

**THE RELATIONSHIP BETWEEN LOAN PORTFOLIO COMPOSITION AND
FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA**

BY

MURIRA MURIUNGI MOSES

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SUPERVISOR: ANGELA KITHINJI

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DECLARATION

STUDENT'S DECLARATION

I declare that this is my original work and has not been presented for a degree in any other university.

Sign:

Date:

MURIRA MURIUNGI MOSES

D61/70271/2009

SUPERVISOR'S DECLARATION

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

Sign:

Date:

ANGELA KITHINJI

LECTURER UNIVERSITY OF NAIROBI

DEDICATION

This study is dedicated to my loving family, for their support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course.

May God bless you all.

ACKNOWLEDGEMENT

I wish to express my sincere appreciation to my family for their understanding and support during the project.

I would also like to express my sincere thanks to the supervisor for having agreed to supervise this research paper and her patience in reading the drafts and occasionally guiding me, without which the research would not have been a reality.

Lastly I thank Almighty God for his guidance and providence which enabled me to undertake this project that was too involving in term of time and resources.

ABSTRACT

Lending has been, and still is, the mainstay of banks' business, and this is more true to emerging economies like Kenya where capital markets are not yet well developed. To most of the transition economies, however, and Kenya in particular, lending activities have been controversial and a difficult matter. This is because business firms on one hand are complaining about lack of credits and the excessively high standards set by banks, while lending commercial banks on the other hand have suffered large losses on bad loans.

The purpose of the study is to determine the relationship between loan portfolio and financial performance of commercial banks in Kenya. For the purposes of this study, the researcher used causal research design. The target population composed of 43 commercial banks in Kenya (CBK Handbook, 2008). The population of interest of this study was selected using simple random sampling method to come up with a sample size of thirty (30) commercial banks. For the purpose of this study, the researcher mainly used secondary data involved the collection and analysis of published material and information from other sources such as annual reports, published data. The study thus used inferential statistics in the data analysis whereby correlation, collinearity and logistic regression models were used.

From the findings, the study concludes that there exists a relationship between loan portfolio and financial performance of commercial banks in Kenya as loan portfolios are the major asset of banks and other lending institutions. The study also concludes that every bank should strive to have the best loans mix as it was found that some types of loans (mortgage loans, business loans, government loans) have greater effects on financial performance of commercial banks. Therefore commercial banks should have a large percentage of mortgage loans, business loans and government loans compared to personal loans and educational loans to have the best loan portfolio mix for greater financial performance.

The study further recommends that for commercial banks to remain profitable they should have good portfolio management which will help in making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance. Portfolio management techniques in banks should focus more on strategic issues for a portfolio of projects and the ability to achieve strategic objectives.

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LIST OF ABBREVIATION

BCG	-	Boston Consulting Group
CAPM	-	Capital Asset Pricing Model
CBK	-	Central Bank of Kenya
DEA	-	Data Envelopment Analysis
ETFs	-	Exchange-Traded Funds
IT	-	Information Technology
LPM	-	Loan Portfolio Management
MFI	-	Microfinance Institution
MPT	-	Modern Portfolio Theory
NSE	-	Nairobi Stock Exchange
NTOs	-	National Organizations
PAR	-	Portfolio at Risk
ROA	-	Return On Assets
ROE	-	Return On Equity
SPSS	-	Statistical Package of Social Sciences

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Loan portfolio which constitutes a large proportion of the assets in most banks is relatively illiquid and exhibits the highest credit risk (Koch and MacDonald, 2000). The largest source of risk for any financial institution resides in its loan portfolio. Loan portfolio is ideally expected to be the schemes' largest asset. It should also be noted that since most small firms financing is not supported by bankable collateral, the quality of the loan portfolio is absolutely crucial.

Lending is the principal business activity for most commercial banks. The loan portfolio is typically the largest asset and the predominate source of revenue (Morsman, 2003). As such, it is one of the greatest sources of risk to a bank's safety and soundness. Whether due to lax credit standards, poor portfolio risk management, or weakness in the economy, loan portfolio problems have historically been the major cause of bank losses and failures. Effective management of the loan portfolio and the credit function is fundamental to a bank's safety and soundness.

For decades, good loan portfolio managers have concentrated most of their effort on prudently approving loans and carefully monitoring loan performance. Although these activities continue to be mainstays of loan portfolio management, analysis of past credit problems, such as those associated with oil and gas lending, agricultural lending, and commercial real estate lending in the 1980s, has made it clear that portfolio managers should do more (Von Stauffenberg, 2002). Traditional practices rely too much on trailing indicators of credit quality such as delinquency, nonaccrual, and risk rating trends. Banks have found that these indicators do not provide sufficient lead time for corrective action when there is a systemic increase in risk.

Effective loan portfolio management begins with oversight of the risk in individual loans. Prudent risk selection is vital to maintaining favorable loan quality. Therefore, the historical emphasis on controlling the quality of individual loan approvals and managing the performance of loans continues to be essential. But better technology and information systems have opened the door to better management methods. A portfolio manager can now

obtain early indications of increasing risk by taking a more comprehensive view of the loan portfolio (Wyman, 2000).

In order to represent credit risk more truthfully for purposes of mitigating the internal ratings based capital charge, private placements with other financial institutions would no longer warrant major involvement of rating agencies. Hence, banks might be in the position to do without rating agencies in conducting securitization transactions to fine-tune the composition of the loan portfolio (Quach, 2005). The dependence of profitable asset securitization on the acquisition of off the shelf loans does inevitably bias financial institutions into altering the composition of their loan book for purposes of cost efficient asset funding. The illiquid nature of customized loan contracts coupled with higher information cost, non-standardization will carry a premium compared to standardized credits, even if the risk involved is the same.

To manage their portfolios, bankers must understand not only the risk posed by each credit but also how the risks of individual loans and portfolios are interrelated. These interrelationships can multiply risk many times beyond what it would be if the risks were not related. Until recently, few banks used modern portfolio management concepts to control credit risk. Now, many banks view the loan portfolio in its segments and as a whole and consider the relationships among portfolio segments as well as among loans. These practices provide management with a more complete picture of the bank's credit risk profile and with more tools to analyze and control the risk (Athanasoglou et al, 2005).

Measures of financial performance according to Copisarow, (2000) are subjective measures of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

Banks' financial performance is undoubtedly coming under pressure from higher impairment charges, linked to a deterioration in asset quality (partly due to high rates of loan loss provisioning, typically more than 100% of loans in arrears more than 30 days), stagnant/negative loan portfolio growth and higher funding costs. Absence of loan growth in an environment of reduced new lending (driven by lower demand but also by banks' more stringent lending criteria) can be quite rapid for banks, given that the majority of their loans

are annuity loans with monthly principal repayments, although this acts as an important source of internally generated liquidity (Bobáková, 2003).

Financial performance is the single most important factor in assessing growth potential, earnings capacity and overall financial strength (Richardson, 2002). The financial structure of the financial institutions is evaluated using the following two accounting ratios namely; net loans to total assets which measures the percentage of total assets invested in the loan portfolio where the desired level for this ratio is between 70 and 80 per cent and; non-financial investments to total assets which measures the percentage of total assets in non-financial investments (Richardson, 2002).

A firm's financial affiliation could have positive or negative effects on its profitability. On the positive side, Hubbard and Palia (1999) and Khanna and Palepu (2000) are of the view that firms affiliated with business groups have advantages over independent firms through intragroup trading and internal capital markets, especially in less developed economies. Also, through diversification, business groups can reduce risk and uncertainty in firm operations. Furthermore, a business group can exploit its large size to borrow money at a lower cost (Joh, 2003). But, on the negative side, Lamont (1997) and Scharfstein and Stein (2000) argue that multi-divisional firms sometimes overinvest capital in weak divisions and under-invest it in stronger ones; and this adversely affects the profitability of the entire business group. Firms associated with business groups can also suffer greatly, as their controlling shareholders have the tools to divert firm resources through the transfer of assets from one subsidiary to another. Controlling shareholders of firm groups can move away resources for their private benefits by means such as self-dealing, as well as divert resources from one subsidiary in which they own less to firms in which they own more. The end result is inefficient investments and reduced profitability of the entire business group.

The uncertainties present in today's economic and financial environment pose complex challenges for commercial banks and financial institutions. The credit crunch, political instability and contradictory regulations create a difficult playing field that requires corporate strategies that can adjust to rapidly changing circumstances. Normally, there would be a wide range of opportunities for investors to contribute to and benefit from various restructuring options, custom-tailored transactions, rehabilitation techniques and solutions for such distressed assets (Bobáková, 2003).

In the current environment, problems in the finance sector and the growing stock of non-performing loans do not affect individual banks only. All market players can pay a heavy price. If left unresolved, these troubles can cut off the corporate sector from financial capital, thereby hampering economic recovery. Until overall corporate profitability and returns on investment recover from the downturn, the chances for banks to revitalize their portfolios through economically viable projects are slim.

The Companies Act, the Banking Act, the Central Bank of Kenya Act and the various prudential guidelines issued by the Central Bank of Kenya (CBK), governs the Banking industry in Kenya. The banking sector was liberalised in 1992 and exchange controls lifted. The CBK, which falls under the Minister for Finance's docket, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. The CBK publishes information on Kenya's commercial banks and non-banking financial institutions, interest rates and other publications and guidelines. The banks have come together under the Kenya Bankers Association (KBA), which serves as a lobby for the banks' interests and addresses issues affecting its members (Kenya Bankers Association annual Report, 2008).

There are forty-three commercial banks and non-bank financial institutions, fifteen micro finance institutions and forty-eight foreign exchange bureaus in Kenya. Thirty-five of the banks, most of which are small to medium sized, are locally owned (Central Bank of Kenya annual report 2008). The industry is dominated by a few large banks most of which are foreign-owned, though some are partially locally owned. Nine of the major banks are listed on the Nairobi Stock Exchange. The commercial banks and non-banking financial institutions offer corporate and retail banking services but a small number, mainly comprising the larger banks, offer other services including investment banking, insurance services and custodial services among others. Banks earn financial revenue from loans and other financial services in the form of interest fees, penalties, and commissions. Financial revenue also includes income from other financial assets, such as investment income.

1.2 Statement of the Problem

Lending has been, and still is, the mainstay of banks' business, and this is more true to emerging economies like Kenya where capital markets are not yet well developed. To most of the transition economies, however, and Kenya in particular, lending activities have been

controversial and a difficult matter. This is because business firms on one hand are complaining about lack of credits and the excessively high standards set by banks, while banks on the other hand have suffered large losses on bad loans (Richard, 2006).

Bankers and examiners have been alert to aggressive financial goals because they generally require high growth and increased risk-taking (Morsman, 2003). Banks typically assess their financial performance using measurements such as earnings, return on equity, and return on assets. Financial performance also considers the relationship between risk and return. Banks assess the risk/return relationship at both the individual loan and portfolio level. While more sophisticated loan pricing models include multiple factors to differentiate risk, smaller banks can get acceptable results with basic models relating a few variables loan income to capital. Banks increasingly are measuring the financial performance of loan portfolios by their risk-adjusted returns (Koch and MacDonald, 2000).

As reported by Boucher (1996), banks focus on underwriting, product engineering, distribution and trading of structured finance products through the active use of credit derivatives in order to achieve favorable tax and regulatory treatment of their loan portfolio that would enable them to achieve high profitability levels. On the other hand, Laurin and Majnoni, (2003) point out that securitization is only one way to address more sophisticated credit risk management in banks that would see them improve their financial performance. Therefore there is no established loan portfolio composition that can result in high financial performance.

Locally, studies focusing on loan portfolio and financial performance of banks have been conducted. Ngene (2002) did an empirical investigation into portfolio performance measures by pension fund managers and the challenges they face in portfolio management in Kenya. Maina (2003) carried out a research on the risk based capital standards and the riskiness of bank portfolios in Kenya. Obusubiri (2006) conducted a study on corporate social responsibility and portfolio performance at the NSE, while Mbote (2006) did a research on the relationship between the type of mortgages and the level of non-performing loan portfolio in the mortgage companies in Kenya. None of these local studies has focused on the relationship between loan portfolio and financial performance in commercial banks in Kenya. This is despite the fact that many banking institutions have collapsed in Kenya due to poor loan portfolio procedures that affected their financial performance (Waweru & Kalani, 2009).

This research focuses on the relationship between loan portfolio and financial performance of commercial banks in Kenya as a modest attempt to bridge the research gap in this field.

1.3 Objectives of the Study

The objective of the study is to determine the relationship between loan portfolio and financial performance of commercial banks in Kenya.

1.4 Significance of the Study

The study will be beneficial to commercial bank managers as its focus is on loan portfolio as a credit risk management practice which is the core factor of profitability for many banks.

The study will contribute to the broader realm of business. In business, through its recommendations, the study will add value to better credit management practices in businesses and service quality.

In academia, the study will add value to academic research in the broader area of credit management. Future researchers will not only use this study as a form of reference for future studies, but also suggest future research activities that can be explored.

The study will contribute to shareholders confidence in the management of loans portfolio which normally affect their investment return and overall profitability of the banks.

The outcome of the study will enable the regulators of banking institutions devise better policies in regards to lending and supervision on credit creation.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter, the researcher discusses what other authors have found out in regard to loan portfolio and financial performance. Only the issues in the objectives will be addressed, critically reviewed and discussed.

