THE EFFECT OF GROSS LOAN PORTFOLIO ON THE VALUE OF LISTED COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

This research project is my original work. It has not been presented and submitted to any university or college for examination.

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

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DEDICATION

I dedicate this excellent work to my parents for being the cornerstone that fueled this study. Their unwavering support and prayers were crucial for promoting this research. Excelling in this work was due to the family commitment and numerous prayers.

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LIST OF ABBREVIATIONS AND ACRONYMS

CAMELS   Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity

CBK   Central Bank of Kenya

CDT   Credit Default Theory

GDP   Gross Domestic Product

GLP   Gross Loan Portfolio

IAS   International Accounting Standards

KBA   Kenya Bankers Association

LSR   Loan Serviceability Ratio

MFI   Micro Finance Institutions

MPC   Marginal Product of Capital

MPT   Modern Portfolio Theory

NIM   Net Interest Margin

NPA   Non-performing Assets

NPL   Non-Preforming Loans

NSE   Nairobi Securities Exchange

ROA   Return on Assets

ROE   Return on Equity

SPSS   Statistical Package for Social Sciences

USA   United States of America

ABSTRACT

The study aimed to assess the impact of gross loan portfolio on the value of Kenyan commercial banks. Contextually, it prioritized banks listed at NSE. It set out specific variables such as; real estate loans, retail and personal, enterprise and trade loans, and agricultural loans. The assessment provided a diligent inquiry into research questions, bridging the research gap. Notably, the period of study spanned from 2017-2021. In addition, the population entailed eleven registered listed commercial banks. Panel data on listed commercial banks were collected across five years to investigate the connection between gross loan portfolio and bank value. The study was executed with the assistance and reliance on secondary cross-sectional panel data design. Data was obtained from the respective listed kenyan banks annual and published statements, historical data from the Nairobi securities exchange as well as Central Bank. Quantitative techniques were employed in data analysis; collected data was tabulated and presented to make easy to understand and interpret. SPSS statistical analysis software was used in this research to manipulate the data and visualize the results. This ANOVA p-value of 0.05 shows that the model was statistically significant. The regression analysis showed a 56.4% correlation among the variables that were under study however, only retail and personal loans alongside trade and enterprise loans had a significant relationship with bank value. The model summary also shows that 31.8% variation in banks' value was caused by agricultural , Real estate , enterprise and trade loans and retail and personal loans. It is worth emphasizing that real estate loans, retail and personal loans, agricultural loans, and enterprise and trade loans played a pivotal role in the bank's value. The evaluation of the loan diversification portfolio recommends strengthening of policies that increase the performance of loans and sealing loopholes that create avenues for defaults. Stressing on the need for a diversification strategy to avoid the negative association of bad loans on value of the bank. Finally, in a replicate study addition of other predictor variables, moderating and intervening variables can spearhead the conclusive findings.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Gross Loan, at any time represents the outstanding principal balance on all issued credits for a given accounting period. It is a substantial Asset and possibly the predominant revenue earner to financial banks in terms of interest earned. (Koch and MacDonald, 2000). The loan portfolio is therefore typically the principal income earner and hence largest asset; on the otherhand, it poses the greatest threat in risk to the bank's financial soundness and safety of its assets. (Caprio, and Kilingebiel, 1996). To minimize the total loan portfolio risk and subsequently increase the value and financial viability, it is key for listed banks to consider diversifying their loan portfolios while employing effective monitoring and portfolio management strategies. Whether due to relaxed credit standards, or weak prevailing economic conditions, unchecked loan portfolio issues have in the past caused bank losses and failures; it is thereby a modern trend that Credit managers strive to minimize Portfolio risk while optimizing returns in the long run. (Von Stauffenberg, 2002).

The study's theoretical framework was anchored by Modern Portfolio Theory (MPT) which explains how to construct portfolios that can maximize returns under the given economic and prevailing risk conditions. MPT makes assumptions that managers are risk averse that is, they prefer less risky portfolios to risky ones given the level of return. Risk aversion dictates that investments should be made across multiple assets. The key takeaway is diversification, the characteristics of various components of a loan portfolio should not be scrutinized independently but be viewed on how it impacts the overall portfolio risk and return. The research also

utilized Credit Default Theory (CDT) in the scrutiny of the listed banks in the Nairobi Security Exchange (NSE), assumptions are made that there exists a linear relationship between stock return and gross loans given other macroeconomic variables that capture systematic risk. Finally, the Neo-classical theory of investment assumes portfolio managers will act in the capital investors' best interest, and the loan portfolio's structure and quality will ensure the maximized value of future returns for an acceptable level of risk.

The recent emergence of the COVID-19 epidemic has exposed the banking fraternity to some of the most dramatic economic shocks of the present day and has revealed gaps in standard practices, some of which are poor risk-rating frameworks, no emphasis on the linkage of the loan portfolio to strategic return objectives, and inability make rapid decisions in offloading risky loans. There have also been developments in managing commercial banks' portfolio loan books. According to the central bank's Prudential Guidelines Handbook, there has been increased scrutiny on the banking institution's loan portfolio and reported earnings to ensure strict compliance, each Bank shall ensure to review its loan portfolio at least every month. CBK has licensed Crédit reference bureaus like Metropol as a measure to curb the ever-increasing non-performing loans promoting healthy well-balanced loan portfolios.

1.1.1 Gross Loan Portfolio

The gross loan portfolio refers to the current outstanding deficit of the Bank's issued credits, including restructured, delinquent, and current loans issued to entities as of a given date. Written-off loans are not included in the computation of Gross Loans so are loans that have been extended to employees. It is a mandatory requirement that they are included in the bank's financial statements as reporting indicators that are

part of assets in a credit organization as per the prudent guidelines CBK, 2021. Kenyan banks play an important role in developing our economy besides playing a pivotal role in the empowerment of individuals and businesses in terms of savings, investments, and credit creation as the excess on deposited funds is borrowed. The loan portfolio is therefore present in the bank statement of financial position as an asset. Commercial banks also have a role of circulating funds in the economy and with the help of CBK regulate the monetary policy ensuring stable inflation and consistent growth of the economy. Commercial banks concentrate their lending to only a few sectors of the economy enhancing their ability to monitor such concentrated loan portfolios due to reduced portfolio credit risk.

Therefore, lending is the most predominant activity commercial banks engage in to earn revenue. The Loan portfolio is of utmost importance as it is the largest asset many financial institutions hold (Comptroller's Handbook, 1998). As such, it presents the greatest risk to the financial soundness and the bank's overall wellbeing as a future concern. The handbook stresses the importance of effectively managing the Gross Loan portfolio to ensure risks inherent in the credit risk procedure are identified and controlled to prevent or minimize bank losses and failures that may affect valuation in the stock market. Corporate finance theory directs that financial institutions should concentrate their loan portfolios in economic sectors that are proven to be less risky to take advantage of the proportional benefit brought by managerial experience and expertise (Denis et al., 1997). This will enable them to reduce bank riskiness and improve long-term profit efficiency.

Athanasoglou et al. (2006), in their study, measured Gross loan portfolio (GLP) by employing profitability ratios that include Return on Equity and Assets (ROE and ROA) alongside net interest margin (NIM). In our study, GLP entailed the natural

logarithm of the following loans advanced; real estate, personal, enterprise and trade loans, and agricultural loans it is worth mentioning that many big commercial banks benefit from having well-differentiated loan portfolios reaping well from the monopolistic scale of their operations.

1.1.2 Value of Listed Commercial Banks

Market valuation is the total value of all publicly traded outstanding shares, calculated by multiplying shares outstanding by the share price prevailing at the time it indicates the fair economic worth of the bank. Stocks are the predominant actively traded securities in the Nairobi stock exchange and are regarded as a stable long-term source of inexpensive capital, the changes in share price affect a banks market capitalization and, therefore its market value. Stocks give the holder the right to own part of the company and share in the profits if the company is profitable or else bear any loss incurred (Arkan, 2016). Listed banks therefore can measure their financial wellbeing for a given financial period and make comparisons with their peers in the sector based on the value of their outstanding shares.(Hales, 2005).

Stock markets distribute resources in the economy to the most productive opportunities, spurring economic growth (Kurihara, 2006). Outstanding shares are traded openly in the stock market; hence they reflect the public's confidence and perception of the value and utilization of Equity to generate revenue. Market value enables analysts and investors to have a bigger picture of the potential or a bank's overall value, it eliminates the uncertainty of what an asset is worth. Commercial banks with higher profitability levels receive superior valuation in anticipation that their earnings will grow or remain stable in the future.

Bierwag-Kaufman (1983) measured market value by analyzing determinants that include the current value of the Bank assets net of liabilities, capital gains on assets

and liabilities, inflation level, franchise value, and tax savings. The study (Ball & Brown, 1968) places accounting profits solely as the most important determinant of market value, accounting profits reflect the efficiency in operations by management and policies in place to ensure maximization of shareholder returns. Talib (2014) in his Research, indicates that the value of a company can be measured based on a combination of factors including liquidity, age of the firm, level of leverage, and growth rate, among others. Purwohandoko (2017), in a study of listed companies in Indonesia, observed that the value of a firm could be measured based on its capitalization structure and its return on investment. The value of banks in this research was measured by the fair market value of the respective listed commercial bank shares at the end of each year under study which is the market capitalization.

1.1.3 Gross Loan Portfolio and Value of Listed Commercial Banks

Loan portfolio and its correlation with financial performance and viability has been a subject of interest among many scholars. Agbanzo (1997) noted that banks with risky gross loan portfolios have high exposure; this affects the net profit margins, which will in turn impact shareholder returns negatively. More diversified loan portfolios iron out sectorial differences in both liquidity and interest risk that affect the interest margins that are a component of bank profitability. Saba, Kouser, and Azeem (2012) opinioned that the fundamental determinant for bank survival is the credit policy decisions by management that may influence the non-performing Loan rate. Since banks obtain most of their income from selling out loans, it needs to not only assess the quality of individual borrowers and the overall loan Portfolio. This will reduce the default rate and maximize returns hence value for shareholders.

Achou and Tenguh (2008) discovered the existence of a notable correlation between returns generated by bank assets, in our case being the Gross Loan Portfolio, risk

management strategies employed, and performance. Proper portfolio and good credit risk management strategies result in enhanced overall performance, securing the interests and assets of shareholders.

Managers have been prudently following loan approval guidelines to keenly concentrating their efforts on identifying quality loans for approval and performance monitoring thereafter. However, a new trend started to emerge at the turn of the new century. After the financial crisis problems such as those experienced when lending to agricultural and real estate entities called for strict terms and the emergence of portfolio management to provide a sufficient lead time for corrective measures. (Kitinji and Waweru, 2007) attribute the major Kenyan banking crises of both 1986, and 1998 that led to the collapse of over 20 commercial banks to inadequate loan portfolio management policies.

The aforementioned bank policies help determine the optimum level of Gross Loan Portfolio held by commercial banks (Grace, 2010). The risk signature of the various constituents of the loan portfolio is also considered to ensure a balanced Portfolio. The study (Grace, 2010) revealed an adverse correlation between bank performance and Loan portfolio risk, a well-balanced portfolio will positively influence a bank's success in return improve the stock value. Since lending is a risk-return relationship credit should be priced in such a manner that covers the risk exposure to the bank's assets, gross loan portfolio as a substantial bank asset is bound to reflect in the final valuation of any bank.

