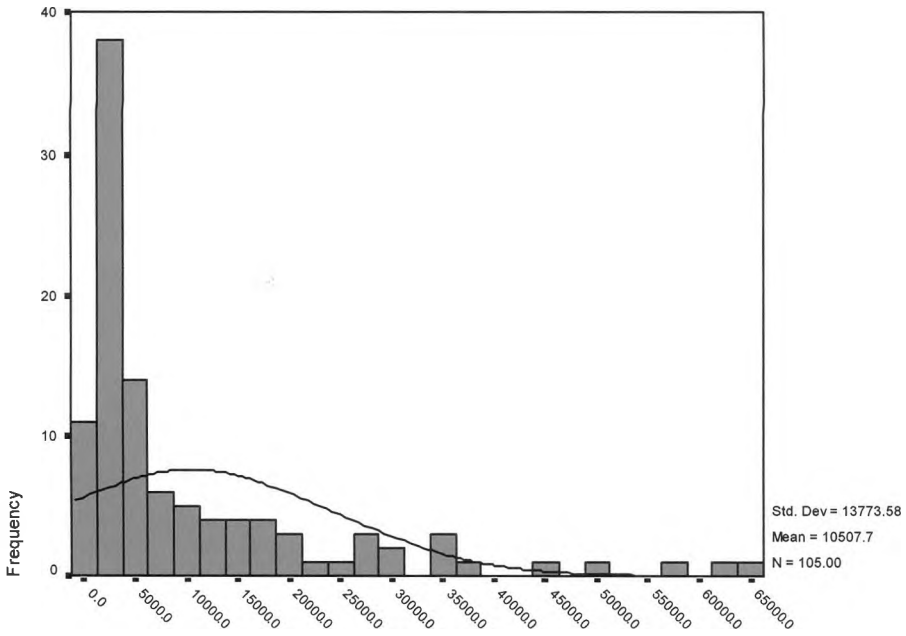
Total Assets

Total Equity



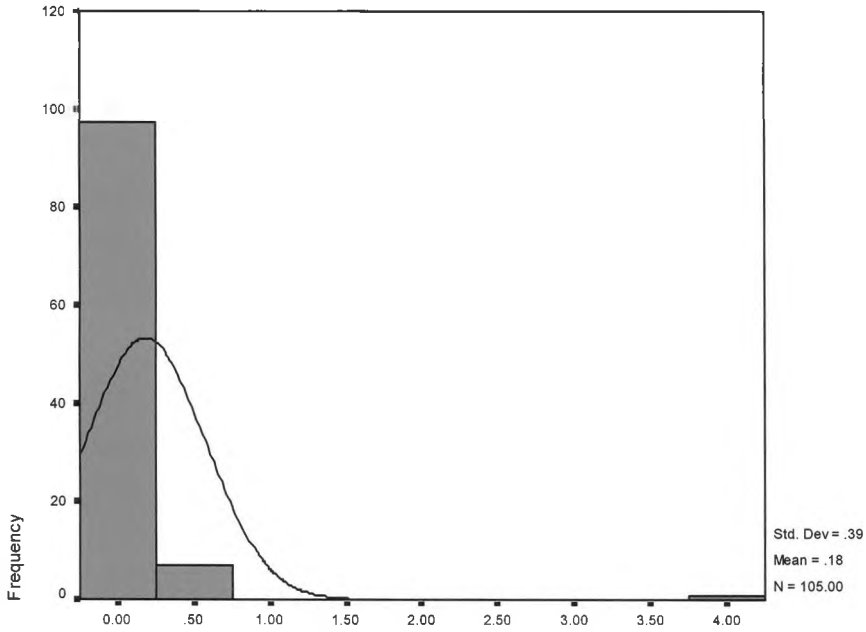
Total Equity

Total Loans



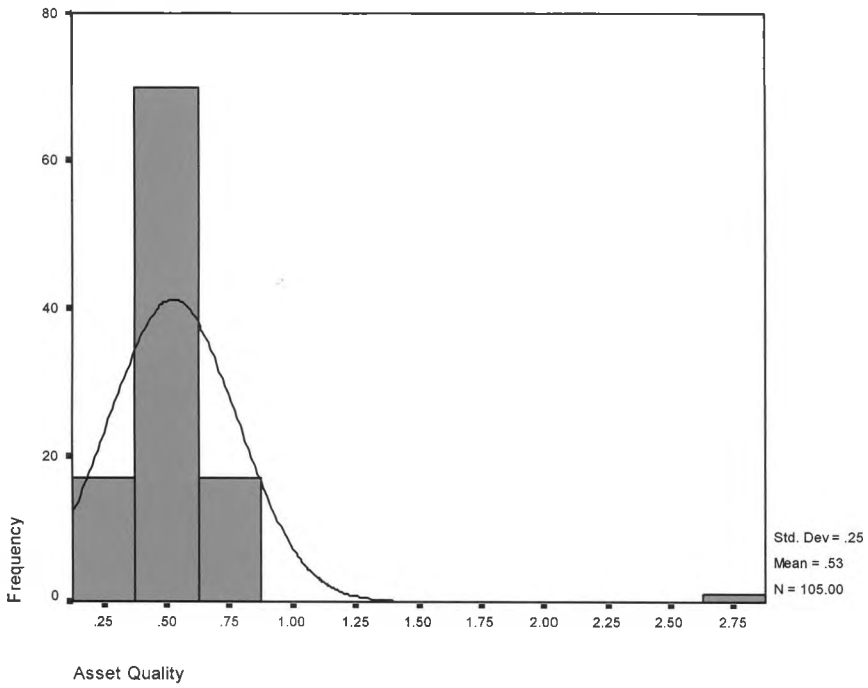