2.2 Portfolio Management

Definitions of portfolio management are wide and diverse. Several names for the same understanding of portfolio management exist, and terms such as program management and multi-project management are frequently used. Portfolio management is a discipline in which combined projects, to a certain extent, utilize the same management, where issues stretch beyond the scope of the project, and where interdependencies not manageable by a single project are to be managed by a portfolio head or “boss of projects” (Olsson 2005). Additionally, the author acknowledges the broad view of Elonen and Arto (2003) that portfolio management includes aspects of both portfolio and program management.

Lycett *et al.* (2004) describe portfolio management as focusing more on strategic issues for a portfolio of projects and the ability to achieve strategic objectives. Clearly there is a need for a shift in focus for risk management in a portfolio environment. Hillson (2004) and Ward and Chapman (2003) also highlight the importance of including the management of opportunities in any portfolio management process. It is suggested that two areas are of importance when describing the implications for today's management of risk and opportunities in a project organization when handling several projects simultaneously. The first implication regards the existing risk management processes, and the second implication regards the wider scope of project portfolio management than that of single project management.

According to Hillson (2004), portfolio management is the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance. In the case of mutual and exchange-traded funds (ETFs), there are two forms of portfolio management: passive and active. Passive management simply tracks a market index, commonly referred to as indexing or index investing. Active management involves a single manager, co-managers, or a team of managers who attempt to beat the market return by actively managing a fund's portfolio

through investment decisions based on research and decisions on individual holdings (Elonen and Artto, 2003).

The earliest Portfolio Management techniques optimized projects' profitability or financial returns using heuristic or mathematical models. However, this approach paid little attention to balance or aligning the portfolio to the organization's strategy (Lycett *et al.* 2004). Scoring techniques weight and score criteria to take into account investment requirements, profitability, risk and strategic alignment. The shortcoming with this approach can be an over emphasis on financial measures and an inability to optimize the mix of projects. Mapping techniques use graphical presentation to visualize a portfolio's balance. These are typically presented in the form of a two-dimensional graph that shows the trade-off's or balance between two factors such as risks versus profitability, marketplace fit versus product line coverage and financial return versus probability of success, (Olsson 2005).

Loan policy should designate who is accountable for the accuracy of risk ratings. The account officer is a logical choice because he or she knows more about the credit than anyone else and should have access to timely financial information from the borrower. Assigning the account officer risk rating responsibility heightens his or her accountability for credit quality and has derivative benefits for loan approvals and account management. Some banks assign risk rating responsibility to a credit officer, loan review officer, or a more senior bank officer. While these officers may be more objective and experienced, they may be less sensitive to subtle changes in the borrower's condition, and their ratings changes may be less timely. Perhaps most important, making someone other than the account officer accountable may diminish his or her sense of responsibility for identifying and controlling credit risk (WTO, 1996a).

Small banks can also outsource the evaluation. Whatever system is selected, it should reflect the complexity and size of the portfolio and be independent of the lending function. Determining the mix of assets to hold in a portfolio is referred to as portfolio management. A fundamental aspect of portfolio management is choosing assets which are consistent with the portfolio holder's investment objectives and risk tolerance. The ultimate goal of portfolio management is to achieve the optimum return for a given level of risk. Investors must balance risk and performance in making portfolio management decisions. Portfolio management strategies may be either active or passive. An investor who prefers passive portfolio

management will likely choose to invest in low cost index funds with the goal of mirroring the market's performance. An investor who prefers active portfolio management will choose managed funds which have the potential to outperform the market. Investors are generally charged higher initial fees and annual management fees for active portfolio management. There is the practice of a money manager or a team of money managers making investment decisions on what securities to include in a mutual fund or portfolio (Harrel and Keifer, 1993). Sometimes active management exists within certain parameters; for example, money managers may only buy blue-chip stocks for a certain fund and growth stocks for another. The basic premise of active management, however, states that the managers can maximize the return for investors by buying or selling securities on a fairly regular basis.

2.3 Portfolio Analysis

According to Perdue (1996) the need to segment and to select target markets for a destination is obvious given that marketing resources are generally limited and the costs in terms of external markets are particularly high. In 1995, national organizations (NTOs) intensified their promotional activities, spending US\$1.17 million on promotion. In spite of this enormous investment, their efforts were considered insufficient to cover the variety and the increasingly wide segmentation of demand (WTO, 1996a). Rita and Moutinho (1992) refer to the fact that the segmentation of potential tourist markets has numerous benefits for public organizations, including the avoidance of an imbalance in the attribution of marketing budgets, therefore allowing NTOs to maximize the impact of their promotional efforts.

Segmentation of the market is also important in order to be able to determine differences which are useful in selecting target markets. Determining the priority market (or markets) means that competitors can be identified and so it reduces the pressure of competition which would prevail if the destination were to offer the same products and services to the same market segments as the competition (Teare et al., 1994). Furthermore it allows NTOs to become better acquainted with the characteristics and the profile of actual and potential market segments for a particular destination and so to define a marketing mix (policies of product, price, distribution and promotion) which is suitable for each segment. In this way it is possible to establish a correspondence between what the destinations has to offer and what the market seeks, that is, to develop a portfolio of products which is suited to the portfolio of markets (Middleton, 1994; Bojanic and Warnick, 1995).

It can be argued then, that the portfolio analysis of the markets served by a destination is a tool of vital importance for both public and private organizations, since a knowledge of the workings of the markets and of the competition faced facilitates decision making regarding the selection of priority market segments, the positioning of the destination and the devising of marketing strategies. However, the user of the portfolio analysis should take into account that different models sometimes lead to different recommendations (Calantone and Mazanec, 1991). The analysis should therefore not be seen as a strategic solution, which could result in errors or even function as a strait-jacket, but rather as a diagnostic tool (Heath and Wall, 1992; Segev, 1995).

Harrel and Keifer (1993) state that strategic planning tools tend to focus on products as the main unit of strategic endeavour, but argue that it is more useful to take decisions based on market portfolios due to the shifting nature of the international market. In the industry, the prediction of changes in tourist generating markets and a sound knowledge of the competition could be determining factors in the survival of a tourist destination. Thus it is necessary to diagnose and strategically assess the market segments served by the destination which can be achieved through a market portfolio analysis.

Calantone and Mazanec (1991) argue that portfolio models, although not frequently used in management, can indeed be adapted for non-profit-making organizations in the sector. However, according to McKercher (1995), none of the existing models for portfolio analysis is entirely applicable to the unique needs of strategic marketing, since they are oriented towards the product rather than towards the market.

A destination portfolio consists of a set of visitor segments from various generating countries which, in conventional terminology, corresponds to markets (Calantone and Mazanec, 1991). The criterion of geographical segmentation is implicit in this definition. Indeed this method of segmentation is common to many studies on the application of portfolio analysis to tourist destinations, due to the advantages that geographical segmentation by country of origin has in terms of available data (Perdue, 1996; Faulkner, 1997).

When carrying out a portfolio analysis, the objectives of the study should be clearly identified and defined, as this is crucial to the quality of the results (Segev, 1995). In the models of portfolio analysis applied to tourist destinations the unit of analysis is the destination itself, which may be a country (Henshall and Roberts, 1985; Calantone and Mazanec, 1991;

McKercher, 1995; Faulkner, 1997), a region (McKercher, 1995; Perdue, 1996) or a city (Mazanec, 1995).

The BCG matrix (the first model of portfolio analysis, developed by the Boston Consulting Group) can be adapted to and used to analyse tourist markets (Heath and Wall, 1992). Calantone and Mazanec (1991) apply this model in their market portfolio analysis for two tourist destinations (Italy and Austria). Perdue (1996) adapts it and proposes a Market Classification System based on actual sales (vertical axis) and the development of potential sales (horizontal axis).

McKercher (1995) argues that the BCG model was not designed to assess the performance of an organization's markets. The simplicity of this model has led many managers to employ multifactorial models, where the vertical/external axis and the horizontal/internal axis are defined by a series of factors/variables relating to the markets, the destination and the competition (Harrel and Kiefer, 1993).

Henshall and Roberts (1985) apply the Industry Attractiveness Analysis (a model developed by McKinsey/GE) to the industry in order to assess the attractiveness of -generating countries for New Zealand and the competitive position of this destination. The same axes are used by Mazanec (1995) applied in his analysis of the strategic position of tourist cities. Papadopoulos (1989) proposes the use of market attractiveness as the external axis and NTO resource availability as the internal axis for the Tourist Market Choice Matrix.

McKercher (1995) claims that the existing portfolio models do not totally reflect the dynamic relationship between a destination and its market portfolio, and defines the prediction of market growth as external axis of the matrix and the stage of the life cycle of the market segments as the internal axis. Like products, markets evolve through a life cycle which is determined by the level of knowledge that the tourists have of the destination. Thus a destination can have a portfolio of markets in different phases of their respective life cycles.

Heath and Wall (1992) draw attention to the fact that the stability of the product life cycle is implicit in some portfolio models. However, those who use a market portfolio in should consider a dynamic model in opposition to the implications of a static model, as markets and competition are constantly changing (Papadopoulos, 1989). Henshall and Roberts' (1985) study shows that a portfolio can easily be adapted to reflect the developments of markets over

time. The authors place three distinct periods of time in the matrix: the past, the present and the future. The calculations for the past are made based on the conditions of five years before and the projection into the future is based on estimations of the position of the destination in five years' time.

It can be concluded that portfolio analysis is a tool which allows a tourist destination to compare various market segments and so serves to evaluate its competitive position for the present and the future. Despite the methodological differences evident in previous studies applied to (in terms of the method of selection of the factors involved, the number of factors considered, the method of calculation of the importance of the factors and the type of matrix used), they all have something in common; the analysis of the individual performance of generating markets. The main objectives are the identification of the markets with the best potential and the selection of priority market segments (Henshall and Roberts, 1985; Mazanec, 1995).

2.4 Loan Portfolio

2.4.1 Loan Portfolio Mix

The lifeblood of each lending institution is its loan portfolio, and the success of the institution depends on how well that portfolio is managed. Loans that have been made or bought and are being held for repayment. Loan portfolios are the major asset of banks and other lending institutions. The value of a loan portfolio depends not only on the interest rates earned on the loans, but also on the quality or likelihood that interest and principal will be paid (Luenberger 1993).

Because of the size of the loan portfolio, effective management of liquidity risk requires that there be close ties to, and good information flow from, the lending function. Obviously, loans are a primary use of funds. And while controlling loan growth has always been a large part of liquidity management, historically the loan portfolio has not been viewed as a significant source of funds for liquidity management (Rabin and Thaler 2001). Practices are changing, however. Banks can use the loan portfolio as a source of funds by reducing the total dollar volume of loans through sales, securitization, and portfolio run-off.

Banks offer portfolios of business and corporate loans as well as personal loans, including auto and credit card loans. Bank loans may be described by type, purpose, and maturity. Bank

loans are priced according to the bank's cost of funds plus a premium for the credit of the borrower and the maturity of the loan. In addition there are some upfront fees called origination or processing fees that must be paid. In addition, there are commitments for loans that may never be drawn called lines of credit. Bank loans are usually variable rate loans that change as the bank's cost of funds varies. These loans are reset on a regular quarterly or monthly basis.

2.4.2 Types of Bank Loans

There are many types of bank loans represent the bulk of a bank's earnings. The main types of loans offered by banks are personal loan, business loan, government loan, mortgage loans, educational loans and international loans. All banks, especially local, community banks offer Personal Loan Portfolio, which is loan for personal use. Personal loans are a type of loan guaranteed by an individual. Personal loans usually refer to the type of loan necessary to consolidate many smaller debts, for minor home improvements, college and home repair, automobile purchase, house improvements and additions. For excellent bank customers, an unsecured line of credit may be possible with high fees for their use. Credit card loans are also part of a bank personal loan portfolio. The key issue is the source of payment. Usually this is the guarantee of the individual and possibly collateral from the product purchased.

All banks in addition have business loan portfolios. Types of business loans include lines of credit for cash flow needs such as payroll and taxes, loans for expansion including purchasing buildings, equipment and materials, and loans for trade guaranteed by the receipts of the products shipped. Business loans are by far the most important type of loan source for medium and large banks. Business loans may also be extended for government assisted programs such as the Small Businesses. Business loans are almost always guaranteed by a source of collateral such as a mortgage on a building purchased and perhaps the guarantee of the company and even key employees of the company.

Government loan portfolios may be made to state and local authorities and indirectly to the federal government through the purchase of treasury bills, notes, and bonds. Loan types include basic governmental functions such as water and sewer projects, state and county maintenance, construction and payroll. This type of loan origination is usually in the 5 to 15 year range with regularly scheduled payments of interest and principal. Often, depending on the size of the loan a consortium of banks and other lenders may participate. If the bonds are

declared as tax exempt from federal taxes the bank may treat the loan as a type of municipal bond loan. Loans to non-profit organizations would also be considered as a type of government loan portfolio.

The banks also have mortgage loans portfolios for their customers. Many banks have a business unit dealing with assets financing which includes housing and assets mortgages. The banks also have educational loans portfolios where many banks promote education as an important factor in the economic development through advancing loans to finance higher education.