1.1.4 Listed Commercial Banks.

In Kenya Central bank provides the legal and regulatory framework to govern the operation of commercial banks, it publishes prudential guidelines to govern the day-to-day running of banks under its mandate. It also enhances surveillance to ascertain

that the formulated rules and regulations are adhered to. Licensing of commercial banks is also the sole responsibility of CBK. To ensure sustainable quality and prudence in the management of bank Loan portfolios, the government has made substantial changes to the Banking Act Cap 488 over time to strengthen oversight regarding banks' licensing, capital management, risk adequacy, and even capital governance. Non-performing facilities are also strictly monitored to ensure they remain at acceptable levels and well classified, each board credit committee is tasked by CBK Prudential Guideline CBK/PG/04 to review the loan portfolio and give adequate provision for bad and doubtful debts, to ensure a sound lending policy is approved, and adopted by the board of Directors. (CBK 2015).

As per the end of December 2021, we had forty-two commercial banks organized into three distinct classes based on their market share and profit levels large size banks-tier one, medium-size-tier two, and small banks- three. However, this study will focus on the eleven listed banks on NSE. Listed banks have their stocks traded in the open market at NSE, giving them much-needed liquidity and visibility. The NSE is governed by the Capital markets Act (cap 485A) which stipulates access, rights, qualification, admission, and deregistration of market participants. Market capitalization in the stock exchange is used to quickly estimate the value of listed banks based on the total outstanding shares and the price at which investors are willing to pay for them.

The banking sector in the country has over time enjoyed significant growth not only in the retail but also in the corporate sector (Afande, 2014). This is supported by increased demand for financing across all economic sectors, including real-estate personal, enterprise and trade, and agricultural loans. (CBK 2018)

Kenya bankers' Association (KBA), is a united alliance of 43 licensed banks leading

advocacy for the financial sector to reinforce professionalism in the industry, safeguarding customer deposits and investor returns. It also maintains industrial relations and liaison with industry players like the Chamber of Commerce, and Federation of Kenya Employers, among others to manage the public relation aspect of the banking industry

1.2 Research Problem

Loans are a critical undertaking to financial banks hence the significance of loan portfolio management, weakened bank financial performance has been experienced globally due to high rates of bad debts ever since the economic crisis of the year 2007. Various studies have linked the increase of Non-Preforming Loans (NPL) to a high possibility of an eminent bank crisis wiping out bank assets and leading to liquidity problems in addition to total loss of value.(Ari et al., 2020) .Case in point, the Asian Financial crisis of 1997 where about 60 commercial banks collapsed due to the existence of non-performing loans representing about 75% of large regularly renegotiated loans that managers had more discretion over due to their frequent nature as compared to other classes of loans in the portfolio (CC Liu · 1997). This reveals how the performance and value of banks can be underpinned by the kind of loan portfolios held.

Though several studies have been undertaken to demonstrate the interrelationship between loan portfolio and bank returns analysis has been limited in scope and context, mainly addressing advanced economies. Tabak et al. (2011) investigated Brazilian commercial Banks in the context of emerging markets; their findings were that loan portfolio concentration improves returns while lowering the possibility of default. Portfolio development has been associated with the profit motive of more profits and less risk (Acharya et al., 2006), not factoring in the impact on the overall

value. Secondly, existing studies have focused on the influence of average gross loan diversification on financial performance, not considering other diverse effects affecting the various tiers of banks given that the value of banks could be affected more by Gross loans in other groups of banks than others, highlighting other causal effects.

Locally, other scholars have carried out studies related to this topic. Macharia (2012) focused on the link between the performance of financial banks and the NPLs level. The study results were that NPAs and the credit amount have little to no influence on the bulk of the bank profit. Hence, the existence of other variables that have major effects on bank's performance compared to non-performing loans. Kithinji (2011), embarked on a study looking into the stability of bank performance given the credit management strategies employed, he concluded that the value of the credit, profits, and the level of NPAs have no relationship. Nevertheless, those studies have not captured the effects of the spread of Gross loan portfolio to stock prices or value for listed commercial bank. Their studies only applied used non-performing loan ratios.

Research by Ongore and Kusa (2013) in Kenya highlighted the factors which influence financial performance. Among other macroeconomic factors he focused on assets quality, capital adequacy, management efficiency and management of liquidity. CAMEL's model is applied extensively in discussions about the quality of loans that financial institutions lend. Nevertheless, the study never indicated the impact of the loan portfolios on banks' financial value and performance, prompting this research's vitality to solve the need for commercial banks to maintain and build efficient and effective loan portfolios that will strengthen financial performance. The studies mentioned above have also linked NPL to financial performance.

However, they have not explicitly demonstrated how the value of financial banks is affected by the individual classes of loans that exist in the loan portfolio, factoring in the degree and level of default within the portfolio. Stiff competition among commercial banks has led to loan portfolio sectorial diversification across different economic sectors; this research will expound on the implication of such diversification on the value of listed banks.

This study is also set to determine whether the value of listed banks can be affiliated with the different classes of loan portfolio constituents at any time of the financial year. The research, therefore, sought to identify and fill gaps in answering the research question; what is the Effect of Gross Loan Portfolio on the Value of Listed Banks in Kenya?

1.3 Research Objective

The study's general objective was to establish the Effect of the Gross Loan Portfolio on the Value of Listed Banks in Kenya.

1.4 Value of The Study

Bank loans being the greatest assets in Kenyan listed banks, credit managers will be more enlighted on how their efforts to optimize the gross portfolio and manage risks affect the overall value of the bank. The results will give a practical advantage to practitioners as it willexpand their knowledge in credit management. Other scholars will find a base for further research on loan portfolio activities and their management in light of company value, especially concerning the financial sector. The research methodology employing multiple linear regression and correlation will aid other scholars who seek to explain complex relationships between variables in their respective studies.

The study will also benefit the government, through CBK as the listed bank's

regulatory authority, especially regarding interest rates, lending, and borrowing.CBK will ensure that loan portfolios adhere to policies put in place to ensure potential drivers of credit risk are identified in time and mitigated. Policymakers will find a ground to formulate measures to mitigate economic and financial crises that may arise from poor Loan management, and seal any loopholes in the current regulatory framework.

The study will play a key role in managerial practice to ensure that commercial banks adhere to borrowing agreements ensuring there is adequate provision for doubtful and bad debt to give a clear comprehensive overview of the bank assets. Managers ought to establish a clear link between the Gross loan portfolio, bank-specific factors, and the overall performance to ensure banks do not collapse, leading to a total loss in value.

Banking sector investors, industry analysts, clients and other shareholders will gain insight into loan management practices by commercial banks and they affect the value of their investments. This will further promote good managerial practice, therefore, aligning their goals

Finally, this study will further my knowledge of how the gross loan portfolio affects the value of banks, increasing the existing pool of information available on this topic and gaining industry experience.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter details the appropriate literature associated with this study. It describes theories underpinning the research, empirical evidence, and the determinants of value. The chapter reviews the CAMEL model, frequently employed to determine the value of the banks. The chapter also contains a conceptual framework that describes the study variables.

2.2 Theoretical Background

The theories to be reviewed in this chapter have been tried and studied over time by scholars within the field of finance to prove that Gross loan portfolio can influence the value of firms, especially in the case of listed financial banks. A theory is developed to elaborate and build upon in an abstract but rational manner an existing body of knowledge or phenomena. Theories utilized in this Research are Modern portfolio theory, Credit default theory, and Neo-classic theory of investment.

2.2.1 Modern Portfolio Theory

This theory was coined by Harry Markowitz in 1952 and has been put into practice with favorable outcomes by many present-day managers in portfolio management and market risk diversification. Modern portfolio theory (MPT) is a theory of investing that seeks to maximize return for a given acceptable amount of portfolio risk, or equally minimize the level of risk for a given level of expected return, by selecting the right mix and quantities of assets. Firms have engaged the use of portfolio risk models in managing not only their returns on investment but also market risk exposure. In practice, however, the application of MPT in managing loan credit risk has been unattainable as the process and practice of minimizing

losses and understanding the adequacy of financial institution capital and loan reserves has remained to be a major challenge (Margrabe, 2007); hence the use of earnings and value by many commercial banks to manage interest and market exposure risks.

Markowitz aimed to construct an efficient portfolio by spreading investments across unrelated stocks hence maximum potential profit irrespective of the economic conditions. Different combinations of such portfolios gave the highest profits for the least level of risk (Mandelbrot, 2004). This theory, however, fails to suggest a preferred method for stock analysis or a suitable method for portfolio identification and selection. Markowitz instead focused on coming up with a general structure for the whole process majoring further in the task of performing portfolio analysis. (Sharpe W. F., Portfolio Analysis, 1964). Traditional finance also assumes that investors are rational thinkers and will always maximize utility. Behavioral finance, on the other hand, acknowledges how bounded rationality and cognitive biases inhibit rational optimal decisions as we attempt to satisfy rather than optimize. Barberis and Thaler (2003). Behavioral economics (Sharpe, William 1964) has challenged thebasic assumptions of Modern Portfolio Theory of recent times, the basic assumptions of MPT are that the investors face a risk-return tradeoff and that returns are normally distributed which isn't the case as returns aren't normally distributed as evidenced by extreme tail risks and the long-term capital management crisis in 1998 in the USA forcing the government to intervene to prevent the collapse of financial markets.

Markowitz's theory made strategic portfolio diversification manageable as it points to a strategy of creating high-value loans and avoiding excessively risky loans, minimizing the exposure of having a single borrower or multiple loan defaults from

a specific industry or sector of the economy.

2.2.2 Credit Default Theory.

Instances, where there is an indirect link connecting the effect of default, performance and value of commercial entities, are best fitted for this theory. This theory was hypothesized in 2007 by Wilson Sy. The author delineates the causes of credit default in financial institutions to be majorly attributed to both delinquency and insolvency. It strives to demonstrate a link between the cause and influence of credit default leading to diminishing or total loss of value. The evaluation of credit risk in a fast-ever-changing environment remains an impediment to a high number of operating credit default theories since they cannot coordinate the effects of default (Sy, 2007). The inability to repay loans before due dates is known as delinquency which is caused by failures of liquidity while insolvency means a situation where liabilities are greater than assets.

Loan Serviceability Ratio (LSR) means the interest rate on a loan that a borrower repays for a loan amount from net disposable income after living. Expenses and LSR Evolution, which remains an aspect of changes in how loans are serviced, is a result of varying individual circumstances and the surroundings are the two cardinal ratios of loans that perform poorly. A follow-up paper (Sy, 2022) notes that credit default theory fails to link the cause of default directly and is unable to determine credit risk in fast-changing economic conditions hence the need for other causal credit theories to support his research.

The relevance of this theory to this research is illustrated by the correlation between Gross Loan portfolio and the Value of Listed Banks based on the fact that delinquency is a result of an inability to service loans by the set due date, which is highly caused by failures in liquidity

2.2.3 Neo-Classical Theory of Investment.

This theory was coined by Jorgenson (1963) and it draws from the maximization of wealth and utility of a firm over time. The theory details how much capital stock a company desires to achieve at any given time. The speed with which the firms adjust capital stocks to achieve this desired level determines the investment rate. Profits will be maximized when the marginal product of capital (MPK) is the same as the cost of capital, the Cobb-Douglas production function can be used to compute the desired stock of capital assets.

However, behavioral economists object that reference dependence in those preferences will depend on an individual's current endowment. The endowment effect captures the observation that people are attracted to what they own and object to giving them up (Kahneman, Knetsch and Thaler, 1990) hence failure to make rational investment decisions. It is also worth noting that Jorgenson's model like almost every empirical investment model incorporates optimal conditions from comparative statistics with what is optimal and measurable in a dynamic setting; hence does not appear to be fully consistent with profit maximization.