Total Loans

Capital Adequacy

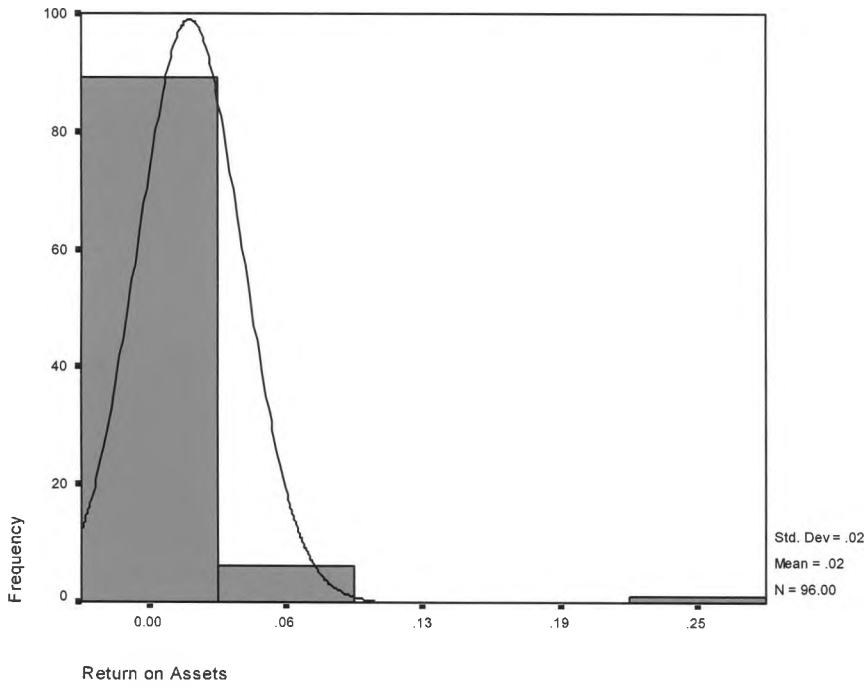


Capital Adequacy

Asset Quality



Return on Assets



Bank Failure