Large international banks have international loans portfolios where they lend to international organizations, corporate entities, and other countries. This type of loan is usually large and complex in nature. The bank must take on credit risk and currency risk unless the loan is denominated in dollars. Loan purposes are for development and cash flow and usually mature in no more than ten years. These are lucrative loans because only a few institutions are large enough to mediate the risk involved.

In fact, banks are taking a more active role in managing their loan portfolios. While these activities are often initiated to manage credit risk, they have also improved liquidity. Banks increasingly are originating loans “for sale” or securitization. Consumer loans (mortgages, instalment loans, and credit cards) are routinely originated for immediate securitization. Many larger banks have been expanding their underwriting for the syndicated loan market (Krapfel *et al.* 1991). Additionally, banks are also expanding the packaging and sale of distressed credits and otherwise undesirable loans.

As part of liquidity planning, a bank’s overall liquidity strategy should include the identification of those loans or loan portfolio segments that may be easily converted to cash. A loan’s liquidity hinges on such characteristics as its quality, pricing, scheduled maturities, and conformity to market standards for underwriting. Loans are also a source of liquidity when used as collateral for borrowings (Shapiro *et al.*, 1987). The ease with which a bank can participate or sell loans to other lenders or investors (and the terms on which the bank can do so) will vary with market conditions, the type of loan, and the quality of loan. Information provided for liquidity analysis should include an assessment of these variables under various scenarios.

Portfolio management is a continuous process that must include analysis of how business results were achieved, whether such results will continue, and how the institution can maximize its opportunities and provide the greatest benefits to its members (Shapiro *et al.*, 1987). Because of the inherent risks in lending and the System's statutory limitations on lending authorities, each institution must effectively manage the loan portfolio.

2.5 Loan Portfolio Management

Lending is the principal business activity for most commercial banks. The loan portfolio is typically the largest asset and the predominate source of revenue. As such, it is one of the greatest sources of risk to a bank's safety and soundness. Whether due to lax credit standards, poor portfolio risk management, or weakness in the economy, loan portfolio problems have historically been the major cause of bank losses and failures. Effective management of the loan portfolio and the credit function is fundamental to a organization's safety and soundness. Loan portfolio management (LPM) is the process by which risks that are inherent in the credit process are managed and controlled, (Royal Society (1992). Because review of the LPM process is so important, it is a primary supervisory activity.

Assessing LPM involves evaluating the steps bank management takes to identify and control risk throughout the credit process. The assessment focuses on what management does to identify issues before they become problems. The guideline prepared for the benefit of both examiners and bankers, discusses the elements of an effective LPM process. It emphasizes that the identification and management of risk among groups of loans may be at least as important as the risk inherent in individual loans. For decades, good loan portfolio managers have concentrated most of their effort on prudently approving loans and carefully monitoring loan performance (Scharfstein, Stein 2000). Although these activities continue to be mainstays of loan portfolio management, analysis of past credit problems, such as those associated with oil and gas lending, agricultural lending, and commercial real estate lending in the 1980s, has made it clear that portfolio managers should do more.

Traditional practices rely too much on trailing indicators of credit quality such as delinquency, nonaccrual, and risk rating trends. Banks have found that these indicators do not provide sufficient lead time for corrective action when there is a systemic increase in risk. Effective loan portfolio management begins with oversight of the risk in individual loans. Prudent risk selection is vital to maintaining favorable loan quality. Therefore, the historical

emphasis on controlling the quality of individual loan approvals and managing the performance of loans continues to be essential. But better technology and information systems have opened the door to better management methods. A portfolio manager can now obtain early indications of increasing risk by taking a more comprehensive view of the loan portfolio. To manage their portfolios, bankers must understand not only the risk posed by each credit but also how the risks of individual loans and portfolios are interrelated (Papadopoulos, 1989).

These interrelationships can multiply risk many times beyond what it would be if the risks were not related. Until recently, few banks used modern portfolio management concepts to control credit risk. Now, many banks view the loan portfolio in its segments and as a whole and consider the relationships among portfolio segments as well as among loans. These practices provide management with a more complete picture of the bank's credit risk profile and with more tools to analyze and control the risk. In 1997, the OCC's Advisory Letter 97-3 encouraged banks to view risk management in terms of the entire loan portfolio (Calantone and Mazanec, 1991). This letter identified nine elements that should be part of a loan portfolio management process. These elements complement such other fundamental credit risk management principles as sound underwriting, comprehensive financial analysis, adequate appraisal techniques and loan documentation practices, and sound internal controls.

Portfolio management theory seeks to make the most of risk-adjusted returns and take full advantage of portfolios through evaluation, diversification, and other asset management strategies. Financial management is one of the most common areas of application of portfolio management theory. Portfolio management theory helps investment managers to create a portfolio of investments to meet the current financial goals of the company. One of the fundamental principles of portfolio management theory is to yield value to the business and manipulate existing value to enhance returns. It is a theory on how investors can construct portfolios with a view to optimize market risk and derive more returns from a business (McKercher, 1995).

Portfolio management is the process of defining portfolios, evaluating, tracking and studying portfolio performance, and reporting results to stakeholders. Portfolio management involves the balancing of risks and rewards for getting greater returns. Companies employ portfolio management for efficiently managing their resources. Portfolio management theory states

that every project should be analyzed for risks involved and the returns expected. Successfully applying the portfolio management theory in practice helps an IT company to accept projects having lesser size and complexity, while the success rate and returns are more. The core principle of portfolio management theory is diversification. Many IT companies risk a major part of their budget on huge projects, without making a proper risk analysis (Papadopoulos, 1989). These projects eat up whole lot of funds. They also result in late schedules and missed delivery dates. In case projects are cancelled midway, a good part of the investment is lost and the company loses its credibility. A company that accepts many smaller and closely evaluated projects stands to gain more. Portfolio management theory holds that investors concerned with wealth management have to turn to alternative investments.

For any organization, the loan portfolio represents the largest and most important asset. Sustainability of the institution requires ensuring that portfolio quality remains high. Failure to do so can lead to costly loan losses and loss of revenue on non-performing loans, and threaten the financial viability of the institution. Portfolio analysis helps Organizations ensure that clients are timely with their payments, making them better prepared to meet their obligations in more difficult circumstances. Strong portfolio quality and access to accurate portfolio information also makes an organization more resilient during a natural disaster. The ability to monitor and manage the loan portfolio is even more critical in the advent of a disaster. Thus the need to ensure that the MIS remains operational after the disaster has struck is critical (Papadopoulos, 1989).

Generally accepted standards offer Portfolio at Risk (PAR) as the best measure of portfolio quality for micro credit. In normal circumstances, if PAR is greater than 30 days exceeds 5 per cent, and then the organization must focus its attention on improving portfolio quality and recovering delinquent loans. There is an additional measure to assess portfolio quality. That is the provision expense ratio, which demonstrates the cost of provisioning for potential losses and the Loan Loss Reserve Ratio, which indicate expected future losses. All these indicators are useful tools for ongoing management of loan portfolio quality.

Natural disasters aggravate poorly performing portfolios. Several Organizations that suffered severe portfolio write-offs after natural disasters found that they had improved their portfolio management before the disaster; they could have reduced loss when the disaster occurred

(Harrel and Kiefer, 1993). This is because clients who are unable or unwilling to pay in normal times are less able or willing to pay in times of disaster. As clients find it difficult to make payments, it is likely that the portfolio will be affected.

2.6 Portfolio Theories

2.6.1 Modern Portfolio Theory (MPT)

Modern portfolio theory (MPT) is a theory of investment which tries to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully choosing the proportions of various assets. Although MPT is widely used in practice in the financial industry and several of its creators won a Nobel Prize for the theory, in recent years the basic assumptions of MPT have been widely challenged by fields such as behavioral economics (Sharpe, William 1964). MPT is a mathematical formulation of the concept of diversification in investing, with the aim of selecting a collection of investment assets that has collectively lower risk than any individual asset. That this is possible can be seen intuitively because different types of assets often change in value in opposite ways. For example, when prices in the stock market fall, prices in the bond market often increase, and vice versa. A collection of both types of assets can therefore have lower overall risk than either individually. But diversification lowers risk even if assets' returns are not negatively correlated—indeed, even if they are positively correlated. In conventional portfolio theory one typically seeks to minimize portfolio variance for a given expected portfolio return (Markowitz, 1991; Elton and Gruber, 1995). The centerpiece of this theory is the capital asset pricing model (CAPM) devised by Markowitz (1952). In spite of criticisms and ongoing concerns about its validity and testability, concepts in CAPM such as efficient frontier, security market lines, asset “betas” and so-on are still considered relevant and important in the selection and management of portfolios of assets. The key assumptions of Markowitz's Modern Portfolio Theory (MPT) (Markowitz, 1952) theory are that asset returns are normally distributed and that investors face a risk-return trade-off. It is widely accepted that most asset returns are non-normally distributed and this can be seen in the extreme tail risks in the current crisis and the long term capital management crisis in 1998. Such events are not covered adequately by a normal distribution function. In the property industry, most portfolio optimization practices ignore the normality assumption of asset returns. To complicate matters further, the short time series of property returns data

further compromises the stability of the estimated returns and covariance matrix. In portfolio literature such issues are referred to as estimation errors. Such deficiencies in the optimization methodology could provide statistically incorrect outputs, i.e. portfolio weights. The appeal of this paper is that it works around these shortcomings rather than ignoring them altogether.

More technically, MPT models an asset's return as a normally distributed (or more generally as an elliptically distributed random variable), defines risk as the standard deviation of return, and models a portfolio as a weighted combination of assets so that the return of a portfolio is the weighted combination of the assets' returns. By combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce the total variance of the portfolio return. MPT also assumes that investors are rational and markets are efficient. MPT was developed in the 1950s through the early 1970s and was considered an important advance in the mathematical modeling of finance. Since then, many theoretical and practical criticisms have been leveled against it (Harrel and Kiefer, 1993). These include the fact that financial returns do not follow a Gaussian distribution or indeed any symmetric distribution, and that correlations between asset classes are not fixed but can vary depending on external events (especially in crises).

Since von Neumann and Morgenstern (1944), many researchers have tried to model portfolio optimization problems within an expected utility maximization framework. Different utility functions have been used in this approach, and the most notable recent works in this area are those of Long (1990) and Luenberger (1993), where log optimal portfolios are constructed and analyzed. Single period portfolio optimization theory was initially developed by Markowitz (1952), where he introduced mean variance portfolio optimization and efficient portfolio theory, which also led to the one fund theorem of Tobin (1958). However, these single period models were not sufficient to reflect the real financial world which is dynamically changing over time, and different approaches have been devised to solve multi-period portfolio selection problems.

Merton has used stochastic control theory with continuous time dynamics to model multi period portfolio optimization problems by reducing the problem into solving Hamilton-Jacobi-Bellman equations. His most important contributions include the two papers: Merton (1969) and Merton (1971). Since then, a lot of literature has been produced in expanding the

model and applying stochastic control theory in finance. Some of the important works in this field are summarized in Merton (1990).

Following Harrison and Kreps (1979) and Harrison and Pliska (1981), theories in stochastic calculus have also been used extensively in solving different problems in finance. This method has led the development in asset pricing theory, but it has also been introduced to the portfolio optimization world by Karatzas, Lehoczky, and Shreve (1987) and Karatzas (1989).

There are other works that are focused on adding different constraints to above models, and on adding transaction costs due to rebalancing. A good reference in reviewing literature in this area as well as models that are not based on expected utility maximization is Korn (1997).

2.6.2 Expected Utility Theory

It is logical that the explanations rooted in human and social psychology would hold great promise in advancing our understanding of stock market behavior. More recent research has attempted to explain the persistence of anomalies by adopting a psychological perspective. Evidence in the psychology literature reveals that individuals have limited information processing capabilities, exhibit systematic bias in processing information, are prone to making mistakes, and often tend to rely on the opinion of others. Rabin and Thaler (2001) discusses the explanation of risk aversion in the expected utility theory is not plausible by providing examples of how the theory can be wrong and misleading. They call for a better model of describing choice under uncertainty. It is now widely agreed that the failure of expected utility theory is due to the failure to recognize the psychological principles governing decision tasks.

2.6.3 Relationship Portfolio Concepts

The relationship theories have been contributed by many management scientists. Fiocca (1982) explaining various factors associated with the customer buying behavior and supplier relationships. Campbell and Cunningham (1983) proposed a synchronized analysis of portfolio strategy for marketing management. The following text reviews their contributions along with other contributors.

Fiocca (1982) suggests a number of mechanisms for assessing the proposed axes: “Difficulty in managing the customer” is a function of the level of competition for the customer, customer buying behavior and the characteristics of the product bought by the customer. “Strategic importance” is determined by the value/volume of purchases, the potential and prestige of the customer, customer market leadership, and the overall desirability to the supplier in making strategic improvements and adaptation to customer specifications. The strength of supplier/customer relationships is again measured by applying a mix of objective, judgmental or subjective factors that include: length of relationship; importance of the customer; friendship; co-operation in product development; and social distance.