The neoclassical theory of investment is anchored on the facts that agents can create numerical probabilities and probability distributions of the probable yields. In the investment models, the firm is considered neutral to risks, and capital cost causes the risk. The Neoclassical theory of investment assumes portfolio managers will operate in the best interest of capital investors and the structure and quality of the loan portfolio will guarantee the maximized value of future returns for an acceptable level of risk.

2.3 Determinants of Bank **Value.**

This section will highlight the various determinants of Value, the CAMELS model, which is widely used and accepted to estimate bank performance and value broken down into Liquidity, Asset quality, Capital adequacy, and Management efficiency will be reviewed.

The CAMELS model gives results and a methodology to enable us to perform a cross reference of financial institutions in the same industry, it identifies their strengths, weaknesses, solvency and liquidity with a firm footing in the International Accounting Standard (IAS). The model employs an analysis of financial ratios to determine value and conduct performance evaluation in the banking industry as well as a projection of relative risk. In their research, dash and Das (2013) compared the liquidity and value of private and public banks that utilized the CAMELS rating framework. The Uniform Financial Institutions Rating System (UFIRS) has also implemented CAMELS model internationally as one of the most efficient bank Audit and Solvency Assessment tools (Christopoulos, A., & Dokas, I., 2012)

2.3.1 Capital Adequacy

The capital base reflects the bank's ability to absorb any unexpected losses it reflects financial stability and facilitates depositors in forming their risk perceptions alongside instilling confidence. Besides absorbing unexpected shocks in the balance sheet, it signals that the bank will continue with its operations and honor its obligations in the unforeseen future thereby avoiding bankruptcy due to sudden bank runs Karlyn (1984). The capital adequacy ratio is the most commonly used indicator of capital adequacy and represents the level of leverage and the proportion of debt and equity used to finance the bank assets. It is computed by dividing the banks' capital by its risk-weighted assets. It takes to account the various classes of financial

risk such as foreign exchange and credit risk by assigning risk weight to the bank assets.

2.3.2 Assets Quality

The asset quality of a bank reflects its robustness against the loss of its value it is a measure of the value of risk tied to the assets. The quality is measured based on the extremity of bad loans, adequacy of provision for bad debts, ability to recover bad debts among others. Banking losses end up wiping out capital as they are written off placing the solvency of the financial institution at risk hence asset quality is an important indicator of the healthiness of the bank. The value of loans issued will depend on the collateral used on the loan while the market value will determine the value of investment assets (Guru, B. K., Staunton, J., & Balashanmugam, B. (2002).

2.3.3 Management Efficiency.

Management efficiency is an important element in quantitatively determining the value of a financial institution. Grier (2007), places management efficiency at the core of the CAMEL Model effectiveness in the utilization of resources, cost mitigation measures, compliance with the regulatory framework, etc. can be used as a measure of management efficiency. The bank's Board of Directors and senior managers should also have the ability to identify, monitor, and control performance risks signaling quality management. Quality management is a prerequisite for steady growth and consistent profitability of any commercial bank hence steady valuation in the stock market.

2.3.4 Earnings.

Earnings in commercial banks represent the net income after tax, meaning the pure profits. It is the most closely studied element of financial statements cross reference with peers, industry standards and past performance can be reviewed. Earnings are the commanding variable determining the share price and the bank value. Earnings have a direct connection to performance various measures are used in the measurement of earnings, while analysts prefer Earnings Before Interest and Tax (EBIT) the best indicator is arguably return on assets (ROA). Consistent strong earnings reflect the Banks ability to support operations into the unforeseen future, build a strong capital base, cover for any losses that may occur, and pay dividends to investors (Demirguc-Kunt, A., & Huizinga, H. 1999)

2.3.5 Liquidity

Liquidity can be defined as the ability of a bank to meet its financial commitments when and if they come due such assets can be held as cash stocks, deposits with the central bank, or other securities such as treasury bills that can be offloaded quickly if need be. Commercial banks strive to hold healthy liquidity levels as a safety margin, in modern days cash crunch have triggered "bank runs" that are very difficult to manage or even survive hence liquidity is one of the most important determinants of bank value.

Diamond and Dybvig, (1983) highlighted those commercial banks need to offer assurance to shorter deposit holders concerning the amounts held on their behalf that their claims will be satisfied when they are due if not bankruptcy and liquidity shocks will set in leading to bankruptcy or liquidation. More recently (Rauch et al.

2009) have supported this argument stating that commercial banks stand to be very fragile by nature and liquidity is the key element to be safeguarded to prevent imminent bankruptcy and the total loss of value.

2.3.6 Bank Size

For policymakers and clients alike, it is key to understand what constitutes a large bank factorranging from financial stability to the range and scope of services offered by the commercial entity, and the scalability of financial services on an international scale. Some of the factors and indicators of bank size that influence the value of a financial entity include, Market cap, Gross assets, revenues that are cash flow based and hence are more reliable, Equity capital that is stable from measurement models and client base.

Financial banks serve a wide range of clients that prefer to be associated with large banks which are those commercial banks associated with the stability of investment risks. Total revenues or market capitalization are used by industry analysts to link the bank size to the value of commercial banks though accounting indicators like total assets and shareholders' equity are considered.

There is more risk in lending to smaller commercial entities when compared to larger ones as there is a strong negative correlation between the possibility of insolvency and the size of the firm. Banks the likes of KCB and Equity bank in Kenya pay less regarding the allocation of fixed costs due to their large regional market share, they also enjoy relaxed regulatory pressure when it comes to safety and soundness due to their scale and scope of operation.

(Haron & Azmi, 2004) were among the first researchers to link bank value to size, larger bankstend to enjoy economies of scale and lower operating overheads leading

to cheaper and more efficient operations when compared to smaller banks. It is expected therefore that there is a positive correlation between bank size and value, this assertion, therefore, cannot be underestimated in assessing the value of commercial banks

2.4   Empirical Studies

2.4.1 Global Studies

Globally, Khalid (2012) studied the impact of quality of assets held on the operating performance of Indian banks. The research covered the years 2006 to 2011 where data was collected from sampled banks, regression examination was employed to investigate the correlation between asset quality and bank performance. A negative association was found between the determinants as the quality of bank assets declined when resources were employed for non-value credit leading to poor overall financial performance. In this case, scale of operation, idle and bad asset ratio were the control variables. Stiff competition from the numerous banks in India has stretched the financial markets dropping profit levels and increasing the banks risk appetites thereby negatively affecting the quality of the assets held, this leads to bank runs as customers lose faith in the capacity of the bank to carry on with operations into the unforeseen future a condition that places the entire banking sector in limbo. Although asset quality is an indicator and impressively reflects on aspects of performance, other risks come to play like the percentage of non-performing debt in the total debt not covered by the study.

Sushil and Bivab (2013) looked into the determining factors of asset quality and their impact on the value of commercial banks in Nepal. A regression analysis revealed that non-performing loans percentage, bank size and the liquidity premium paid to investors in terms of compensation to encourage them to take up assets not

easily cashed at market value e.g., long-term bond had a significant effect though negative effect on asset quality. While bank size, (GDP) and capital adequacy had a negative correlation to financial performance, asset quality had a positive correlation.

Mousa et al., (2021) studied the influence of loan concentration and diversification on equity return in both Iraqi and Jordan banks, the period under consideration being from 2006 to 2010. The study sought to find how to best diversify loan portfolios, the extent of diversification and whether or not there is any statistical association between the two variables. Since the investigation was cross country the degree of loan portfolio diversification varied due to the different economic realities. The researchers, therefore, concluded that risk is best suited to address loan portfolio balance, banks should adhere to Basel III mitigating any substantial risks that may affect their financial performance. The research only considered a sample of only 4 banks that were listed in Iraq which was not a sufficient representation of the entire population as Jordanian banks were not included. The study conducted was qualitative as opposed to quantitative.

2.4.2 Local Studies

Nduuri (2013) researched the effect of real estate loans on the performance of Kenyan banks, specifically mortgage savings and diversification and the impact on the bank's loan book and its overall effect on the performance of the banks. The research had a population made up of all 44 Kenyan banks for a period of 4 years from 2008-2012 and a descriptive research design to reflect the exact profile situation, primary and secondary sources of information were employed. Regression together with Correlation analysis methods were done to establish the connection between the variables while graphs, bar charts and frequency tables displayed the

information. The study established that debt mortgage loans are affected by financial in addition to other market factors like the rate of the Treasury bond, the size of the bank and the number of clients it commands, risk management strategies and the management of the loan portfolio among others. The overall result was that there is a positive relationship between investment in real-estate loans and the performance and value of banks.

Murira (2010) also sought to understand the correlation between the gross loan portfolio and the financial performance of banks in Kenya. The sample size was 30 commercial banks out of a population made up of 42 Kenyan commercial banks for a period of 4 years from 2004- 2008. For this objective, secondary sources of data were utilized by the use of published information multivariable regression equation was applied to define the correlation between bank performance and loan portfolio. The researcher concluded that a connection exists between the loan portfolio and the financial performance as the loan book forms a substantial portion of the assets held by any financial institution. Muira however did not look into how the loan portfolio affects the valuation of the bank more so when it comes to commercial banks listed in NSE.

George et al. (2013) analyzed the effect of loan portfolio management and other determinants on the productivity of banks in Kenya. The population considered was 13,000 employees on the roll as of the end of 2013 due to logistical challenges a sample of 400 management employees in Nairobi was chosen. A descriptive design that included the use of questionnaires and interviews was used to study the characteristics of the variables in question. SPSS data analysis program was used for analysis. The outcome was that the loan portfolio directly impacted the profit levels

of banks though new loans and poorly performing loans had different levels of impact on profitability. The qualitative nature of the study has ignored the quantitative aspects of the data.

Onchomba (2019) researched the impact of loan portfolios on financial performance of banks, a census of the 42 commercial banks at the time was taken for a period of 10 years from 2006-2015. Secondary sources of data like audited financial statements among others relevant financial data were utilized while regression and correlation using STATA was used to evaluate this data. Overall, the research revealed a strong positive influence of the Loan portfolio on ROA and ROE. The study however fails to highlight other factors that positively influence financial performance other than gross loans, like the emergence of agency in banking or mobile banking that are known to impact financial performance positively.

Research by Achimba (2018) sought to understand the influence of portfolio administration policies on the performance microfinance institutions (MFI). The research majored in 4 major credit Microfinance banks in Uasin Gishu region with a population of 33 staff of officer level, all of whom formed the sample size. The study assumed an experimental design and data was obtained by using a questionnaire survey. Expert opinion was used to analyze the results and measure the validity of data. A five point Linkert gauge was also used to denote the measure of agreement or disagreement to the questions. The outcome was that accounting and credit policies alongside portfolio disclosures had a positive effect on portfolio management practices and therefore performance too. This research is limited in scope in that it only considered a small population and did not consider the rest of the Counties in Kenya, the selected MFI might not be the correct representation of

all MFIs in Kenya.

Koech (2018) investigated the link between the size of the loan portfolio and Credit Riskiness in financial banks in Kenya. The study's population was composed of forty two commercial banks but a sample of forty was found to be adequate with a response rate of 95.2%. Secondary data including audited financial statements and data from world-bank was used period being from 2013-2017 and linear regression employed to evaluate the interrelationships among the variables. The research outcomes were that 39.6 % of the variations in credit risk can be attributable to autonomous variables. Independent variables had a strong association with credit risk in commercial banks.

2.5 Summary of Literature Review

The second section is a comprehensive analysis of theoretical and empirical evidence of Gross loan portfolio and the value of Listed Banks. In the majority of the literature, it is clear that the two variables correlate hence the need for the study remains essential in bank efforts toward diversifying their loan portfolios and keeping risks at an acceptable minimum. Credit default theory is appropriate to this research since delinquency leads to cashflow issues, eventually leading to bank failures and total erosion of value. According to the Neo-Classical theory of investment, portfolio managers will always operate for the best interest of capital investors and the structure and quality of the loan portfolio will ensure the maximized value of future returns for an acceptable level of risk.

Published literature on how gross loan portfolio influences the value of listed commercial banks is limited, most researchers major on how loan portfolios impact the financial performance of commercial banks but fail to capture other factors such

as the quality of management, economic or even political aspects. Highlighted case studies also have nonrealistic samples that fail to adequately represent the population. Growth in lending over time remains to be a sound measure of performance and hence value of commercial banks, though when unchecked it leads to adverse banking crisis due to the poor structure of loan portfolios and non-performing loans. This study is relevant since steady bank valuation contributes to economic stability as the county looks towards achieving Vision 2030.

2.6 Conceptual Framework

Mugenda and Mugenda (2003) terms the conceptual framework as a tool that aides the researcher in visualizing the interrelationships between variables at a glance. It grounds the study and lays a foundation for the research objectives and the outcome.

The framework for the study consists of explanatory variables and the Value of Banks as the dependent as shown by figure 2.1 below, bank size is incorporated as control variable. Independent variables in this study are the measures of gross loan portfolio and they include Real estate, Personal, Trade and enterprise and Agricultural loans.

```
┌──────────────────────┐                                        ┌──────────────────────┐
│  Personal loans      │                                        │                      │
│                      │                                        │  Value of Bank       │
└──────────────────────┘                                        │                      │
                                                                 │                      │
┌──────────────────────┐                                        │                      │
│  Real Estate Loans   │                                        │                      │
│                      │                                        └──────────────────────┘
└──────────────────────┘

┌──────────────────────┐
│  Trade and Enterprise│
│  Loans               │
│                      │
└──────────────────────┘

┌──────────────────────┐
│  Agricultural loans  │
│                      │
└──────────────────────┘
```

Control Variables

```
┌──────────────────────┐
│  Bank Size           │
│  Liquidity           │
│  Earnings            │
└──────────────────────┘
```
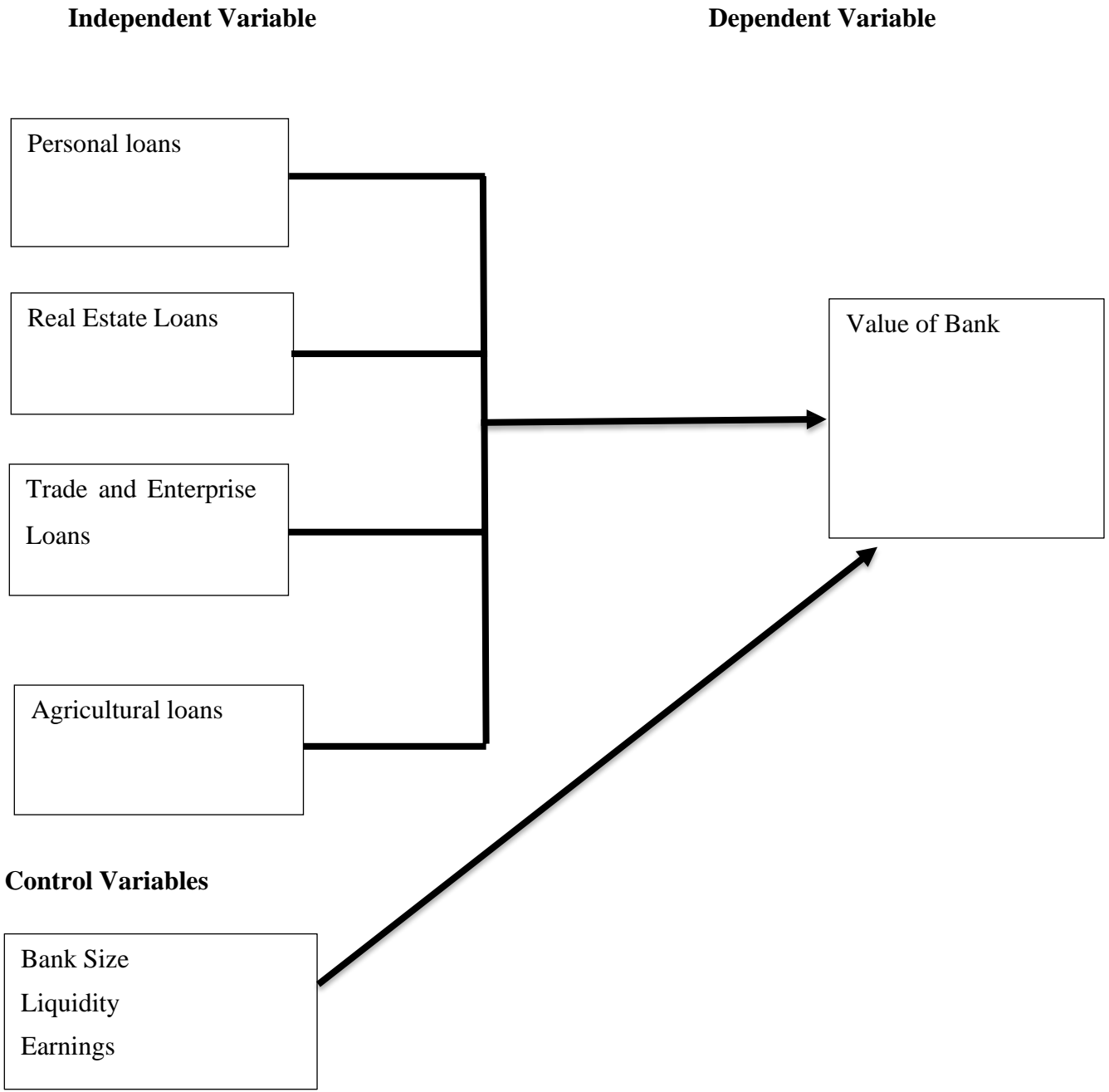
Figure 2. 1 Conceptual Model

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section proposed and implemented the approach employed in the study, it outlined the population, the research design, the analytical model, data collection techniques, diagnostic tests together with tests of significance.

3.2 Research Design

The design involved a systematic technique of data collection, processes, and methods of analyzing data. This study engaged a cross-sectional panel data design. Data in a cross-sectional study represents a specific point in time in the population representing repeat observations on the same units. This method was best fitted for this research as it enables the researcher to obtain data from the various listed commercial banks at a given point in time in this case annually. Cross-sectional data enables the researcher to examine any significant interrelationships among the variables under study at that given point in time (Nachmias & Nachmias, 2004).

The use of secondary data makes this study ex post facto; the researcher collects data that already exists and is not manipulated. This study, therefore, sought to establish the effect of Gross loan portfolio on the value of listed banks, with bank size, liquidity, and earnings as the moderating variables.

3.3 Population and Sample

The population entailed the eleven registered listed commercial banks operating from 2017 to 31st December 2021 in Kenya, a period that has experienced exponential growth both in the economy and the banking sector. The sample covered the entire population making the research a census of all the listed commercial banks in Kenya.

3.4 Data Collection

The data collection process is crucial as it determines the authenticity of the research outcome and results. Secondary data sources were relied upon in this study as they provide large volumes of data and save on time and costs. Panel data on listed commercial banks was collected across the five years to examine the relationship between gross loan portfolio and value.

Data on the independent variables was extracted from the individual commercial banks' annual financial statements and CBK reports. Quantitative data to be collected includes total retail and personal loans, real estate loans, enterprise and trade loans, Agricultural loans, Total bank assets, Current assets, Current liabilities, Net income and Shareholder's equity. Data on banks' stock value was sourced from Nairobi Securities Exchange (NSE) historical index, which is the authority in stock prices in Kenya. The unit of the study was the 11 listed Banks. The data was cover a 5-year period for the financial years 2017 through to 2021

3.5 Data Analysis

Quantitative techniques were employed in data analysis; collected data was tabulated and presented to make easy to understand and interpret. SPSS statistical analysis software was used in this research to manipulate the data and visualize the results.

Breusch -Pagan/Cook-Weisberg test was used to test for heteroscedasticity to ensure that residuals are distributed with equal variance. Variance inflation factor (VIF) was used to test multicollinearity, determining if the independent variable is highly collinear to any other variables in the study. Multicollinearity is a problem as it indicates that the variables are not independent of each other or linear.

Autocorrelation was tested by Durbin Watson D test to ensure constant variance in errors while tests for normality was conductedon the data to ensure it conforms to the regression assumptions of normality therefore ensuring data is fit for the research. Correlation analysis quantified the strength of association between the linear variables in the study that is the strength of the association between the loan portfolio and market value of the bank.

3.5.1 Analytical Model.

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon$

Where:

Y- Value of the banks

X1– Real estate Loans

X2-Retail and personal loans

X3-Enterprise and Trade loans

X4-Agricultural Loans

X5-Bank size

X6-Liquidity

X7-Earnings

ε – The error term

3.5.2 Operationalization of Study Variables

The variables are operationalized as in tale 3.1 below:

Table 3. 1 Operationalization of Study Variables

	Variable	Indicators	Source	Measurement
Dependent Variable	Value of the Banks	Stock Prices	NSE data	Ln Market Capitalization
Independent Variables	Personal Loans	Personal loans as a % of the total income from personal loans, Log of total personal loans	Annual Reports	Ln Personal Loans
	Real Estate Loans	Total real estate loans/Total real estate income, log of total real estate loans for that year	Annual Reports	Ln Real Estate Loans
	Enterprise and Trade Loans	Total Enterprise and trade loans/Total Enterprise and trade loans, log of total Enterprise and trade loans for that year	Annual Reports	Ln Enterprise and Trade Loans
	Agricultural Loans	Total agricultural loans/Total Agricultural income, log of total agricultural loan for that year	Annual Reports	Ln Agricultural Loans
	Liquidity	Current ratio	Annual Reports	Liquid assets /deposit liabilities
	Earnings	Return on assets or return on equity	Annual Reports	Net income/ Shareholders Equity
	Bank Size	Total Assets	Audited Financial Statements	Ln Total Assets

3.5.3 Tests of Significance

The research was undertaken with statistical analysis, presentation and interpretation. The tests portrayed the strength and the magnitude of correlation. Moreover, it gave deeper insight while enhancing clarification in a wide spectrum. The test to be performed include F-Test, T-test and ANOVA. The research utilizes 5% and 95% confidence level.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION

4.1 Introduction

This chapter is pivotal in elaborating the in-depth presentation, logical delineation of data collected, and scientific interpretation after diligent analysis. The chapter is paramount for the generation of new knowledge on; value of banks, real estate loans, retail and personal loans, enterprise and trade loans and agricultural loans. The chapter incorporated descriptive and inferential statistics. The study findings have been computed through the use of SPSS. The four variables considered were; personal, real estate, enterprise and trade loans and agricultural loans.