Customer profitability was calculated by taking the revenue from that customer (gross value of sales minus the commission paid) and subtracting from it direct costs, pseudo-direct costs (the costs that could be attributed to groups of similar customers and therefore apportioned accordingly) and indirect costs. When the profitability of each customer was calculated it was found that about 20 per cent of customers accounted for 80 per cent of profits. Perceived strength of the relationship was calculated using the variables: technical ability, experience, pricing requirements, speed of response, frequency of contact, degree of cooperation, trust, length of relationship, friendship and management distance (frequency of contact). Their analysis of two key customers showed that while both were profitable, the company was currently not supplying even half of the customers' requirements and could potentially significantly increase its own net revenues. A criticism of the Fiocca model put forward by Yorke and Droussiotis (1994) is that it does not recognize the importance of considering customer profitability. It simply assumes that different cells can be associated with different levels of profitability.

Reviewing back, Campbell and Cunningham (1983) proposed a three-step portfolio analysis strategy for marketing management. Using the case study of a major packaging supplier, they suggest a three-step analysis using two variables at each stage. The first step focuses on the nature and attractiveness of the customer relationship using customer life cycle stage on one axis and various customer data on the other.

2.6.4 Customer-Supplier Relationship Theories

The conceptual issues in customer-supplier relationships have been led by Shapiro *et al.* (1987) and Krapfel *et al.* (1991). Besides, Turnbull and Zolkiewski (1997) have also

contributed to these theories subjecting towards appropriate tests. Shapiro *et al.* (1987) in developing a customer classification matrix focus on customers as profit centres. Three variables – costs to serve suppliers, customer behavior and management of customers – were used to investigate the profit dispersion of the customer portfolio. Four types of costs – presale, production, distribution and post-sale service costs – were used to define the cost to serve axis. Combining this calculation with the net price charged they found that such analysis identified a wide range of profit margins both by customer and type of product sold.

Shapiro *et al.* (1987) suggest that while many suppliers believe that if they analyze the breakdown of their accounts, most accounts will fall into the “carriage trade” and “bargain basement” quadrants. Yet, when analysis is actually performed, it will usually show that over half a suppliers' accounts fall into the “passive” and “aggressive” quadrants. They contend that “Four aspects of the customer's nature and position affect profitability: customer economics, power, the nature of the decision-making unit, and the institutional relationship between the buyer and seller” (Shapiro *et al.*, 1987). They further developed the approach and demonstrated that the grid can be successfully used to segment customers in mature industrial markets. Turnbull and Zolkiewski (1997) also tested this matrix using the case study of a UK-based computer systems house and identified a scatter of customer projects across the matrix.

Krapfel *et al.* (1991) define relationship value as a function of four factors: criticality, quantity, substitution and slack. They also use a portfolio approach to analyze customer-supplier relationships and propose a relationship classification matrix based on the concepts of “relationship value” and “interest commonality”.

2.6.5 Value-Based Portfolio Model

This model analyzes optimal portfolio choice and consumption with values management in the organization-supplier-customer triadic relationship. The value concept in the above relationship governs the customer portfolio decision in terms of formulation of recursive utility over time. It shows that the optimal portfolio demand for products under competition varies strongly with the values associated with the brand, industry attractiveness, knowledge management and ethical issues of the organization. The extent of business values determines the relative risk aversion in terms of functional and logistical efficiency between the organization and supplier while the switching attitude may influence the customers if the

organizational values are not strong and sustainable in the given competitive environment. The model assumes that a high functional value integrated with the triadic entities would raise the market power of the organization, sustain decisions of customer portfolios and develop long-run relationships thereof. The customer value concept is utilized to assess product performance and eventually to determine the competitive market structure and the product-market boundaries (Campbell and Cunningham 1983)

The value based portfolio model explains that the value based customer portfolios would enhance the customer value as the product efficiency viewed from the customers' perspective, i.e. as a ratio of outputs (e.g. resale value, reliability, safety, comfort) that customers obtain from a product relative to inputs (price, running costs) that customers have to deliver in exchange. The derived efficiency value can be understood as the return on the customer's investment. Products offering a maximum customer value relative to all other alternatives in the market are characterized as efficient. Market partitioning is achieved endogenously by clustering products in one segment that are benchmarked by the same efficient peer(s) Turnbull and Zolkiewski (1997). This ensures that only products with a similar output-input structure are partitioned into the same sub-market. As a result, a sub-market consists of highly substitutable products.

2.7 Financial Performance

Three widely used financial ratios to measure solvency are the debt-to-asset ratio, the equity-to-asset ratio and the debt-to-equity ratio (Quach, 2005). These three solvency ratios provide equivalent information, so the best choice is strictly a matter of personal preference. Profitability measures the extent to which a business generates a profit from the factors of production: labor, management and capital.

A subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Copisarow, 2000). There are many different ways to measure financial performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. Furthermore, the analyst or

investor may wish to look deeper into financial statements and seek out margin growth rates or any declining debt.

The financial performance assessment is devoid of such a multitude of options and methodologies despite critical importance of financial sustainability. Though an ambition for sustainable institutions has been often articulated, there was also an opinion that most financial institutions working in this field have been unsustainable. Research studies have shown that this is predominantly connected to the perception of micro borrowers' risk and creditworthiness, and the diseconomies of scale in making small loans (Quach, 2005). According to Dayson et al., (2006), Microfinance has been attractive to lending agencies because of demonstrated sustainability and low cost of operations.

2.7.1 Measures of Financial Performance

Liquidity measures the ability of the business to meet financial obligations as they come due, without disrupting the normal, ongoing operations of the business. Liquidity can be analyzed both structurally and operationally. Structural liquidity refers to the balance sheet (assets and liabilities) and operational liquidity refers to cash flow measures. On the other hand Quach, (2005) indicated that solvency measures the amount of borrowed capital used by the business relative the amount of owner's equity capital invested in the business. In other words, solvency measures provide an indication of the business' ability to repay all indebtedness if all of the assets were sold. Solvency measures also provide an indication of the business' ability to withstand risks by providing information about the farm's ability to continue operating after a major financial adversity.

Zenios et al. (1999) indicated that three widely used financial ratios to measure solvency are the debt-to-asset ratio, the equity-to-asset ratio and the debt-to-equity ratio. These three solvency ratios provide equivalent information, so the best choice is strictly a matter of personal preference. Profitability measures the extent to which a business generates a profit from the factors of production: labor, management and capital. Profitability analysis focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business.

Four useful measures of firm profitability are the rate of return on firm assets (ROA), the rate of return on farm equity (ROE), operating profit margin and net firm income. The ROA

measures the return to all firm assets and is often used as an overall index of profitability, and the higher the value, the more profitable the firm business. The ROE measures the rate of return on the owner's equity employed in the firm business. It is useful to consider the ROE in relation to ROA to determine if the firm is making a profitable return on their borrowed money (Zenios et al. 1999).

2.8 Loan Portfolio and Financial Performance

The lending function is considered by the banking industry as the most important function for the utilization of funds. Since, banks earn their highest gross profits from loans; the administration of loan portfolios seriously affects the profitability of banks. Indeed, the large number of non-performing loans is the main cause of bank failure. Banks are learning to review their risk portfolios using the criteria laid down by Basel II (2005). Among the revisions was a new requirement for banks that model specific risk to measure and hold capital against default risk that is incremental to any default risk captured in the bank's value-at-risk model. The incremental default risk charge was incorporated into the trading book capital regime in response to the increasing amount of exposure in banks' trading books to credit-risk related and often illiquid products whose risk is not reflected in value-at-risk. Greenspan has indicated that Basel's goal is to induce bankers to improve their risk management capability, including how the institutions price products, reserve for loss, and control their operations (Rehm, 2002).

With respect to financial performance, banks now use various measures to assess bank efficiency and related functions in the bank lending process. Traditionally, banks determined operating efficiency by using measures of bank profitability, such as return on equity, return on assets, and return on investment; also, banks used operational ratios, such as monetary output per staff member, and total operating expenses per unit of output.

Banks adopted data envelopment analysis (DEA) in the 1990s as the principal method for assessing bank efficiency. DEA is a linear-programming method initially developed by Charnes et al. (1978) to measure the comparative performance of homogeneous organizations. The objective of DEA was to build an efficiency frontier of inputs and outputs, where production is maximized under fixed costs or costs are minimized under restricted production. Thanassoulis (1999) concluded that banks were increasingly using DEA as a tool for assessing, monitoring, and improving performance. The system is widely discussed in

recent literature containing banking financial performance studies. Sherman and Gold (1985), adopted DEA as a tool for assessing corporate banking performance.

Thanassoulis (1999) and Zenios et al. (1999) used the DEA method to assess bank branch performance. Kantor and Maital (1999) combined and integrated activity based-costing (ABC) and DEA management tools for measuring costs and performance of bank branches. Grasing (2002) described the efforts of the Nolan Company to develop benchmarks for commercial banks involving many of the top performing banks. The goal of establishing the benchmarked banks was to establish drivers of high performance. The cost per each completed loan, the cost per thousand dollars of loans, the non-interest revenue from each loan per each thousand dollars, the total number of loans per employee, and the dollar amount of loans per employee were used as the performance measures for commercial banking.

As reported by Boucher (1996), measuring the productivity of a loan portfolio is the key to improving commercial lending performance. The productivity measure of a loan portfolio is quarterly loan sales. The manager can use this information to analyze the loan portfolios' quarterly productivity. Perro and Ruoff (1997) used the value tree to depict some of the values and risk drivers for commercial lending. The drivers of lending revenue are operating fees and interest income that are driven by new loans and existing loan volumes. The drivers of lending expenses consist of interest expense, operating expense, loss revenues and unexpected losses in commercial loans.

Their financial performance measures are compared with the characteristics based on final versus internal measures, monetary vs non-monetary measures, and the degree of aggregate. In the studies of Grasing and Boucher, as well as those of Perro and Ruoff, all of the performance measures are final measures. Using final measures as the primary tools to evaluate lending performance, however, may result in the following problems: Final measures used to evaluate final outputs of the lending process cannot predict in advance whether a lending operation may become a problem loan. That is, the final measures cannot reduce the operational risk of lending in advance.

In general, the period of lending will be long term – a minimum of three or five years. Performance measures of the lending should concentrate on the quality rather than the quantity of the loan. Therefore, when using final measures as indicators of evaluating loan performance, quarterly or yearly measures are not incompatible with regular financial

performance measures. A borrower may pay in accordance with the bank's requirements for one period, but in the next period, he or she can violate or breach the agreement. The regular loan performance measure emphasizes cash flow in, but neglects the quality of each lending process, leading to a possibly biased performance measure.

To resolve these problems that can occur when using final measures as financial performance indicators, commercial institutions choose internal performance measures of bank lending activities as the main analytical core for our study for various reasons. First, the internal measures used can evaluate internal outputs of the lending process. Therefore, these measures can prevent problems loans from occurring in the future. Second, the internal measures can be compatible with a bank's regular performance quarterly or yearly measures. Third, the internal measures are based on quality not quantity, and a quality-based measure can prevent a possible bias in measuring banking loan performance. From an accounting perspective, loans should be recognized as being impaired and necessary provisions should be made, if it is likely that the bank will not be able to collect all the amounts due – principal and interest – according to the contractual terms of the loan agreement(s). Loan loss provisioning is thus a method that banks use to recognize a reduction in the realizable value of their loans for a sustainable financial performance. Bank managers are expected to evaluate credit losses in their loan portfolios on the basis of available information – a process that involves a great deal of judgment and is subject to opposing incentives. Sometimes banks may be reluctant to account for the whole amount of incurred losses because of the negative effect of provisions on profits and on shareholders' dividends. In other cases, if provisions are tax-deductible, banks have an incentive to overstate their loss provisions and to smooth profits over time in order to reduce the amount of tax liability (Laurin and Majnoni, 2003).

What provision actually refers to can be understood from the urge to set aside any amount for probable loss of revenue? Making provision stemmed from the credit transactions such as credit sales. Sales on any basis other than for cash make possible the subsequent failure to collect the account. An uncollectable account receivable is a loss of revenue that requires, through proper entry in the accounts, a decrease in the asset accounts receivable and a related decrease in income and stockholders' equity. Recording the bad debt expense recognizes the loss in revenue and the decrease in income. Of the two methods of recording uncollectable accounts receivable, the allowance method is appropriate in situations where it is probable that an asset has been impaired and that the amount of the loss can be reasonably estimated

since the collectability of receivables is considered a loss contingency. A receivable is a prospective cash inflow, and the probability of its collection must be considered in valuing this inflow (Kieso et al., 2001).

2.9 Empirical Evidence

Empirical evidence studies focusing on loan portfolio and financial performance of banks have been conducted. Jaffee and Russell (1976) found that the optimal loan size depends on the marginal loan loss, and not on the initial portfolio position of the MFI. Tse, (1996a) shows that under conditions of uncertainty when default risk is present, and if absolute risk aversion is increasing in wealth, a rise in profitability of the bank will lower the amount of asset to be allocated in risky loans even if credit can be properly priced. This is an important indicator of the profitability of the MFI.

In their study, Edmister and Hatfield, (1995) observed that few institutions reported financial and outreach data at a sufficiently high standard. They further found that relevant information plays a crucial role both in internal management and in convincing outsiders (donors, lenders, investors, depositors, regulatory authorities) of the soundness of an institution. Inability to provide such information will slow the development of an institution and limit its access to funding.