4.2 Descriptive Statistics

The descriptive statistics gave an analysis of each variable that was studied in the research. It accentuated the minimum and maximum values recorded for that variable in the period under the study. It also presented the standard deviation and mean of every explanatory variable and explained variable. The results showed that the value of banks in the 2017-2021 period portrayed a mean of 3.1359 and a standard deviation of 2.1158. Real estate loans, retail and personal loans exhibited means of 0.8289 and 0.2939, while their standard deviations were 0.1414 and 0.2809, respectively. Enterprise and trade loans posted a 0.6857 average and a standard deviation of 0.0883.

Further, the descriptive analysis of agricultural loans blueprinted a mean of 0.8312 and a standard deviation of 0.1397. The descriptive was supreme in expounding vital features of the data. Therefore, it summarized a voluminous set of observations and communicated presentable work inform of the mean and standard deviation.

Table 4. 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Value of Banks	55	.2287	11.4453	3.1359	2.115880485
Real estate loans	55	.1462	.951163	.8289	.141417612
Retail and personal loans	55	.0101	1.20483	.2939	.280977809
Enterprise and trade loans	55	.4607	.937374	.6857	.088342049
Agricultural Loans	55	.3218	.953354	.8312	.139779482
Valid N (listwise)	55				

4.3 Diagnostic Tests

The diagnostic detections assisted in the screening of the data. It involved assessing the reliability and relevance of the data for scrutiny. The diagnosis was the cornerstone for elaborating the accuracy, interpretation, sensitivity, and specificity. Diagnostic analysis was a fundamental activity that helped determine the nature of data used in modeling. It involves three steps: conducting normality test, autocorrelation and multicollinearity tests.

4.3.1 Normality Test

A test for normality was carried out to determine if data had been obtained from a normally distributed population. The researchers utilized the QQ plots to check for normality. The graphical presentation is good for quality judgment and assessment of the data traits.

4.3.1.1 Value of Banks

From figure 4.1 below, data is distributed along a straight line implying the data was obtained from a normal distribution.

33
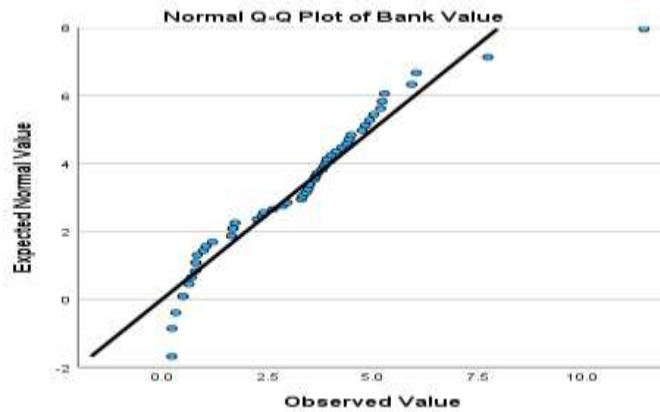
Figure 4. 1 Bank Value

4.3.1.2 Real Estate loans

Figure 4.2 below shows that observations are distributed along a straight line. This also implies that the data was obtained from normally distributed populations
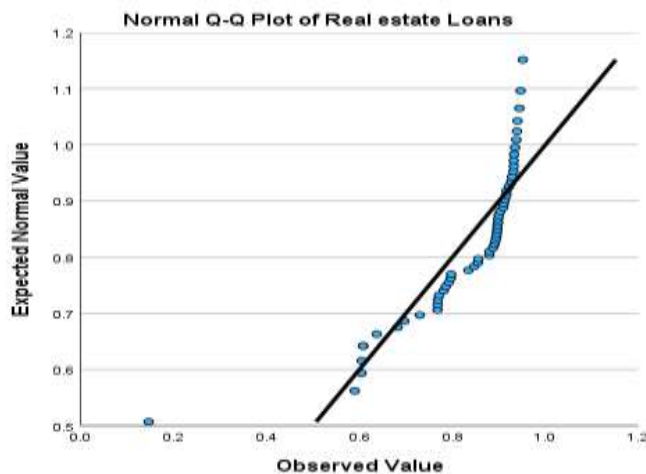
Figure 4. 2 Real Estate Loans

4.3.1.3 Retail and Personal Loans

From the observation in figure 4.3, the lower left end data seems to deviate from the straight line while the data on the upper part seems to be distributed slightly away from the straight line but it follows on the direction of the line. This is also concluded as a normal distribution since it does not deviate away.

Normal Q-Q Plot of Retail and personal loans

Figure 4. 3 Retail and Personal Loans

4.3.1.4 Enterprise and Trade loans

Figure 4.4 below exemplifies that the data is distributed along a straight line deducing

the data was obtained from a normally distributed population.

Normal Q-Q Plot of Enterprise and Trade loans
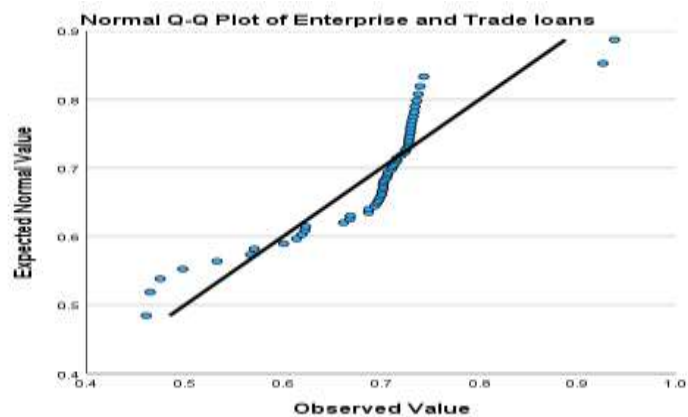
Figure 4. 4 Enterprise and Trade loans

4.3.1.5 Agricultural loans

The data obtained from the agricultural loans was also from a normally distributed

population. This was shown by data distributed along the straight line as shown below

in figure 4.5.
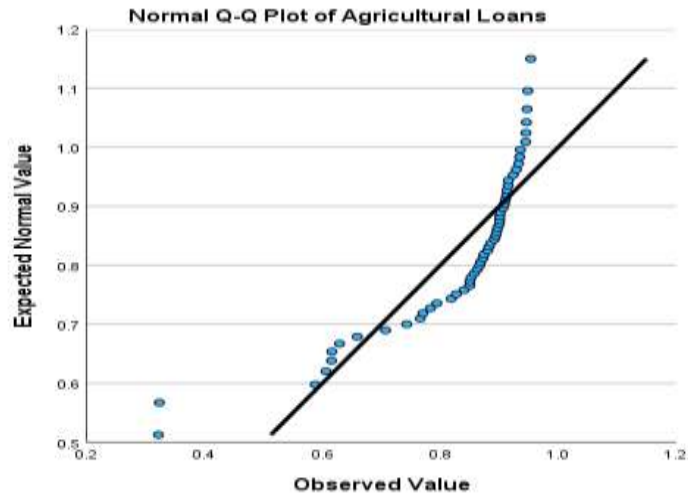
Figure 4. 5 Agricultural loans

4.3.2 Multicollinearity Test

A multicollinearity test was accomplished to assess if two or more explanatory variables were highly correlated using tolerance and the VIF values under the coefficient of determination. For multicollinearity not to exist, the tolerance value of each variable should exceed 0.2, while those of VIF values should be smaller 10. As exhibited and tabulated below, tolerance values all exceed 0.2, and those of VIF values below 10. Implying that there was no multicollinearity among the study variables.

Table 4. 2 Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Real estate loans	.637	1.569
Retail and personal loans	.829	1.206
Enterprise and trade loans	.771	1.297
Agricultural Loans	.676	1.480

4.3.3 Autocorrelation Analysis

The autocorrelation test was vital in delineating the pattern and trend over time. It was pivotal to measure the connection between the variable's current value and its past value. It ranges from strong positive autocorrelation to strong negative autocorrelation tabulated below. The Durbin Watson was maximized in autocorrelation. If the value lies between 0 and 2, it lies within the accepted autocorrelation range. From table 4.3, 1.457 lies within the normal range.

Table 4. 3 Autocorrelation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.564[a]	.318	.263	1.816001585	1.457

a. Predictors: (Constant), Agricultural Loans, Real estate loans, enterprise and trade loans, Retail and personal loans

b. Dependent Variable: Value of Banks

4.4 Correlation

Correlation analysis determines the association between the regressor and the outcome variables in the study. The study maximized the association techniques to detect and degree of relation using Pearson correlation. The study coefficient spanned from negative to a positive one (-1 to 1). Each explanatory variable was elaborated through its magnitude and direction of movement alongside the explained variable. As

per Warokka and Gallato (2012), coefficient (r) spanning from 0.10 up to 0.29 can be interpreted as a low degree of association, while 0.30 up to 0.49 can be associated with a moderate degree of relation.

Additionally, a great degree of connection amid variables is expounded by 0.50 up to 1.00. Therefore, it was an eye-opener for the variables' magnitude and direction. This was fundamental for the determination of the relationship.

Real estate loans, Enterprise and Trade loans and Agricultural loans have a positive correlation of (r=0.266, p=0.0490), (r=0.32, p=0.017) and (r=0.327, p=0.015), respectively toward the Value of banks. In contrast, Retail and personal loans have a negative relationship of (r=-0.393, p=0.030) towards the value of banks. Therefore, Retail and personal loans were moderately negatively correlated as stipulated by r of negative 0.393. Real estate loans had a low positive degree of correlation of 0.266 while, Enterprise and Agricultural loans were elucidated by a positive moderate degree of association of 0.32 and 0.327 respectfully.

Table 4. 4 Pearson Correlation

Correlations		Bank Value	Real estate Loans	Retail and personal loans	Enterprise and Trade loans	Agricultural Loans
Bank Value	Pearson Correlation	1	.266*	-.393**	.320*	.327*
	Sig. (2-tailed)		.049	.003	.017	.015
	N	55	55	55	55	55
Real estate Loans	Pearson Correlation	.266*	1	-.053	.445**	.462**
	Sig. (2-tailed)	.049		.702	<.001	<.001
	N	55	55	55	55	55
Retail and personal loans	Pearson Correlation	-.393**	-.053	1	.153	-.357**
	Sig. (2-tailed)	.003	.702		.264	.007
	N	55	55	55	55	55
Enterprise and Trade loans	Pearson Correlation	.320*	.445**	.153	1	.138
	Sig. (2-tailed)	.017	<.001	.264		.316
	N	55	55	55	55	55
Agricultural Loans	Pearson Correlation	.327*	.462**	-.357**	.138	1
	Sig. (2-tailed)	.015	<.001	.007	.316	
	N	55	55	55	55	55

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

4.5 Regression Analysis

Regression analysis assessed the variables, impacts and trends. It involved several analysis tests, including Model summary, Coefficient of determinations and the Analysis of Variance. The regression computation was a special technique that was useful in gauging the specific and each explanatory variable and its consequential changes. It was vital in elaborating the variable's linear nature and the model's fitness. In addition, it increased the confidence level, thereby giving quality and bold state of the nature of the variables. It was fundamental for the explanation of likelihood and decision-making. It aided the improvement of decisions, defining the crucial undertakings including innovation, and creativity answering the research question.

4.5.1 Model Summary

This summary explained the strength of the connection between the independent and the dependent variables. It also portrayed the level of variation caused by the regressor variables. From the summary table 4.5, the correlation among the study variables was at 56.4%. The coefficient of determination is represented by R-Square of 0.318 this implied that 31.8% of the banks' value variation was caused by agricultural loans, real estate loans, enterprise and trade loans and retail and personal loans, remainder of change in the value of banks were caused by factors not in the study.

Table 4. 5 Model Summary[b]

Model	R	R Square	Adjusted Square	RStd. Error of theEstimate	Durbin-Watson
1	.564[a]	.318	.263	1.816001585	1.457

a. Predictors: (Constant), agricultural loans, Real estate loans, enterprise and trade loans, Retail and personal loans

b. Dependent Variable: Value of Banks

4.5.2 Analysis of variance

Table 4.6 provided the outcome of ANOVA analysis. ANOVA provided the comparison and determination of deviation. The confidence P-Value expounded on the relevance and reliability nature of the data. It is supreme to postulate that deviation among the grouped population exceeds the variance for each group. The ANOVA illustrated in table 4.6 indicates the level of significance. Therefore, it was fundamental to portray whether the model is statistically significant. The F statistics tabulated is 5.827, and the significance level is 0.000. This significance level is less than the p-value of 0.05, indicating that the model was statistically significant.

Table 4. 6 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.862	4	19.216	5.827	<.001b
	Residual	164.893	50	3.298		
	Total	241.755	54			

a. Dependent Variable: Bank Value
b. Predictors: (Constant), Agricultural Loans, Enterprise and Trade loans , Retail and personal loans , Real estate Loans

4.5.3 Coefficient of Determination

The coefficient of determination explained how much variability of one factor can be caused by another factor. The goodness of fit is always useful in helping in the prediction of the future. As seen from table 4.7 below, if all factors are equated to 0, then there autonomous figure of bank value is a negative effect of 3.65units. A unit change in real estate loans triggers an addition on the value of the bank by 0.512 units whenever all factors are kept constant. Moreover, an addition of a single unit of retail and personal loans translates to a decrease in the value of the bank by 3.026 units if all variables are kept unchanged. Additionally, a unitary increment on the enterprise and trade loans results to increment in the bank value by 8.386 units only if all influencers are maintained unchanged. Finally, a positive adjustment of agricultural loans by one unit translates to positive changes on the bank value by 1.805 when the enabling factors are held constant.

Table 4. 7 Coefficient of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-3.650	2.336		-1.563	.124
Real estate Loans	.512	2.189	.034	.234	.816
Retail and personal loans	-3.026	.966	-.402	-3.133	.003
Enterprise and Trade loans	8.386	3.186	.350	2.632	.011
Agricultural Loans	1.805	2.151	.119	.839	.405

Dependent Variable: Value of Banks

Based on the significance test both Retail and personal loans and Enterprise and trade loans posted a significant relationship with bank value, hence;

The model equation can therefore be generated as;

$$Y= -3.65 - 3.026 X_2 + 8.36 X_3$$

Whereby;

Y = Value of banks

X_1 = Real Estate loans

X_2 = Retail and personal loans

X_3 = Enterprise and trade loans

X_4 = Agricultural loans

4.6 Discussion of Results

The research aimed to study the effect of gross loans portfolio on the value of listed banks in Kenya. This study sampled 11 Commercial banks for a period covering 5 years from 2017 to 2021. From the descriptive statistics, the minimum value of banks recorded in that period was 0.2287 and a maximum of 11.4453. Real estate, retail and personal loans posted lowest and highest values of (0.146292, 0.9511) and (0.0101, 1.2048), respectively. Enterprise and trade loans recorded a minimum of 0.4607 and a maximum of 0.937374, while agricultural loans recorded a minimum of 0.3218 and a maximum of 0.9533.

The regression analysis showed that there was 56.4% correlation among the variables that were under study. The model summary also shows that 31.8% variation in banks' value was caused by agricultural loans, Real estate loans, enterprise and trade loans and retail and personal loans. Thiongo (2017) postulated the supremacy of loan portfolio growth on the bank value while Murira (2010) illustrated the reliance of bank performance on the loan portfolio and the interest.

Under the coefficient of determination, the variability was elaborated. The autonomous value was -3.65 as elaborated in table 4.7 whenever all determinants are kept constant. A unitary positive adjustment in real estate loan translates to an increase on the bank value by 0.512units if all factors are kept constant. Additionally, an increment in one unit of real and personal loans triggers a decrease in value of bank by 3.02 units all other variables maintained constant. In addition, one unit of positive adjustment on the enterprise and trade loans positively changes the bank value by 8.38units all factors are kept constant. It wrapped up that an increment in the agricultural loans by one unit causes the 1.85unit changes on the bank value when all factors are held constant.

Ongore and Kasu (2013) concurred with this outcome by coining a negative association between non-performing loans and bank performance. Foos et al. (2010) demonstrated the pivotal role of loan growth on the performance. Khalid (2012) connected the predicaments of banks loans quality to the low absorption of resources. The study advocated for healthy balancing, diversification, and continuous improvement of credibility to increase performance.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study provides an in-depth summary and exhaustive conclusion. It provides appropriate recommendations, shortcomings and suggestions. It is imperative to highlight that empirical analysis was incorporated in this study to illustrate the connection between loan portfolios on bank value. The conclusion in this presentation is related to the core objective of the research. It posted the recommendations which encapsulate areas of further inquiry. Finally, it guided the quality provision of answers to research gaps.

5.2 Summary of the Findings

The study aimed to assess the impact of gross loan portfolio on the bank value. Contextually, the study prioritized banks listed at NSE. The study set out specific variables such as; real estate loans, retail and personal, enterprise and trade loans, and agricultural loans. The assessment provided diligent inquiry into research questions, bridging the research gap. Notably, the period of study spanned from 2017-2021. The study was executed with the assistance and reliance on secondary data.

The mathematical computation of variables included the diagnostic tests. These incorporated; multicollinearity, autocorrelation and normality. From tabulation and calculation, it is vital to conclusively state that the data followed the normal distribution pattern as portrayed by the Q-Q plot. This was based on its normal range. Additionally, multicollinearity was non-existent, as indicated by tolerance and VIF. Therefore, it cleared the data from association and predictor variables' predicaments. Finally, it recorded Durbin Watson of 1.457 hence lying within the stipulated range hence autocorrelation assumption was met.

The correlation analysis portrayed that real estate, enterprise and trade and agricultural loans exhibited positive correlation towards value of banks while retail and personal loans showed negative correlation with bank value. Retail and personal loans recorded a moderate negative correlation. Enterprise, agricultural and real estate loans posted a moderate positive correlation towards value. Therefore, the four explanatory variables were crucial as they influence the bank value.

5.3 Conclusions

Based on the research outcome analyzed and documented on the preceding part, the study wraps up several undertakings regarding the research objectives. It is worth emphasizing that real estate loans, retail and personal loans, agricultural loans, and enterprise and trade loans played a pivotal role in the bank's value. These predictor variables collectively cause changes to bank value. In general, it guided the good measure of fitness for the variable captured in this study. The findings concur with several results from preceding researchers though it also resulted in contrary association to other researchers.

At 5% significance level of all the predictor variables had a noticeable effect. The conclusion can expound on the descriptive statistic that bank value experienced the highest variability due to their standard deviation of 2.11, followed by the retail and personal loans by 0.28, then real estate loan by 0.14. Subsequently, agricultural loans and enterprise, trade, posted a low deviation of 0.139 and 0.088, respectively.

Based on the computation of multivariate regression, the autonomous figure, if everything is maintained constant, is -3.65. Every increase unit in real estate loan translates to an increase on the bank value by 0.512 all factors kept constant, one unit of real and personal loans triggers a decrease in the value of bank by 3.02 while one unit of positive adjustment on the enterprise and trade loans positively changes the

bank value by 8.38 finally an increment in the agricultural loans by one unit causes the 1.85 change on the bank value when all factors are held constant.

5.4 Recommendations

The recommendations are the cornerstone for policy formulation based on the findings and conclusions. The findings elaborated the negative impact of retail and personal loans on bank value. It is worthwhile noting that personal loans need proper evaluation and keen consideration of its outlook, returns and value to avoid a high default rate. Therefore, reliable information from relevant accredited bodies and credit bureaus can provide good information enabling banks to maintain a healthy loan book. Stressing on the need for a diversification strategy to avoiding the negative association on value of the bank enabling banks to tame the ever increasing tide of personal loan default in the country.

The retail and personal loans exhibited a negative correlation with the bank value. The banking sector should employ an aggressive framework to ensure timely loan recovery and strategies for longevity are upheld. In this regard, a proper analysis of the causes of default should be expedited. The training of staff, as well as individuals taking loans, should be considered to ensure the absence of asymmetric information. Therefore, real-time information dissemination promotes the analytical skills of loan applicants.

The enterprise and trade loans have the biggest positive impact on bank value based on the findings. The study recommends an aggressive drive to maximize enterprise and trade loans, better management of this class of loans and allocation of resources not only to attract new enterprise clients but maintain the existing book. The lending time should be relooked at, put quality policy measures and shorten repayment time.

The crucial procedure of monitoring and evaluating both enterprise and trade loans increases the stability of loan repayment to the banking sector. Quality policy discouraging defaults should be prioritized to increase repayment. The banks can develop a good credit-rating mechanism to ease the reliability while fueling high benefits to the investors.

The agricultural loans should be accompanied by long-term interventions to increase bank value. The agricultural sector is the cornerstone of the country's prosperity in terms of food security. A good monitoring framework on the agricultural products with the greatest returns should be examined comprehensively to enable the increment of bank value. The banks should strive to rank different agricultural loans according to their contribution to economic prosperity and prioritize financing them. Generally, an effective loan portfolio is the yardstick for commercial banks' growth and increase in value. The in-depth scrutiny of cash flow and the value of the bank should be analyzed to give latitude to the development plan.

5.5 Limitation of the Study

The study concentrated on the four explanatory variables and predicted variables. The study did not factor moderating and intervening variables, which creates a holistic platform for in-depth scrutiny. Therefore, incorporating other variables is pivotal in offering exhaustive findings. Additionally, the study's independent variables were limited to real estate, personal, enterprise and agricultural loans. In contrast, the research did not include other loans relating to business development and innovation and SME loans.

The study sourced the information from secondary data and quantitative means. The maximization of quantitative figures enables a far-reaching conclusion based on the

fluctuation and the pattern of already existing information. Nevertheless, the study failed to incorporate the qualitative aspects, which are fundamental for decision-making. The qualitative nature is replicated in the form of strategies, plans, top management experience, the holistic development of the quality of loans, and the implementation and execution processes. These are crucial for the improvement of banking value.

5.6 Suggestions for Further Research

The evaluation of loan diversification portfolio aids the strengthening of policies that increase the performance of loans and sealing loopholes that create avenues for defaults. The bank can pay intensive attention to credit history for transformation, loan expansion and gauging the optimal level of the loan portfolio

Compliance is a qualitative aspect that entails processes and procedures that are beneficial to business stability. Good compliance mechanisms are determinants of financial performance. Despite the high expenditure cost on compliance, minimal studies have looked into the association of compliance with bank value.

Finally, a follow-up study can include other predictor, moderating and intervening variables to improve on the current findings. In addition, the analysis period should be increased to give a detailed answer to prevailing research questions. The study can also factor in financial strategies adopted by banks to enhance their value. The study can switch the focus area to SACCOs, microfinance institutions and digital lending. Furthermore, the incorporation of all the banks operational in Kenya can also be of interest.

REFERENCES

Acharya, V. V., Hasan, I., & Saunders, A. (2006). Should banks be diversified? Evidence from individual bank loan portfolios. *Journal of Business*, 79(3), 1355–1412.

Achimba, E. (2018). *Effect of gross loan portfolio management practices on performance of deposit taking micro finance institutions in kenya: A survey of deposit taking micro finance institutions in Uasin Gishu County.* Nairobi.