Ngene (2002) did an empirical investigation into portfolio performance measures by pension fund managers and the challenges they face in portfolio management in Kenya. They found out that many investors mistakenly base the success of their portfolios on returns alone. Few consider the risk that they took to achieve those returns.

Also, Maina (2003) carried out a research on the risk based capital standards and the riskiness of bank portfolios in Kenya. The study established that the challenges include taxes, investor preferences, portfolio constraints, lack of knowledge from consultants and cultural hurdles. The study thus shows that these challenges led to reduction in return on assets, financial self sufficiency and portfolio yield. It was also clear that multi-divisional firms sometimes overinvest capital in weak divisions and underinvest it in stronger ones; and this adversely affects the profitability of the entire business group.

Obusubiri (2006) conducted a study on corporate social responsibility and portfolio performance at the NSE, while Mbote (2006) did a research on the relationship between the type of mortgages and the level of non-performing loan portfolio in the mortgage companies in Kenya.

Koyengo (2005) conducted an evaluation of investor returns under active versus passive equity portfolio management strategies and found that higher productivity growth generates income that is partly channelled to bank profits and that well-capitalized banks face lower need to external funding and lower bankruptcy and funding costs; and this advantage translates into better profitability.

According to Ndung'u (2003), sound asset and liability management have significant influence on profitability. Among the external factors, high market interest rate was found to have an adverse effect on financial institution's profitability in Kenya. The study also found that the prerequisites to operational efficiency include the adaptation of an effective service delivery methodology and significant institutional competence in such areas as delinquency control, information management, and staff development.

Mbote (2006), did a study on the relationship between the type of mortgages and the level of loan portfolio in the mortgage companies in Kenya while Maithulia (1995), studied the portfolio diversification: an empirical investigation of Commercial banks in Kenya. These studies established that few institutions reported financial and outreach data at a sufficiently high standard and that inability to provide such information will slow the development of an institution and limit its access to funding.

Kenya due to poor loan portfolio procedures that affected their financial performance (Waweru and Kalani, 2009). They argued that portfolio models, although not frequently used in management, can indeed be adapted by commercial institutions and other organizations in the sector to establish a sustainable financial performance.

2.10 Summary of Literature Review

Portfolio management is a discipline in which combined projects, to a certain extent, utilize the same management, where issues stretch beyond the scope of the project, and where interdependencies not manageable by a single project are to be managed by a portfolio head

or “boss of projects. The account officer is a logical choice because he or she knows more about the credit than anyone else and should have access to timely financial information from the borrower. Segmentation of the market is also important in order to be able to determine differences which are useful in selecting target markets. It can be concluded that portfolio analysis is a tool which allows a tourist destination to compare various market segments and so serves to evaluate its competitive position for the present and the future.

Assessing LPM involves evaluating the steps bank management takes to identify and control risk throughout the credit process. Portfolio management theory seeks to make the most of risk-adjusted returns and take full advantage of portfolios through evaluation, diversification, and other asset management strategies. A subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The financial performance assessment is devoid of such a multitude of options and methodologies despite critical importance of financial sustainability. The lending function is considered by the banking industry as the most important function for the utilization of funds. Sometimes banks may be reluctant to account for the whole amount of incurred losses because of the negative effect of provisions on profits and on shareholders' dividends. The studies reviewed above are mainly done in the developed countries whose institutions loan portfolio practices and techniques are different from that of firms in Kenya. Therefore, there exist a research gap on the relationship between loan portfolio and financial performance of commercial banks in Kenya. This study therefore seeks to fill this literature gap by investigating the relationship between loan portfolio and financial performance of commercial banks in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to carry out this study. The chapter presents the research design, the population, data collection method and instruments and data analysis.

3.2 Research Design

For the purposes of this study, the researcher used causal research design. A cause-effect research design (causal) was chosen because it enables the researcher to generalize the findings to a larger population. This study was therefore able to generalize the findings to all the commercial banks in Kenya. Causal Research explores the effect of one thing on another and more specifically, the effect of one variable on another (Dooley, 2007). According to Walliman and Nicholas (2001), causal-comparative research attempts to identify a causative relationship between an independent variable and a dependent variable. This design was appropriate in investigating the relationship between loan portfolio composition and financial performance of commercial banks in Kenya.

3.3 Population of the Study

Target population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well defined or set of people, services, elements, events, group of things or households that are being investigated. This definition ensures that population of interest is homogeneous. The target population composed of 43 commercial banks in Kenya (CBK Handbook, 2008). Mugenda and Mugenda, (2003), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study.

3.4 Sample Population

The population of interest of this study was selected using simple random sampling method to come up with a sample size of thirty (30) commercial banks. In this method from the target population, a starting point was chosen at random, and thereafter at regular intervals. The method spreads the sample more evenly over the population and is easier to conduct (Mugenda and Mugenda 1999).

3.5 Data Collection

For the purpose of this study, the researcher mainly used secondary data. The researcher mainly collected quantitative data on business loan, personal loans, mortgages, education loans, government Loans and profitability of the banks. Secondary data involved the collection and analysis of published material and information from other sources such as annual reports, published data. Thus in this study the researcher employed the use of published data on loan portfolio and financial performance of the bank. Cooper and Schindler (2003) further explain that secondary data is a useful quantitative source for evaluating historical or contemporary confidential or public records, reports, government documents and opinions.

3.6 Data Analysis

The secondary data was collected on the economic statistics available at Kenya Bureau of Statistics from 2003 to 2008 (5 year period). The data analysis was done by using the Statistical Package for Social Sciences (SPSS Version 17.0). The study thus used inferential statistics in the data analysis whereby correlation, collinearity and logistic regression models were used. To empirically ascertain the operating efficiency and loan portfolio indicators usage by commercial banks in Kenya, a multiple regression model was used. While no specification test is used to support using the linear function, it is evident that the linear functional form is widely used in the literature and produces good results (Bourke, 1989). The majority of studies on profitability, productivity and efficiency such as Bourke (1989), used linear models to estimate the impact of various factors that may be important in explaining what indicators are used by a given firm.

In order to eliminate the possibility of obtaining spurious correlations, the study ensured that all the variables incorporated into the predicted model are clearly established, in the literature. Regression estimates were derived using the simple ordinary least squares (OLS) method as used by Greene, (2004). This is because, statistically, least squares estimates are the most reliable regression estimates because of their general quality of minimized bias and variance. In testing for significance of the regressions a significance limit at 15 per cent was used. The logistic regression used in this model was:

$$Y = \beta_0 + \beta_1 \ln(X_1) + \beta_2 \ln(X_2) + \beta_3 \ln(X_3) + \beta_4 \ln(X_4) + \beta_5 \ln(X_5) + \varepsilon$$

Whereby Y =profitability of the bank (ROA) as the dependent variable while independent variable includes; X_1 = business loan/total loan, X_2 = personal loans/total loan, X_3 = mortgages/total loan, X_4 = Education loans/total loan and X_5 = government Loans/total loan. B_0 is the Y intercept, β_1 ...to β_{10} are the coefficients of the macroeconomic variables while \ln is the natural logarithm of the macroeconomic variables (X_1 ... X_{10}) and ε = Error term.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF THE RESULTS

4.1 Introductions

This chapter presents the research findings on the study on the relationship between loan portfolio and financial performance of commercial banks in Kenya. The data was collected on a sample of 30 commercial banks for the period ranging from 2004 to 2008.

4.2 Data Analysis and Interpretation

A multivariate regression model was applied to determine the relationship between loan portfolio composition and financial performance of commercial banks in Kenya. The logistic regression used in this model is:

$$Y = \beta_0 + \beta_1 \ln(X_1) + \beta_2 \ln(X_2) + \beta_3 \ln(X_3) + \beta_4 \ln(X_4) + \beta_5 \ln(X_5) + \varepsilon$$

Whereby Y =profitability of the bank (ROA) as the dependent variable while independent variable includes; X_1 = business loan/total loan, X_2 = personal loans/total loan, X_3 = mortgages/total loan, X_4 = Education loans/total loan and X_5 = government Loans/total loan. B_0 is the Y intercept, β_1 ...to β_{10} are the coefficients of the macroeconomic variables while \ln is the natural logarithm of the macroeconomic variables (X_1 ... X_{10}) and ε = Error term

4.2.1 Year 2004 Analysis and Interpretations

Table 1: Model Summary for 2004

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.097(a)	.009	.981	4.223	.009	.009	1	1	.938

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

Adjusted R² is called the coefficient of determination and tells us how the profitability of commercial banks in Kenya varied with variation in business loan, personal loans, mortgage loans, education loan and government loans. From table above, the value of adjusted R² is 0.981. This implies that, there was a variation of 98.1% of profitability of commercial bank with business loan, personal loans, mortgage loans, education loan and government loans at a confidence level of 95%. This means that 98.1% of the profits of commercial banks are attributable to the types of loans extended by the commercial banks.

Table 2: 2004 Coefficients results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.833	3.156		1.839	.017
	business loan	1.771	.061	.017	.097	.038
	personal loans	0.286	.038	.024	.061	.023
	mortgages loan	1.358	.311	.011	.090	.078
	Education loans	0.116	.018	.023	.094	.023
	government Loans	0.574	.418	.097	.097	.067

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans . From the data in the above table, there is a positive relationship between profitability of commercial banks and business loans, personal loans, mortgage loans, education loans and government loans.

In 2004 the established regression equation was

$$Y = 1.833 + 1.771 X_1 + 0.286 X_2 + 1.358 X_3 + 0.116X_4 + 0.574 X_5$$

From the above regression model, it was found that profitability of commercial bank would and at 1.8833 holding business loan, personal loans, mortgage loans, education loan and government loans. A unit increase in business loan would lead to increase in profitability of commercial bank by factor of 1.771, also unit increase in personal loan would lead to increase in profitability of commercial bank by factor of 0.286, a unit increase in mortgage loan would result to increase in profitability of commercial bank by a factor of 1.358, also unit increase in education loan would result to increase in profitability of commercial bank by factor of 0.116, further unit increase in government loan would result to increase in profitability of commercial bank by factor of 0.574. This information shows that business loans, mortgages and government loans have greater effect on profitability of commercial banks, with the highest impact being that of business loans followed by mortgage loans, government loans, personal loans and lastly educational loans.

4.2.2 Year 2005 Analysis and Interpretations

Table 3: Model Summary for 2005

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.098(a)	.009	.972	3.441	.0089	.0089	1	1	.928

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

Adjusted R² tells us how the profitability of commercial banks in Kenya varied with variation in business loan, personal loans, mortgage loans, education loan and government loans. From table above, the value of adjusted R² is 0.972. This implies that, there was a variation of 97.2% of profitability of commercial bank with business loan, personal loans, mortgage loans, education loan and government loans at a confidence level of 95%. This means that 97.2% of the profits of commercial bank are attributable to the types of loans extended by the commercial banks.

Table 4: 2005 Coefficient's results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.441	3.156		1.839	.017
	business loan	1.386	.067	.095	.095	.048
	personal loans	0.142	.051	.091	.091	.005
	mortgages loan	1.215	.411	.094	.094	.013
	Education loans	0.374	.518	.093	.093	.014
	government Loans	0.742	.031	.061	.021	.005

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

In 2005 the established regression equation was

$$Y = 1.441 + 1.386 X_1 + 0.142 X_2 + 1.215 X_3 + 0.374 X_4 + 0.742 X_5$$

From the above regression model, it was found that profitability of commercial bank would and at 1.441 holding business loan, personal loans, mortgage loans, education loan and government loans. A unit increase in business loan would lead to increase in profitability of commercial bank by factor of 1.386, also unit increase in personal loan would lead to increase in profitability of commercial bank by factor of 0.142, a unit increase in mortgage loan would result to increase in profitability of commercial bank by a factor of 1.215, also unit increase in education loan would result to increase in profitability of commercial bank by factor of 0.374, further unit increase in government loan would result to increase in profitability of commercial bank by factor of 0.742. This information shows that business loans, mortgages and government loans have the greatest effect on profitability of commercial banks, with the highest impact being that of business loans followed by mortgage loans, government loans, educational loans and lastly personal loans.

4.2.3 Year 2006 Analysis and Interpretations

Table 5: Model Summary for 2006

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.95(a)	.009	.961	4.605	.009	.009	1	1	.678

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

Adjusted R² tells us how the profitability of commercial banks in Kenya in 2006 varied with variation in business loan, personal loans, mortgage loans, education loan and government loans. From table above, the value of adjusted R² is 0.961. This implies that, there was a variation of 96.1% of profitability of commercial bank with business loan, personal loans, mortgage loans, education loan and government loans at a confidence level of 95%. This means that 96.1% of the profits of commercial bank are attributable to the types of loans extended by the commercial banks.