Achou, T. F. (Achou, T. F., & Tenguh, N. C. (2008). Bank performance and credit risk management, Unpublished master's thesis, Scovde, Sweden: University of Skovde). *Bank performance and credit risk management.* Scovde, Sweden: University of Skovde.

Adela, S. &. (2010). Study of correlation between average interest rate and non-performing loans in the Romanian banking system. Retrieved from https://core.ac.uk/download/pdf/6263220.pdf.

Adusei, M. (2010). Determinants of Credit Union Savings in Ghana. *Journal of InternationalDevelopment*, 25(1), 22-30.

Afande, F.O. . (2014). Credit Risk Management Practices of Commercial Banks in Kenya. *European Journal of Business and Management*, 6, 21-61.

Angbazo, L. (1997). Commercial Bank Net Interest Margins, default risk, interest rate risk andoff balance sheet banking. *Journal of Banking and Finance* , 21, pp. 55–87.

Arkan, T. (2016). The importance of financial ratios in predicting stock price trends: A case study in emerging markets. *Finance, Rynki Finansowe, Ubezpieczenia.*

Athanasoglou, P.P., Sophocles, N.B. and Matthaios, D.D. (2005). Bank-specific, industry- specific and macroeconomic determinants of bank profitability. *Working paper Bank of Greece*, 1(1), 3-4.

Ball, R.,&Brown,P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of Accounting Research, Autumn*, 159-178.https://doi.org/10.2307/2490232.

Barberis, N. and Thaler, R. (2003). A Survey of Behavioral Finance. *Handbook of the Economics of Finance*, 1,1053-1128.

Berrios, M. R. (2003). The relationship between bank credit risk and profitability and liquidity. *The International Journal of Business and Finance Research*, 7(3), 105-118.

Bivab, S. S. (2013). Determinants of banks liquidity and their impact on financial performance in Nepalese Commercial banks. *Unpublished thesis submitted to Ace Institute of Management*.

Caprio, G. a. (1996). *Bank insolvencies: cross-country experience.* Washington: unpublished, April.

CBK. (2013). *Bank supervision annual report 2013.* Nairobi: Accessed from http://www.centralbank.go.ke/downloads/acts_regulations/banking_Act.pdf .

Demirguc-Kunt, A. &. (1999). *Determinants of Commercial Bank Interest Margins and Profitability.* World Bank Economic Review: 13, 379-408.

Denis, D. J. (1997). Agency problems, equity ownership, and corporate diversification. *The Journal of Finance*, 52(1), 135.

Diamond, D. a. (1983). Bank Runs, Deposit Insurance and Liquidity. *Journal of political Economics*, 91, 401-419.

Fofack, H. (2013). *A Model of gendered production in colonial Africa and implications for development in the post-colonial period. Policy research working paper 6438.* Washington.

George O. & George G. K. (1983). A proposal for Federal Deposit Insurance with Risk Sensitive Premium. *Staff Memorandum, Federal Reserve Bank of Chicago*, 1-77.

George, G.E., Miroga, J.B., Ngaruiya, N.W., Mindila, R., Nyakwara, S., Mobisa, M.J., Joseph, O., Mandere, E.N., & Moronge, M. (2013). An Analysis of Loan Portfolio Management on Organization Profitability: Case of Commercial Banks in Kenya. *Research Journal*.

Grace, M. (2010). *he effect of credit risk management on financial performance of commercialbanks in Kenya.* Nairobi: University of Nairobi.

Grier, D. (2007). *A Force of Nature", Computer, December.* .

Guru, B. K., Staunton, J., & Balashanmugam, B. (Journal of Money, Credit, and Banking). Determinants of commercial bank profitability in Malaysia. *Journal of Money, Credit,and Banking*, 17(1), 69-82.

Hales, J. (2005). *Accounting and Financial Analysis In the Hospitality Industry.*

Elsevier Butterworth: Heinemann.

Jorgenson, D. (1963). *Capital Theory and Investment Behavior.* American Economic Review:53, 247-259.

Karlyn, M. (1984). Capital Adequacy at commercial banks. https://www.kansascityfed.org/publicat/econrev/econrevarchive/1984/3q84mitc.pdf.

Khalid, A. C. (2012). The impact of Asset Quality on Profitability of Private Banks in India. *Journal of African Macroeconomic review*, 2(1).

Kithinji, A & Waweru. N.M. (2007). Merger Restructuring and Financial Performance of Commercial banks in Kenya. *Economic, Management and Financial Markets Journal*,2 (4), 9-39.

Kithinji, A. M. (2011). Credit risk management and profitability of commercial banks in Kenya. *Unpublished master's thesis*.

Koch, T. W. (2002). Bank management. San Diego, CA.

Koech, W. K. (2018). The relationship between loan portfolio sectorial concetration and creditrisk of commercial banks in Kenya. *Unpublished master's thesis*.

Macharia, E. W. (2013). The effects of global financial crisis on the financial performance of commercial banks offering mortgage finance in Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1(2), 688-701.

Macharia, J. N. (2012). The relationship between the level of non-performing Loans and the financial performance of commercial banks in Kenya, An MBA project submitted to the University of Nairobi.

Mandelbrot, B. B. (2004). *Fractals and chaos: The Mandelbrot set and beyond.* New York: Springer.

Margrabe, K. (2007). The incidence of secured debt: Evidence from the small business community. *Journal of Financial and Quantitative Analysis*, 24, 379-394.

Megeid, N. A. (2013). The impact of effective credit risk management on commercial banks liquidity performance: Case of Egypt. *International Journal of Accounting and Financial Management Research (IJAFMR)*, 3(2), 13-32.

Mousa, Sundus & Alktrani, Mousa & Talib, Karrar. (2021). Impact of Concentration and Diversity of Loan Portfolio on The Bank Equity Return:

A Cross Country Analysis. *Turkish Journal of Computer and Mathematics Education* , 12. 1950-1962.

Mugenda, O. a. (2003). Research Methods, Quantitative and Qualitative Approaches. Nairobi: ACT.

Murira, M. M. (2010). The Relationship between Loan portfolio composition and Financial performance of commercial banks in Kenya. *Unpublished master's thesis,*.

Muteti, R. S. (2014). Relationship between financial risk management and financial performance of commercial banks in Kenya. *Unpublished master's thesis*.

Nachmias, C. F. (2003). *Research methods in the social sciences. (5th ed.).* London: Arnold.

Ndudruri, L. (2013). Assessment of effects of mortgage on financial performance of commercial banks in Kenya. *Unpublished master's thesis, Nairobi.*

Ndururi, L. (2013). *Assessment of effects of mortgage on financial performance of commercial banks in Kenya.* Nairobi: Kenyatta University.

Onchomba, M. (2019). *Influence of loan portfolio on financial performance of commercial banks in kenya.* Nairobi: Jomo Kenyatta University of Technology.

Ongore, V. &. (2013). Determinants of Financial Performance of Commercial Banks in Kenya. *International Journal of Economics and Financial issues*, 13(1), 237-252.

Purwohandoko. (2017). The Influence of Firm Size, Growth, and Profitability on Firm Value with Capital Structure as the Mediator. *International Journal of Economics and Finance, Canadian Center of Science and Education*, vol. 9(8), pages 103-110, August.

Rauch, A. W. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice*, 33(3), 761–787.

Saba, I. K. (2012). Determinants of non-performing loans: Case of US banking sector. *The Romanian Economic Journal*, 44(6), 125-136.

Shafie, S. A. (2004). Adopting and measuring customer service quality in Islamic banks: A case study of Bank Islam Malaysia Berhad. *Journal of Muamalat and Islamic Finance Research*.

Sharpe, W. (1964). Capital Asset Prices. *A Theory of Market Equilibrium under*

Conditions ofRisk. Journal of Finance, 19, 425-442.

Swarnapali, R. M. (2014). Firm specific determinants and financial performance of licensed commercial banks in Sri Lanka. Proceedings of the 3rd International Conference on Management and Economics, 26-27.

Tabak, B. M., Fazio, D. M., & Cajueiro, D. O. . (2011). The effects of loan portfolio concentration on Brazilian banks' return and risk. *Journal of Banking and Finance*, 35(11), 3065–3076.

Von Stauffenberg, D. (2002). Definitions of selected financial terms, indicators, and adjustments for microfinance. *MicroBanking Bulletin*, pp.3-15.

Wilson Sy. (2007). A Causal Framework for Credit Default Theory. *Research Paper Series 204, Quantitative Finance Research Centre,University of Technology, sydney.*

APPENDICES

Appendix I: List of listed Commercial banks.

1. Barclays Group Kenya.

2. Co-operative Bank.

3. Diamond Trust Bank.

4. Equity Bank

5. Housing Finance Group (HF Group)

6. I & M Holdings

7. Kenya Commercial Bank (KCB).

8. National Bank of Kenya (NBK)

9. NIC Bank

10. Stanbic Holdings.

11. Standard Chartered

Appendix II: Data Collection Form

NAME	Year	Bank Value	Real estate Loans	Retail and personal loans	Enterprise and Trade loans	Agricultural Loans
Barclays Group Kenya	2017					
Barclays Group Kenya	2018					
Barclays Group Kenya	2019					
Barclays Group Kenya	2020					
Barclays Group Kenya	2021					
Co-operative Bank	2017					
Co-operative Bank	2018					
Co-operative Bank	2019					
Co-operative Bank	2020					
Co-operative Bank	2021					
Diamond Trust Bank	2017					
Diamond Trust Bank	2018					
Diamond Trust Bank	2019					
Diamond Trust Bank	2020					
Diamond Trust Bank	2021					
Equity Bank	2017					
Equity Bank	2018					
Equity Bank	2019					
Equity Bank	2020					
Equity Bank	2021					
Housing Finance Group (HF Group)	2017					
Housing Finance Group (HF Group)	2018					
Housing Finance Group (HF Group)	2019					
Housing Finance Group (HF Group)	2020					
Housing Finance Group (HF Group)	2021					
I & M Holdings	2017					
I & M Holdings	2018					
I & M Holdings	2019					
I & M Holdings	2020					
I & M Holdings	2021					
Kenya Commercial Bank (KCB)	2017					
Kenya Commercial Bank (KCB)	2018					
Kenya Commercial Bank (KCB)	2019					
Kenya Commercial Bank (KCB)	2020					
Kenya Commercial Bank (KCB)	2021					
National Bank of Kenya	2017					

(NBK)						
National Bank of Kenya (NBK)	2018					
National Bank of Kenya (NBK)	2019					
National Bank of Kenya (NBK)	2020					
National Bank of Kenya (NBK)	2021					
NIC	2017					
NIC	2018					
NIC	2019					
NIC	2020					
NIC	2021					
Stanbic Holdings	2017					
Stanbic Holdings	2018					
Stanbic Holdings	2019					
Stanbic Holdings	2020					
Stanbic Holdings	2021					
Standard Chartered	2017					
Standard Chartered	2018					
Standard Chartered	2019					
Standard Chartered	2020					
Standard Chartered	2021					