Table 6: Coefficient's results for 2006

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.918	1.715		3.133	.052
	business loan	1.451	.61	.074	.082	.108
	personal loans	0.200	.063	.051	.064	.315
	mortgages loan	1.179	.057	.075	.023	.208
	Education loans	0.332	.67	.091	.021	.013
	government Loans	.823	.61	.067	.048	.018

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

The established regression equation for 2006 was

$$Y = 1.918 + 1.451 X_1 + 0.200 X_2 + 1.179 X_3 + 0.332 X_4 + 0.823 X_5$$

From the above regression model, holding business loan, personal loans, mortgage loans, education loan and government loans to constant zero it was found that profitability of commercial bank would and at 1.918. A unit increase in business loan would lead to increase in profitability of commercial bank by factor of 1.451, also unit increase in personal loan would lead to increase in profitability of commercial bank by factor of 0.2, a unit increase in mortgage loan would result to increase in profitability of commercial bank by a factor of 1.179, also unit increase in education would result to increase in profitability of commercial bank by factor of 0.332, further unit increase in government loan would result to increase in profitability of commercial bank by factor of 0.823. This information implies that business loans, mortgages and government loans have greater impact on profitability of commercial

banks, with the highest impact being that of business loans followed by mortgage loans, government loans, educational loans, personal loans respectively.

4.2.4 Year 2007 Analysis and Interpretations

Table 7: Model Summary for 2007

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.939(a)	.882	.878	4.4611242	.0089	.0089	1	1	.928

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

Adjusted R² tells us how the profitability of commercial banks in Kenya varied with variation in business loan, personal loans, mortgage loans, education loan and government loans. From table above, the value of adjusted R² is 0.878. This implies that, there was a variation 87.8% of profitability of commercial bank with business loan, personal loans, mortgage loans, education loan and government loans at a confidence level of 95%. This implies that, 87.8% of change in profitability of commercial bank is explained by business loan, personal loans, mortgage loans, education loan and government loans. The other factors are captured by 12.2% only. This means that 87.8% of the profits of commercial bank are attributable to the types of loans extended by the commercial banks.

Table 8: Coefficients results for 2007

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	1.539	0.506		5.012	1.452
	business loan	1.629	0.711	0.259	3.224	0.001
	personal loans	0.302	0.659	0.081	1.065	0.288
	mortgages loan	1.322	0.054	0.119	1.496	0.136
	Education loans	0.241	0.512	0.254	1.548	0.156
	government Loans	0.822	0.054	0.119	1.496	0.121

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

In 2007 the established regression equation was

$$Y = 1.539 + 1.629X_1 + 0.302 X_2 + 1.322 X_3 + 0.241 X_4 + 0.822 X_5$$

From the above regression model, it was found that profitability of commercial bank would be at 1.589 holding business loan, personal loans, mortgage loans, education loan and government loans to a constant zero. A unit increase in business loan would lead to increase in profitability of commercial bank by factor of 1.629, also unit increase in personal loan would lead to increase in profitability of commercial bank by factor of 0.302, a unit increase in mortgage loan would result to increase in profitability of commercial bank by a factor of 1.322, also unit increase in education would result to increase in profitability of commercial bank by factor of 0.241, further unit increase in government loan would result top increase in profitability of commercial bank by factor of 0.822. This information shows that business loans, mortgages and government loans have the greatest effect on profitability of commercial banks with the highest being that of business loan followed by mortgages loan.

4.2.5 Year 2008 Analysis and Interpretations

Table 9: Model Summary for 2008

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.895(a)	.800	.718	.59353	.009	.009	1	1	.938

Source, Research Data

The adjusted R^2 is known as coefficient of determination and it tell variation in dependent variable due to changes in independent variable, from the above table the adjusted R^2 was 0.718 which tell us there was a 71.8% variation in profitability of commercial banks due to changes in business loans , personal loans , mortgage loans, education loan and government loans. This means that 71.8% of the profits of commercial bank are attributable to the types of loans extended by the commercial banks while 28.2% is attributable to other non loans factors.

Table 10: Coefficients results for 2008

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.684	1.457		.470	.645
	business loan	1.330	.225	.369	1.466	.161
	personal loans	0.352	.209	.300	1.681	.111
	mortgages loan	1.437	.249	.226	1.759	.097
	Education loans	0.306	.282	.310	1.088	.292
	government Loans	0.941	.289	.331	2.218	.040

Source, Research Data

a Predictors: (Constant), business loan , personal loans , mortgage loans, education loan and government loans .

In 2008 the established regression equation was

$$Y = 1.684 + 1.330 X_1 + 0.352 X_2 + 1.437 X_3 + 0.306 X_4 + 0.941 X_5$$

From the above regression model, it was found that profitability of commercial bank would be at 1.684 holding business loan, personal loans, mortgage loans, education loan and government loans to a constant zero. A unit increase in business loan would lead to increase in profitability of commercial bank by factor of 1.330, also unit increase in personal loan would lead to increase in profitability of commercial bank by factor of 0.352, a unit increase in mortgage loan would result to increase in profitability of commercial bank by a factor of 1.437, also unit increase in education would result to increase in profitability of commercial bank by factor of 0.306, further unit increase in government loan would result to increase in profitability of commercial bank by factor of 0.941. This information shows that business loans, mortgages and government loans have the greatest effect on profitability of commercial banks with the highest being that of mortgages loan followed by business loan, government loans, personal loans and educational loans respectively.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions drawn from the data findings analyzed and presented in the chapter four. The chapter is structured into summary of findings, conclusions, recommendations and areas for further research.

5.2 Summary of Findings and Conclusions

5.2.1 Summary of Findings

The study found that the regression equation for the period 2004 to 2008 to determine the relationship between loan portfolio and financial performance of commercial banks in Kenya were:

Year 2004:

$$Y = 1.833 + 1.771 X_1 + 0.286 X_2 + 1.358 X_3 + 0.116X_4 + 0.574 X_5$$

Year 2005:

$$Y = 1.441 + 1.386 X_1 + 0.142 X_2 + 1.215 X_3 + 0.374 X_4 + 0.742 X_5$$

Year 2006:

$$Y = 1.918 + 1.451 X_1 + 0.200 X_2 + 1.179 X_3 + 0.332 X_4 + 0.823 X_5$$

Year 2007:

$$Y = 1.539 + 1.629X_1 + 0.302 X_2 + 1.322 X_3 + 0.241 X_4 + 0.822 X_5$$

Year 2008:

$$Y = 1.684 + 1.330 X_1 + 0.352 X_2 + 1.437 X_3 + 0.306 X_4 + 0.941 X_5$$

From the above regression model for the five years, the study found that there exist a relationship between loan portfolio and performance (profitability) of commercial banks in Kenya. The study found the intercept to vary though with the highest value being 1.918 and the lowest being 1.441, this mean that profitability of commercial banks would range between 1.918 and 1.441 holding the types of loans extended to customers to a constant zero. The study also found the coefficient of business loan, personal loans, mortgage loans education loans and government loans vary positive with business loans, mortgage loans and government loans having the highest coefficient thus greater effect on financial performance of commercial banks in Kenya. This could be attributable to their highest rate of interest charged, high demand and low default rate due to security offered. Personal loans and education loans had the lowest coefficient which could be attributed to their low interest rates and high defaults rates in personal loans.

For commercial banks to remain profitable they must adopt the best techniques in managing their loan portfolio since the lifeblood of each lending institution is its loan portfolio and the success of the institution depends on how well that portfolio is managed. Loans that have been made or bought and are being held for repayment. Loan portfolios are the major asset of commercial banks and other lending institutions. The value of a loan portfolio depends not only on the interest rates earned on the loans, but also on the quality or likelihood of that interest and principal being repaid (Luenberger 1993).

5.2.2 Conclusions

The study concludes that there exists a relationship between loan portfolio and financial performance of commercial banks in Kenya; Loan portfolios are the major asset of banks and other lending institutions. The value of a loan portfolio depends not only on the interest rates earned on the loans, but also on the quality or likelihood that interest and principal will be paid (Luenberger 1993). Because of the size of the loan portfolio, effective management of liquidity risk requires that there be close ties to, and good information flow from, the lending function. Obviously, loans are a primary use of funds. The study also concludes that every bank should strive to have the best loans mix as it was found that some types of loans have greater effects on performance of commercial bank, thus commercial bank must have the best loan portfolio for them to reap more profits from these loans. Commercial banks in Kenya should concentrate on advancing more of business loans and mortgage loans since they were found to strongly influence profitability of the banks. Therefore a large percentage of loan portfolio composition should be made of mortgage loans, followed by business loans, government loans, personal loans and educational loans respectively.

On the other hand commercial banks should not ignore other non loans factors as found out for they have fair constant contribution varying within a low range between 1.441 and 1.918 to the overall profitability of commercial banks in Kenya.

5.3 Recommendations

The study recommends that for commercial banks to remain profitable they should have loan portfolio management which will help them in making prudent decisions about loan investment mix and policy, matching investments to objectives. Level of loan asset allocation for banking institutions should be balanced against risk and financial performance. Portfolio management techniques employed by banks should focus more on strategic issues for a

portfolio of projects and the ability to achieve strategic objectives. The study further recommends that commercial banks should not ignore other non loans factors for they have fair constant contribution to the overall profitability of the banks. Since business loans and mortgage loans were found to strongly influence profitability of banks, Commercial banks in Kenya should concentrate on advancing more of these loans to enhance their general performance.

5.4 Limitations of the Study

A limitation for the purpose of this research was regarded as a factor that was present and contributed to the researcher getting either inadequate information. The main limitations of this study were; some data was not readily available. This reduced the probability of reaching a more conclusive study. However, conclusions were made with the available data. The small size of the sample could have limited confidence in the results and this might limit generalizations to other situations. Time- Due to official duties was a major concern. The information required for the study was very confidential which limited its accessibility from the banks. Most of the information was in very raw form and thus requiring a lot of time to compute it.

5.5 Suggestion for Further Research

Further studies should be done on the general credit risk management practices on the profitability of the banks. Research should be done on the factor that influences the accessibility of the bank loans from commercial banks. The study should also be done on the influence of interest rate ceilings on the performance of the bank loans. A study should also be done on the causes of high defaults rates on Personal loans among the commercial banks. Further, a similar study should be done on the relationship between loan portfolio and performance of Saccos and MFIs.

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APPENDICES

Appendix I: Commercial Banks

1. ABC Bank
2. Bank of Africa
3. Bank of India
4. Bank of Baroda
5. Barclays Bank of Kenya
6. Chase Bank
7. Citibank
8. City Finance Bank
9. Co-operative Bank of Kenya
10. Credit Bank
11. Ecobank
12. Equatorial Commercial Bank
13. FC Stanbic Bank
14. Fidelity Commercial Bank
15. Fina Bank
16. Giro Commercial Bank
17. Guardian Bank
18. Habib A.G Zurich
19. Habib Bank Ltd
20. HFCK
21. I & M bank
22. Imperial Bank
23. Kenya Commercial Bank
24. Middle East Bank
25. National Bank of Kenya
26. NIC Bank
27. Oriental Commercial Bank
28. Prime Bank
29. Southern Credit Bank
30. Standard Chartered Bank

**Appendix II: Raw Data
2008**

Institution	Total Loans (kshM')	Government loans	Proportion	Personal loans	Proportion	Educational loans	Proportion	Business loans	Proportion	Mortgage loans	Proportion	ROA (%)
ABC Bank	3,793	243	0.064065	1065	0.28078	887.5	0.233984	1136	0.299499	497	0.131031	3.32
Bank of Africa	7,375	519	0.070373	2056.8	0.278888	1714	0.232407	2193.92	0.297481	959.84	0.130148	0.76
Bank of Baroda	9364	426	0.045493	2681.4	0.286352	2234.5	0.238627	2860.16	0.305442	1251.32	0.1336331	4.33
Bank of India	4,542	94	0.020696	1334.4	0.293791	1112	0.244826	1423.36	0.313377	622.72	0.137103	4.73
Barclays Bank of Kenya	111,414	3,328	0.029871	32425.8	0.291039	27021.5	0.242532	34587.5	0.310441	15132.0	0.135818	4.76
FC Stanbic Bank	46,488	2,283	0.049109	13261.5	0.285267	11051.2	0.237723	14145.6	0.304285	6188.7	0.133125	1.58
Chase Bank	5,315	176	0.033114	1541.7	0.290066	1284.75	0.241722	1644.48	0.309404	719.46	0.135364	2.4
Citibank	18,458	304	0.01647	5446.2	0.295059	4538.5	0.245883	5809.28	0.31473	2541.56	0.137694	7.05
City Finance Bank	241	48	0.19917	57.9	0.240249	48.25	0.200207	61.76	0.256266	27.02	0.112116	-0.57
Co-operative Bank of Kenya	60,418	7,125	0.117928	15987.9	0.264621	13323.2	0.220518	17053.7	0.282263	7461.02	0.12349	4
Credit Bank	1,976	166	0.084008	543	0.274798	452.5	0.228998	579.2	0.293117	253.4	0.128239	2.2
Ecobank	7,216	2,090	0.289634	1537.8	0.21311	1281.5	0.177591	1640.32	0.227317	717.64	0.099451	0.64
Equatorial	2,373	66	0.027813	692.1	0.29165	576.75	0.24304	738.24	0.3111	322.98	0.13610	-0.22

Commercial Bank					6		7				6	
Fidelity Commercial Bank	2,854	67	0.023476	836.1	0.292957	696.75	0.244131	891.84	0.312488	390.18	0.136713	1.72
Fina Bank	9,394	336	0.035768	2717.4	0.28927	2264.5	0.241058	2898.56	0.308554	1268.12	0.134993	0.97
Giro Commercial Bank	3,627	216	0.059553	1023.3	0.282134	852.75	0.235112	1091.52	0.300943	477.54	0.131663	2.12
Guardian Bank	4,278	725	0.169472	1065.9	0.249158	888.25	0.207632	1136.96	0.265769	497.42	0.116274	0.79
Habib A.G Zurich	2,246	64	0.028495	654.6	0.291451	545.5	0.242876	698.24	0.310882	305.48	0.136011	3.68
Habib Bank Ltd	1,058	70	0.066163	296.4	0.280151	247	0.233459	316.16	0.298828	138.32	0.130737	3.25
HFCK	11,690	1,271	0.108725	3125.7	0.267382	2604.75	0.222819	3334.08	0.285208	1458.66	0.124778	1.42
I & M	26,253	366	0.013941	7766.1	0.295818	6471.75	0.246515	8283.84	0.315539	3624.18	0.138048	4.42
Imperial Bank	8,624	348	0.040353	2482.8	0.287894	2069	0.239912	2648.32	0.307087	1158.64	0.134351	5.01
Kenya Commercial Bank	101,205	7,683	0.075915	28056.6	0.277225	23380.5	0.231021	29927.04	0.295707	13093.08	0.129372	3.14
Middle East Bank	1,802	151	0.083796	495.3	0.274861	412.75	0.229051	528.32	0.293185	231.14	0.128269	0.91
National Bank of Kenya	10,843	1,893	0.174583	2685	0.247625	2237.5	0.206354	2864	0.264134	1253	0.115558	4.21
NIC Bank	30,860	905	0.029326	8986.5	0.291202	7488.75	0.242669	9585.6	0.310616	4193.7	0.135894	3.48
Oriental Commercial Bank	1,443	485	0.336105	287.4	0.199168	239.5	0.165974	306.56	0.212446	134.12	0.092945	2.98
Prime Bank	9,936	510	0.051329	2827.8	0.284601	2356.5	0.237168	3016.32	0.303575	1319.64	0.132814	2.31

Southern Credit Bank	2,946	291	0.098778	796.5	0.270367	663.75	0.225305	849.6	0.288391	371.7	0.126171	0.11
Standard Chartered Bank	44,551	388,448	8.719176	129899.7	2.915753	108249.8	2.429794	138559.7	3.110136	60619.86	1.360685	4.77

2007

Institution	Total loans Ksh.('M')	Govrnment loans	Proportion	Personal loans	Proport ion	Educatio n loans	Proport ion	Busines s loans	Proporti on	Mortga ge loans	Proport ion	ROA (%)
ABC Bank	3,597	255	0.070892	1002.6	0.278732	835.5	0.232277	1102.86	0.306606	401.04	0.111493	3.01
bank of Africa	4,951	372	0.075136	1373.7	0.277459	1144.75	0.231216	1511.07	0.305205	549.48	0.110984	2.06
Bank Of baroda	7,203	245	0.034014	2087.4	0.289786	1739.5	0.241499	2296.14	0.318776	834.96	0.115918	3.55
Bank of India	3,641	77	0.021148	1069.2	0.293656	891	0.244713	1176.12	0.323021	427.68	0.117462	4.58
Barclays Bank of Kenya	107,953	2,607	0.024149	31603.8	0.292755	26336.5	0.243963	34764.18	0.322031	12641.52	0.117102	4.49
FC Stanbic Bank	19,959	296	0.01483	5898.9	0.295551	4915.75	0.246292	6488.79	0.325106	2359.56	0.11822	3.46
Chase Bank	3,387	136	0.040154	975.3	0.287954	812.75	0.239962	1072.83	0.316749	390.12	0.115182	3.11
Citibank	12,967	343	0.026452	3787.2	0.292064	3156	0.243387	4165.92	0.321271	1514.88	0.116826	3.77
City Finance Bank	273	118	0.432234	46.5	0.17033	38.75	0.141941	51.15	0.187363	18.6	0.068132	-3.83
Co-operative Bank of Kenya	45,300	6,871	0.151678	11528.7	0.254497	9607.25	0.212081	12681.57	0.279946	4611.48	0.101799	3.19
Credit Bank	1,753	121	0.069025	489.6	0.279293	408	0.232744	538.56	0.307222	195.84	0.111717	3.9
Ecobank	6,676	1,717	0.25719	1487.7	0.22284	1239.75	0.18570	1636.47	0.245127	595.08	0.08913	1.19

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Equatorial Commercial Bank	2,360	55	0.023305	691.5	0.293008	576.25	0.244174	760.65	0.322309	276.6	0.117203	1.5
Fidelity Commercial Bank	2,159	142	0.065771	605.1	0.280269	504.25	0.233557	665.61	0.308296	242.04	0.112107	1.53
Fina Bank	6,741	357	0.05296	1915.2	0.284112	1596	0.23676	2106.72	0.312523	766.08	0.113645	0.73
Giro Commercial Bank	3,295	225	0.068285	921	0.279514	767.5	0.232929	1013.1	0.307466	368.4	0.111806	0.45
Guardian Bank	4,020	730	0.181592	987	0.245522	822.5	0.204602	1085.7	0.270075	394.8	0.098209	3.29
Habib A.G Zurich	1,684	37	0.021971	494.1	0.293409	411.75	0.244507	543.51	0.322749	197.64	0.117363	1.09
Habib Bank Ltd	997	64	0.064193	279.9	0.280742	233.25	0.233952	307.89	0.308816	111.96	0.112297	4.4
HFCK	9,335	1,589	0.17022	2323.8	0.248934	1936.5	0.207445	2556.18	0.273828	929.52	0.099574	4.81
I & M	19,388	173	0.008923	5764.5	0.297323	4803.75	0.247769	6340.95	0.327055	2305.8	0.118929	3.51
Imperial Bank	7,335	334	0.045535	2100.3	0.286339	1750.25	0.238616	2310.33	0.314973	840.12	0.114536	3.04
Kenya Commercial Bank	72,179	7,901	0.109464	19283.4	0.267161	16069.5	0.222634	21211.74	0.293877	7713.36	0.106864	5.4
Middle East Bank	1,955	68	0.034783	566.1	0.289565	471.75	0.241304	622.71	0.318522	226.44	0.115826	3.89
National Bank of Kenya	12,386	4,542	0.366704	2353.2	0.189989	1961	0.158324	2588.52	0.208988	941.28	0.075995	4.09
NIC Bank	22,878	669	0.029242	6662.7	0.291227	5552.25	0.242689	7328.97	0.32035	2665.08	0.116491	3.36
Oriental Commercial Bank	1,019	393	0.385672	187.8	0.184298	156.5	0.153582	206.58	0.202728	75.12	0.073719	10.43

Prime Bank	6,602	304	0.046047	1889.4	0.286186	1574.5	0.238488	2078.34	0.314805	755.76	0.114474	2.28
Southern Credit Bank	2,680	190	0.070896	747	0.278731	622.5	0.232276	821.7	0.306604	298.8	0.111493	-0.26
Standard Chartered Bank	40,775	1,306	0.032029	11840.7	0.290391	9867.25	0.241993	13024.77	0.31943	4736.28	0.116156	5.39

2006

Institution	Total loans Ksh.('M')	Government loans	Proportion	Personal loans	Proportion	Education loans	Proportion	Business loans	Proportion	Mortgage loans	Proportion	ROA (%)
ABC Bank	3,031	190	0.062686	852.3	0.281194	710.25	0.234329	951.735	0.314	326.715	0.107791	2.61
Bank of Africa	4,069	295	0.072499	1132.2	0.27825	943.5	0.231875	1264.29	0.310713	434.01	0.106663	0.95
Bank of India	3,319	87	0.026213	969.6	0.292136	808	0.243447	1082.72	0.326219	371.68	0.111986	3.19
Bank of Baroda	4,554	181	0.039745	1311.9	0.288076	1093.25	0.240064	1464.955	0.321685	502.895	0.110429	3.16
Barclays Bank of Kenya	78,411	4,504	0.057441	22172.1	0.282768	18476.75	0.23564	24758.85	0.315757	8499.305	0.108394	5.5
FC Stanbic Bank	11,564	216	0.018679	3404.4	0.294396	2837	0.24533	3801.58	0.328743	1305.02	0.112852	3.57
Chase Bank	2,072	56	0.027027	604.8	0.291892	504	0.243243	675.36	0.325946	231.84	0.111892	2.7
Citibank	12,644	317	0.025071	3698.1	0.292479	3081.75	0.243732	4129.545	0.326601	1417.605	0.112117	4.05
City Finance Bank	316	86	0.272152	69	0.218354	57.5	0.181962	77.05	0.243829	26.45	0.083703	-3.21
Co-operative Bank	43,895	15,474	0.352523	8526.3	0.19424	7105.25	0.16186	9521.0	0.216905	3268.41	0.07446	2.16

of Kenya					3		9	35		5		
Credit Bank	1,585	163	0.102839	426.6	0.26914 8	355.5	0.22429	476.37	0.300549	163.53	0.10317 4	3.44
Ecobank	5,734	1,272	0.221835	1338.6	0.23345	1115.5	0.19454 1	1494.7 7	0.260685	513.13	0.08948 9	0.53
Equatorial Commercial Bank	2,492	79	0.031701	723.9	0.29049	603.25	0.24207 5	808.35 5	0.32438	277.495	0.11135 4	2.37
Fidelity Commercial Bank	1,545	115	0.074434	429	0.27767	357.5	0.23139 2	479.05	0.310065	164.45	0.10644	1.1
Fina Bank	5,226	401	0.076732	1447.5	0.27698	1206.25	0.23081 7	1616.3 75	0.309295	554.875	0.10617 6	1.55
Giro Commercial Bank	3,181	161	0.050613	906	0.28481 6	755	0.23734 7	1011.7	0.318045	347.3	0.10918	1.16
Guardian Bank	3,579	619	0.172953	888	0.24811 4	740	0.20676 2	991.6	0.277061	340.4	0.09511	0.98
Habib A.G Zurich	1,335	35	0.026217	390	0.29213 5	325	0.24344 6	435.5	0.326217	149.5	0.11198 5	3.1
Habib Bank Ltd	854	63	0.07377	237.3	0.27786 9	197.75	0.23155 7	264.98 5	0.310287	90.965	0.10651 6	3.1
HFCK	8,695	2,350	0.27027	1903.5	0.21891 9	1586.25	0.18243 2	2125.5 75	0.244459	729.675	0.08391 9	0.19
I & M	14,853	151	0.010166	4410.6	0.29695	3675.5	0.24745 8	4925.1 7	0.331594	1690.73	0.11383 1	1.55
Imperial Bank	5,708	288	0.050456	1626	0.28486 3	1355	0.23738 6	1815.7	0.318097	623.3	0.10919 8	4.19
Kenya Commercial Bank	53,376	8,106	0.151866	13581	0.25444	11317.5	0.21203 3	15165. 45	0.284125	5206.05	0.09753 5	4.07
Middle East Bank	2,089	107	0.051221	594.6	0.28463 4	495.5	0.23719 5	663.97	0.317841	227.93	0.10911	3.42
National Bank of Kenya	58,717	32,226	0.548836	7947.3	0.13534 9	6622.75	0.11279 1	8874.4 85	0.15114	3046.46 5	0.05188 4	2.94

NIC Bank	17,347	777	0.044792	4971	0.286563	4142.5	0.238802	5550.95	0.319995	1905.55	0.109849	2.6
Oriental Commercial Bank	953	539	0.565582	124.2	0.130325	103.5	0.108604	138.69	0.14553	47.61	0.049958	-4.49
Prime Bank	5,164	284	0.054996	1464	0.283501	1220	0.236251	1634.8	0.316576	561.2	0.108675	1.83
Southern Credit Bank	2,943	648	0.220183	688.5	0.233945	573.75	0.194954	768.825	0.261239	263.925	0.089679	0.7
Standard Chartered Bank	37,253	1,491	0.040024	10728.6	0.287993	8940.5	0.239994	11980.27	0.321592	4112.63	0.110397	4.7

2005

Institution	Total loans Ksh.('M')	Government loans	Proportion	Personal loans	Proportion	Education loans	Proportion	Business loans	Proportion	Mortgage loans	Proportion	ROA (%)
ABC Bank	2,768	155	0.055997	783.9	0.283201	653.25	0.236001	849.225	0.306801	326.625	0.118	2.42
Bank of Africa	3,245	242	0.074576	900.9	0.277627	750.75	0.231356	975.975	0.300763	375.375	0.115678	0.14
Bank of Baroda	3747	188	0.050173	1067.7	0.284948	889.75	0.237457	1156.675	0.308694	444.875	0.118728	2.57
Bank of India	2,371	71	0.029945	690	0.291016	575	0.242514	747.5	0.315268	287.5	0.121257	1.72
Barclays Bank of Kenya	69,619	4,057	0.058274	19668.6	0.282518	16390.5	0.235431	21307.65	0.306061	8195.25	0.117716	5.17
FC Stanbic Bank	8,648	150	0.017345	2549.4	0.294796	2124.5	0.245664	2761.85	0.319363	1062.25	0.122832	2.96
Chase Bank	1,739	48	0.027602	507.3	0.291719	422.75	0.243099	549.575	0.316029	211.375	0.12155	2.49
Citibank	10,920	309	0.028297	3183.3	0.291511	2652.75	0.242926	3448.575	0.315804	1326.375	0.121463	4.15
City Finance Bank	366	87	0.237705	83.7	0.2286	69.75	0.1905	90.675	0.247746	34.875	0.09528	-9.14