Appendix III: Research Data

NAME	Bank Value	Real estate Loans	Retail and personal loans	Enterprise and Trade loans	Agricultural Loans
Barclays Group Kenya	0.22879	0.834107	0.205469	0.667843	0.852243
Barclays Group Kenya	1.646025	0.879311	0.126063	0.687102	0.850222
Barclays Group Kenya	3.303023	0.781002	0.915176	0.937374	0.32333
Barclays Group Kenya	3.895592	0.902569	0.073339	0.705281	0.872726
Barclays Group Kenya	5.190465	0.93987	0.064654	0.734409	0.908773
Co-operative Bank	0.493807	0.637137	0.545397	0.497875	0.616076
Co-operative Bank	1.678945	0.792167	0.237158	0.619007	0.765977
Co-operative Bank	3.412758	0.855382	0.089018	0.668383	0.82708
Co-operative Bank	4.016301	0.604314	0.142251	0.695561	0.901067
Co-operative Bank	5.278253	0.908903	0.016004	0.71023	0.906316
Diamond Trust Bank	0.3215	0.607769	0.213322	0.474927	0.606065
Diamond Trust Bank	0.833986	0.892172	0.219845	0.697151	0.862692
Diamond Trust Bank	2.63364	0.927938	0.103448	0.725109	0.89726
Diamond Trust Bank	3.687096	0.951163	0.538671	0.743228	0.948459
Diamond Trust Bank	4.82834	0.896586	0.160352	0.700601	0.894058
Equity Bank	0.636463	0.768557	0.622207	0.600558	0.743154
Equity Bank	1.733813	0.912582	0.153416	0.71311	0.882412
Equity Bank	3.500546	0.886861	0.043552	0.693011	0.85753
Equity Bank	4.268691	0.898122	0.089706	0.701801	0.895566
Equity Bank	6.035425	0.589566	0.341965	0.730269	0.946035
Housing Finance Group (HF Group)	0.702304	0.681765	0.904816	0.532733	0.659199
Housing Finance Group (HF Group)	2.260541	0.771149	0.903679	0.925585	0.321842
Housing Finance Group (HF Group)	3.500546	0.607769	0.200539	0.464667	0.615478
Housing Finance Group (HF Group)	4.444267	0.76779	0.091352	0.706871	0.953354
Housing Finance Group (HF Group)	7.736317	0.943901	0.051452	0.737588	0.912717
I & M Holdings	0.7895	0.895307	0.531767	0.57059	0.874118
I & M Holdings	1.196111	0.937343	0.49992	0.732459	0.934696
I & M Holdings	2.962845	0.899562	0.145583	0.701969	0.915695
I & M Holdings	3.851698	0.894187	0.010103	0.698711	0.891651
I & M Holdings	5.025863	0.797062	0.111739	0.622846	0.770704
Kenya Commercial Bank (KCB)	0.493807	0.146292	0.081889	0.56696	0.629024
Kenya Commercial Bank (KCB)	1.678945	0.696385	0.226487	0.729549	0.84042
Kenya Commercial Bank (KCB)	3.467626	0.931649	0.027875	0.702911	0.9106

Kenya Commercial Bank (KCB)	4.137009	0.946333	0.206693	0.739478	0.915037
Kenya Commercial Bank (KCB)	5.92569	0.938623	0.284011	0.733449	0.935972
National Bank of Kenya (NBK)	0.801065	0.931585	0.261779	0.727929	0.900769
National Bank of Kenya (NBK)	2.370276	0.890156	0.195831	0.735938	0.94482
National Bank of Kenya (NBK)	3.610281	0.910471	0.091614	0.71143	0.880353
National Bank of Kenya (NBK)	4.488161	0.796358	0.278036	0.622276	0.794101
National Bank of Kenya (NBK)	11.44536	0.916005	0.072805	0.71578	0.913421
NIC	0.9789	0.768142	1.204839	0.706241	0.945243
NIC	0.801065	0.921571	0.674443	0.731139	0.707104
NIC	2.41417	0.879087	0.262441	0.686922	0.850019
NIC	3.643202	0.89825	0.200139	0.701891	0.868521
NIC	4.751525	0.916069	0.14212	0.71581	0.885776
Stanbic Holdings	0.23313	0.729496	0.068637	0.460708	0.587911
Stanbic Holdings	1.042482	0.926338	0.567293	0.727989	0.929015
Stanbic Holdings	2.864083	0.854678	0.165447	0.723849	0.923713
Stanbic Holdings	3.796831	0.896234	0.52943	0.700301	0.866578
Stanbic Holdings	4.927101	0.932385	0.186044	0.728559	0.901552
Standard Chartered	1.646025	0.93456	1.010092	0.729669	0.947143
Standard Chartered	3.335944	0.785449	0.505151	0.613757	0.783217
Standard Chartered	3.917539	0.604634	0.108662	0.72013	0.932886
Standard Chartered	5.223386	0.931041	0.093317	0.727539	0.900276
Standard Chartered	4.3894	0.846552	0.368407	0.661484	0.818554

Appendix IV: Data Analysis
Descriptive Statistics
Correlations

N		Minimum	Maximum	Mean	Std. Deviation
Bank Value	55	.228790	11.445360	3.13593553	2.115880485
Real estate Loans	55	.146292	.951163	.82891375	.141417612
Retail and personal loans	55	.010103	1.204839	.29391718	.280977809
Enterprise and Trade loans	55	.460708	.937374	.68579158	.088342049
Agricultural Loans	55	.321842	.953354	.83124582	.139779482
Valid N (listwise)	55				

Correlations

Bank Value			Real estate Loans	Retail and personal loans
Pearson Correlation	Bank Value	1.000	.266	-.393
	Real estate Loans	.266	1.000	-.053
	Retail and personal loans	-.393	-.053	1.000
	Enterprise and Trade loans	.320	.445	.153
	Agricultural Loans	.327	.462	-.357
Sig. (1-tailed)	Bank Value	.	.025	.002
	Real estate Loans	.025	.	.351
	Retail and personal loans	.002	.351	.
	Enterprise and Trade loans	.009	.000	.132
	Agricultural Loans	.007	.000	.004
N	Bank Value	55	55	55
	Real estate Loans	55	55	55
	Retail and personal loans	55	55	55
	Enterprise and Trade loans	55	55	55
	Agricultural Loans	55	55	55

Correlations

			Enterprise and Trade loans	Agricultural Loans
Pearson Correlation	Bank Value		.320	.327
	Real estate Loans		.445	.462
	Retail and personal loans		.153	-.357
	Enterprise and Trade loans		1.000	.138
	Agricultural Loans		.138	1.000
Sig. (1-tailed)	Bank Value		.009	.007
	Real estate Loans		.000	.000
	Retail and personal loans		.132	.004
	Enterprise and Trade loans		.	.158
	Agricultural Loans		.158	.
N	Bank Value		55	55
	Real estate Loans		55	55
	Retail and personal loans		55	55
	Enterprise and Trade loans		55	55
	Agricultural Loans		55	55

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics F Change	df1
1	.564ᵃ	.318	.263	1.816001585	.318	5.827	4

Model Summaryb

Model	df2	Change Statistics Sig. F Change	Durbin-Watson
1	50	<.001	1.457

a. Predictors: (Constant), Agricultural Loans, Enterprise and Trade loans , Retail and personal loans , Real estate Loans

b. Dependent Variable: Bank Value

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.862	4	19.216	5.827	<.001ᵇ
	Residual	164.893	50	3.298		
	Total	241.755	54			

a. Dependent Variable: Bank Value

b. Predictors: (Constant), Agricultural Loans, Enterprise and Trade loans , Retail and personal loans , Real estate Loans

Coefficientsa

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-3.650	2.336		-1.563	.124
	Real estate Loans	.512	2.189	.034	.234	.816
	Retail and personal loans	-3.026	.966	-.402	-3.133	.003
	Enterprise and Trade loans	8.386	3.186	.350	2.632	.011
	Agricultural Loans	1.805	2.151	.119	.839	.405

Coefficientsa

Model		95.0% Confidence Interval for B Lower Bound	Upper Bound	Correlations Zero-order	Partial	Part
1	(Constant)	-8.342	1.041			
	Real estate Loans	-3.884	4.909	.266	.033	.027
	Retail and personal loans	-4.966	-1.086	-.393	-.405	-.366
	Enterprise and Trade loans	1.986	14.786	.320	.349	.307
	Agricultural Loans	-2.515	6.124	.327	.118	.098

Coefficients

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Real estate Loans	.637	1.569
	Retail and personal loans	.829	1.206
	Enterprise and Trade loans	.771	1.297
	Agricultural Loans	.676	1.480

a. Dependent Variable: Bank Value

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	(Constant)[1]	Variance Proportions	
					Real estate Loans	Retail and personal loans
	1	4.532	1.000	.00	.00	.01
	2	.431	3.243	.00	.00	.78
	3	.016	16.976	.04	.00	.20
	4	.014	17.684	.17	.84	.00
	5	.007	26.123	.79	.15	.01

Collinearity Diagnostics[a]

Model	Dimension	Variance Proportions	
		Enterprise and Trade loans	Agricultural Loans
1	1	.00	.00
	2	.00	.00
	3	.30	.64
	4	.01	.09
	5	.69	.27

a. Dependent Variable: Bank Value

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.38207686	4.50993919	3.13593553	1.193052607	55
Residual	-3.064828157	7.195937634	.000000000	1.747448340	55
Std. Predicted Value	-2.949	1.152	.000	1.000	55
Std. Residual	-1.688	3.963	.000	.962	55

a. Dependent Variable: Bank Value

Correlations

		Bank Value	Real estate Loans	Retail and personal loans
Bank Value	Pearson Correlation	1	.266[*]	-.393[**]
	Sig. (2-tailed)		.049	.003
	N	55	55	55
Real estate Loans	Pearson Correlation	.266[*]	1	-.053
	Sig. (2-tailed)	.049		.702
	N	55	55	55
Retail and personal loans	Pearson Correlation	-.393[**]	-.053	1
	Sig. (2-tailed)	.003	.702	
	N	55	55	55
Enterprise and Trade loans	Pearson Correlation	.320[*]	.445[**]	.153
	Sig. (2-tailed)	.017	<.001	.264
	N	55	55	55
Agricultural Loans	Pearson Correlation	.327[*]	.462[**]	-.357[**]
	Sig. (2-tailed)	.015	<.001	.007
	N	55	55	55

		Enterprise and Trade loans	Agricultural Loans
Bank Value	Pearson Correlation	.320[*]	.327[*]
	Sig. (2-tailed)	.017	.015
	N	55	55
Real estate Loans	Pearson Correlation	.445[**]	.462[**]
	Sig. (2-tailed)	<.001	<.001
	N	55	55
Retail and personal loans	Pearson Correlation	.153	-.357[**]
	Sig. (2-tailed)	.264	.007
	N	55	55
Enterprise and Trade loans	Pearson Correlation	1	.138
	Sig. (2-tailed)		.316
	N	55	55
Agricultural Loans	Pearson Correlation	.138	1
	Sig. (2-tailed)	.316	
	N	55	55

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Case Processing Summary

Bank Value			Real estate Loans	Retail and personal loans
Series or Sequence Length		55	55	55
Number of Missing Values in the Plot	User-Missing	0	0	0
	System-Missing	0	0	0

Bank Value			Agricultural Loans	Enterprise and Trade loans
Series or Sequence Length		55	55	
Number of Missing Values in the Plot	User-Missing	0	0	
	System-Missing	0	0	

The cases are unweighted.

Estimated Distribution Parameters

Bank Value			Real estate Loans	Retail and personal loans	Agricultural Loans
Normal Distribution	Location	3.13593553	.82891375	.29391718	.83124582
	Scale	2.115880485	.141417612	.280977809	.139779482

Bank Value		Enterprise and Trade loans
Normal Distribution	Location	.68579158
	Scale	.088342049

The cases are unweighted.