					89		74				7	
Co-operative Bank of Kenya	44,548	15,459	0.347019	8726.7	0.195894	7272.25	0.163245	9453.925	0.212219	3636.125	0.081623	1.38
Credit Bank	1,867	168	0.089984	509.7	0.273005	424.75	0.227504	552.175	0.295755	212.375	0.113752	3.21
Ecobank	4,773	867	0.181647	1171.8	0.245506	976.5	0.204588	1269.45	0.265965	488.25	0.102294	0.14
Equatorial Commercial Bank	1,904	58	0.030462	553.8	0.290861	461.5	0.242384	599.95	0.3151	230.75	0.121192	2.97
Fidelity Commercial Bank	1,154	99	0.085789	316.5	0.274263	263.75	0.228553	342.875	0.297119	131.875	0.114276	0.75
Fina Bank	4,371	443	0.10135	1178.4	0.269595	982	0.224663	1276.6	0.292061	491	0.112331	1.24
Giro Commercial Bank	3,534	228	0.064516	991.8	0.280645	826.5	0.233871	1074.45	0.304032	413.25	0.116935	-0.11
Guardian Bank	3,549	604	0.170189	883.5	0.248943	736.25	0.207453	957.125	0.269689	368.125	0.103726	1.27
Habib A.G Zurich	1,158	35	0.030225	336.9	0.290933	280.75	0.242444	364.975	0.315177	140.375	0.121222	1.26
Habib Bank Ltd	763	49	0.06422	214.2	0.280734	178.5	0.233945	232.05	0.304128	89.25	0.116972	0.72
HFCK	10,131	3,687	0.363932	1933.2	0.19082	1611	0.159017	2094.3	0.206722	805.5	0.079508	0.92
I & M	11,368	281	0.024719	3326.1	0.292584	2771.75	0.24382	3603.275	0.316966	1385.875	0.12191	2.71
Imperial Bank	4,501	240	0.053321	1278.3	0.284004	1065.25	0.23667	1384.825	0.307671	532.625	0.118335	3.92
Kenya Commercial Bank	45,663	9,351	0.204783	10893.6	0.238565	9078	0.198804	11801.4	0.258446	4539	0.099402	2.49
Middle East Bank	1,735	209	0.120461	457.8	0.263862	381.5	0.219885	495.95	0.28585	190.75	0.109942	2.84

National Bank of Kenya	54,234	30,021	0.553546	7263.9	0.133936	6053.25	0.111614	7869.225	0.145098	3026.625	0.055807	2.64
NIC Bank	14,871	612	0.041154	4277.7	0.287654	3564.75	0.239712	4634.175	0.311625	1782.375	0.119856	1.95
Oriental Commercial Bank	148	160	1.081081	92.4	0.624324	77	0.52027	100.1	0.676351	38.5	0.260135	-6.23
Prime Bank	3,591	191	0.053189	1020	0.284043	850	0.236703	1105	0.307714	425	0.118351	1.75
Southern Credit Bank	2,439	482	0.197622	587.1	0.240713	489.25	0.200595	636.025	0.260773	244.625	0.100297	0.73
Standard Chartered Bank	35,118	1,076	0.03064	10212.6	0.290808	8510.5	0.24234	11063.65	0.315042	4255.25	0.12117	4.82

2004

Institution	Total loans Ksh.('M')	Government loans	Proportion	Personal loans	Proportion	Education loans	Proportion	Business loans	Proportion	Mortgage loans	Proportion	ROA (%)
ABC Bank	2,131	66	0.030971	619.5	0.290709	516.25	0.242257	702.1	0.32947	227.15	0.106593	2.83
Bank of Africa	3,121	64	0.020506	917.1	0.293848	764.25	0.244873	1039.38	0.333028	336.27	0.107744	2.81
Bank of India	1,609	87	0.054071	456.6	0.283779	380.5	0.236482	517.48	0.321616	167.42	0.104052	2.04
Bank of baroda	2797	105	0.03754	807.6	0.288738	673	0.240615	915.28	0.327236	296.12	0.105871	3.29
Barclays Bank of Kenya	67,750	4,718	0.069638	18909.6	0.279108	15758	0.23259	21430.88	0.316323	6933.52	0.10234	5.08
FC Stanbic Bank	7,080	89	0.012571	2097.3	0.296229	1747.75	0.246857	2376.94	0.335726	769.01	0.108617	1.33

Chase Bank	1,294	14	0.010819	384	0.2967 54	320	0.2472 95	435.2	0.336321	140.8	0.10881	-4.4
Citibank	9,814	210	0.021398	2881.2	0.2935 81	2401	0.2446 5	3265.36	0.332725	1056.4 4	0.10764 6	1.42
City Finance Bank	334	26	0.077844	92.4	0.2766 47	77	0.2305 39	104.72	0.313533	33.88	0.10143 7	2.03
Co-operative Bank of Kenya	33,024	6,015	0.18214	8102.7	0.2453 58	6752.25	0.2044 65	9183.06	0.278072	2970.9 9	0.08996 5	0.77
Credit Bank	1,396	44	0.031519	405.6	0.2905 44	338	0.2421 2	459.68	0.329284	148.72	0.10653 3	1.74
Ecobank	2,714	407	0.149963	692.1	0.2550 11	576.75	0.2125 09	784.38	0.289013	253.77	0.09350 4	-1.47
Equatorial Commercial Bank	1,823	73	0.040044	525	0.2879 87	437.5	0.2399 89	595	0.326385	192.5	0.10559 5	3.6
Fidelity Commercial Bank	1,175	109	0.092766	319.8	0.2721 7	266.5	0.2268 09	362.44	0.30846	117.26	0.09979 6	0.07
Fina Bank	3,798	369	0.097156	1028.7	0.2708 53	857.25	0.2257 11	1165.86	0.306967	377.19	0.09931 3	-0.61
Giro Commercial Bank	3,274	247	0.075443	908.1	0.2773 67	756.75	0.2311 39	1029.18	0.314349	332.97	0.10170 1	0.3
Guardian Bank	3,181	306	0.096196	862.5	0.2711 41	718.75	0.2259 51	977.5	0.307293	316.25	0.09941 8	1.29
Habib A.G Zurich	1,082	43	0.039741	311.7	0.2880 78	259.75	0.2400 65	353.26	0.326488	114.29	0.10562 8	1.92
habib Banl Ltd	886	14	0.015801	261.6	0.2952 6	218	0.2460 5	296.48	0.334628	95.92	0.10826 2	2.71
HFCK	10,834	4,251	0.392376	1974.9	0.1822 87	1645.75	0.1519 06	2238.22	0.206592	724.13	0.06683 9	0.82
I & M	8,468	270	0.031885	2459.4	0.2904 35	2049.5	0.2420 29	2787.32	0.329159	901.78	0.10649 3	2.49
Imperial Bank	4,089	219	0.053558	1161	0.2839	967.5	0.2366	1315.8	0.32179	425.7	0.10410	4.6

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Kenya Commercial Bank	45,218	8,993	0.198881	10867.5	0.240336	9056.25	0.20028	12316.5	0.27238	3984.75	0.088123	1.54
Middle East Bank	1,701	93	0.054674	482.4	0.283598	402	0.236332	546.72	0.321411	176.88	0.103986	2.89
National Bank of Kenya	34,627	12,325	0.355936	6690.6	0.193219	5575.5	0.161016	7582.68	0.218982	2453.22	0.070847	2.43
NIC Bank	12,089	548	0.04533	3462.3	0.286401	2885.25	0.238667	3923.94	0.324588	1269.51	0.105014	2.24
Oriental Commercial Bank	1,355	811	0.598524	163.2	0.120443	136	0.100369	184.96	0.136502	59.84	0.044162	-22.63
Prime Bank	2,783	171	0.061444	783.6	0.281567	653	0.234639	888.08	0.319109	287.32	0.103241	1.8
Southern Credit Bank	2,163	191	0.088303	591.6	0.273509	493	0.227924	670.48	0.309977	216.92	0.100287	1.59
Standard Chartered Bank	27,065	508	0.01877	7967.1	0.294369	6639.25	0.245308	9029.38	0.333618	2921.27	0.107935	4.01

2003

Institution	Total loans Ksh.('M')	Govern ment loans	Proportion	Personal loans	Proportion	Educatio n loans	Proportion	Busines s loans	Proportio n	Mortg age loans	Proporti on	ROA (%)
ABC Bank	1,795	78	0.043454	515.1	0.286964	429.25	0.239136	566.61	0.31566	206.04	0.114786	1.74
Bank of Africa	3,345	64	0.019133	984.3	0.29426	820.25	0.245217	1082.73	0.323686	393.72	0.117704	0.01
Bank of baroda	1,886	75	0.039767	543.3	0.28807	452.75	0.240058	597.63	0.316877	217.32	0.115228	1.79
Bank of India	1,452	88	0.060606	409.2	0.2818	341	0.2348	450.12	0.31	163.68	0.11272	3.04

					18		48				7	
Barclays Bank of Kenya	60,038	3,568	0.059429	16941	0.2821 71	14117.5	0.2351 43	18635.1	0.310388	6776.4	0.11286 9	4.92
FC Stanbic Bank	4,109	130	0.031638	1193.7	0.2905 09	994.75	0.2420 91	1313.07	0.31956	477.48	0.11620 3	-1.52
Chase Bank	937	11	0.01174	277.8	0.2964 78	231.5	0.2470 65	305.58	0.326126	111.12	0.11859 1	3.49
Citibank	8,795	215	0.024446	2574	0.2926 66	2145	0.2438 89	2831.4	0.321933	1029.6	0.11706 7	2.92
City Finance Bank	347	22	0.063401	97.5	0.2809 8	81.25	0.2341 5	107.25	0.309078	39	0.11239 2	1.76
Co-operative Bank of Kenya	23,250	5,156	0.221763	5428.2	0.2334 71	4523.5	0.1945 59	5971.02	0.256818	2171.2 8	0.09338 8	0.56
Credit Bank	912	37	0.04057	262.5	0.2878 29	218.75	0.2398 57	288.75	0.316612	105	0.11513 2	2.28
Ecobank	2,723	254	0.093279	740.7	0.2720 16	617.25	0.2266 8	814.77	0.299218	296.28	0.10880 6	-18.1
Equatorial Commercial Bank	1,537	92	0.059857	433.5	0.2820 43	361.25	0.2350 36	476.85	0.310247	173.4	0.11281 7	3.26
Fidelity Commercial Bank	825	84	0.101818	222.3	0.2694 55	185.25	0.2245 45	244.53	0.2964	88.92	0.10778 2	1.45
Fina Bank	2,854	219	0.076734	790.5	0.2769 8	658.75	0.2308 16	869.55	0.304678	316.2	0.11079 2	1.82
Giro Commercial Bank	2,981	184	0.061724	839.1	0.2814 83	699.25	0.2345 69	923.01	0.309631	335.64	0.11259 3	0.78
Guardian Bank	2,776	161	0.057997	784.5	0.2826 01	653.75	0.2355 01	862.95	0.310861	313.8	0.11304	1.27
Habib A.G Zurich	726	42	0.057851	205.2	0.2826 45	171	0.2355 37	225.72	0.310909	82.08	0.11305 8	1.92
Habib Bank Ltd	890	17	0.019101	261.9	0.2942 7	218.25	0.2452 25	288.09	0.323697	104.76	0.11770 8	2.67

HFCK	11,873	4,774	0.402089	2129.7	0.1793 73	1774.75	0.1494 78	2342.67	0.197311	851.88	0.07174 9	0.91
I & M	5,498	183	0.033285	1594.5	0.2900 15	1328.75	0.2416 79	1753.95	0.319016	637.8	0.11600 6	2.35
Imperial Bank	3,171	274	0.086408	869.1	0.2740 78	724.25	0.2283 98	956.01	0.301485	347.64	0.10963 1	5.16
Kenya Commercial Bank	35,901	8,786	0.244729	8134.5	0.2265 81	6778.75	0.1888 18	8947.95	0.24924	3253.8	0.09063 3	1.45
Middle East Bank	1,512	83	0.054894	428.7	0.2835 32	357.25	0.2362 76	471.57	0.311885	171.48	0.11341 3	2.29
National Bank of Kenya	31,085	10,765	0.346309	6096	0.1961 07	5080	0.1634 23	6705.6	0.215718	2438.4	0.07844 3	1.9
NIC Bank	7,629	733	0.096081	2068.8	0.2711 76	1724	0.2259 8	2275.68	0.298293	827.52	0.10847	3.27
Oriental Commercial Bank	1,675	553	0.330149	336.6	0.2009 55	280.5	0.1674 63	370.26	0.221051	134.64	0.08038 2	- 10.91
Prime Bank	2,223	110	0.049483	633.9	0.2851 55	528.25	0.2376 29	697.29	0.313671	253.56	0.11406 2	1.57
Southern Credit Bank	1,968	145	0.073679	546.9	0.2778 96	455.75	0.2315 8	601.59	0.305686	218.76	0.11115 9	1.51
Standard Chartered Bank	19,328	404	0.020902	5677.2	0.2937 29	4731	0.2447 74	6244.92	0.323102	2270.8 8	0.11749 2	6.25

Source, Research Data