LOAN PRICING TECHNIQUES, REGULATORY ENVIRONMENT ON PERFORMANCE OF TIER ONE COMMERCIAL BANKS IN KENYA

BY

DICKSON KIPROP CHEMJOR

12/00374

MASTER OF SCIENCE IN DEVELOPMENT FINANCE

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A DISSERTATION SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE IN DEVELOPMENT FINANCE IN THE SCHOOL OF BUSINESS AT KCA UNIVERSITY

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DECLARATION

I declare that this dissertation is my own work and is not derived from work done elsewhere which resulted in the award of any other master's degree. I also certify that this work does not have other people's writings and publication where proper acknowledgment is not made to the author.

Signature:  Date: 14th October, 2025

Dickson Kiprop Chemjor

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I do hereby confirm that I have examined this master's dissertation of **Dickson Kiprop Chemjor** and have approved it for examination

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Dr. Peter Njuguna

ABSTRACT

This study investigates the effect of loan pricing strategies, specifically cost-plus pricing, risk-based pricing, and market-based pricing, on the performance of tier 1 commercial banks in Kenya. The study is motivated by inconsistent and inadequate loan pricing policies that have resulted in a rising number of non-performing loans (NPLs), diminishing profitability, and deteriorating asset quality throughout the industry. The objectives are to evaluate the effect of each pricing model on key performance indicators, including returns on assets (ROA), returns on equity (ROE), and non-performing loan (NPL) rates. The target population encompassed all designated Tier 1 commercial banks in Kenya, from which a representative of 90 observations sample was obtained through a purposive sampling method. A collection of secondary data was obtained from audited financial statements and regulatory reports spanning 2015 to 2024. The study found that cost-plus pricing ($\beta = -0.053$, $p = 0.677$), risk-based pricing ($\beta = -0.043$, $p = 0.726$), and market-based pricing ($\beta = -0.098$, $p = 0.368$) had weak, negative, and insignificant effects on Tier 1 banks' performance, while the regulatory environment ($\beta = 0.865$, $p = 0.376$) showed a mild positive but insignificant influence. The conclusion indicates that while pricing models theoretically shape profitability, their practical impact is limited by regulatory rigidity, risk mispricing, and macroeconomic instability. It is recommended that banks adopt flexible, data-driven pricing systems, strengthen credit risk evaluation, and enhance regulatory collaboration. Policymakers should encourage digital innovation and balanced oversight. Future studies should expand coverage to lower-tier banks, include macroeconomic variables, and apply longitudinal or mixed-method designs to better capture the evolving relationship between pricing strategies and bank performance.

Key Words; ***Loan Pricing Techniques, Tier 1 Commercial Banks, Cost-Plus Pricing, Risk-Based Pricing, Market-Based Pricing, Bank Performance***

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DEDICATION

This work is dedicated to my family and mentors, whose unwavering support and encouragement have been the foundation of my academic journey.

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ACRONYMS AND ABBREVIATIONS

CBIRC – China Banking and Insurance Regulatory Commission

CBN – Central Bank of Nigeria

CBR – Central Bank Rate

COs – Contracting Officials

FDIC – Federal Deposit Insurance Corporation

FEM – Fixed Effect Model

GEHP – Government Employee Housing Projects

GDP – Gross Domestic Product

LGD – Loss Given Default

NHA – National Housing Authority

NPLs – Non-Performing Loans

NSE – Nairobi Securities Exchange

PD – Default Probabilities

PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses

RBV – Resource-Based View

RDD – Regression Discontinuity Design

REM – Random Effect Model

ROA – Return on Assets

ROE – Return on Equity

SARB – South African Reserve Bank

TINA – Truth in Negotiations Act

VRIN – Valuable, Rare, Inimitable, and Non-substitutable attributes

OPERATIONAL DEFINITION OF TERMS

Cost-Plus Pricing: This is defined as the loan pricing method where the interest rate is determined by aggregating the cost of funds, additional operating expenses, and a targeted profit margin, ensuring comprehensive cost coverage and attainment of the desired profitability (Insightful Banking, 2023).

Market-Based Pricing: Pricing strategy linked to educated market factors such as prevailing interest rates, inflation patterns, and current financial market rates (Gyau et al., 2024)

Risk-Based Pricing: A method of loan pricing that establishes the interest rates imposed on the borrower based on their creditworthiness, utilizing credit scoring, risk categorization, and anticipated loss provisions associated with the loan (Sunandoroy, 2024).

Tier 1 Commercial Banks: The largest banks in Kenya, ranked by asset base, client deposits, and market share, are regulated by the Central Bank of Kenya and classified as systemically important within the financial industry (Kurniawati et al., 2025).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The performance of commercial banks is a crucial factor in the development and stability of any economy, as they serve as the primary agents of financial intermediation. In recent years, many banks have experienced a decline in profitability, a rise in non-performing loans (NPLs), and diminished competitiveness due to disruptive factors such as regulatory reforms and technological advancements (Kenya Bankers Association, 2023). Such issues have raised doubts regarding their efficiency, risk management, and pricing accuracy. Their efforts to enhance credit assessment and to standardize interest rates on loans have resulted in several garages struggling to align the interest rate with costs, credit expenses, and concealed risk values (European Central Bank, 2024). Returns continue to diminish due to subpar loan performance, adversely impacting the banks' ability to meet the expectations of stakeholders and regulators (Naili & Lahrichi, 2022). The study sought to analyze the factors influencing the performance of commercial banks and the efficacy of pricing models, thereby providing evidence-based knowledge to ensure sustainable banking practices and financial sector stability.

The performance of U.S. commercial banks serves as a benchmark for the global community due to the nation's advanced financial systems and stringent regulatory frameworks (Adrian et al., 2024). In mid-2024, the U.S. banking sector recorded a return on assets (ROA) of 1.23 % and a return on equity (ROE) of 11.3 %, as stated by the Federal Deposit Insurance Corporation (FDIC) (Federal Deposit Insurance Corporation, 2025). This is, however, susceptible to a rise in loan defaults, particularly as interest rates have escalated and lending conditions have tightened. In 2023, non-performing loans (NPLs) rose by 18 % relative to 2022 (Federal Deposit Insurance Corporation, 2025). These trends underscore the imperative for efficient loan pricing and risk assessment systems. The challenges faced by U.S. banks have

underscored the necessity of aligning performance metrics with lending strategies relevant to this study, which sought to identify factors influencing the performance of commercial banks and the effectiveness of pricing models in ensuring profitability and credit stability.

The Chinese commercial banking sector, the largest in Asia, is crucial to economic growth but is currently under significant performance pressure. The China Banking and Insurance Regulatory Commission (CBIRC) said that in 2023, the average non-performing loan (NPL) ratio was 1.62%, while the return on assets (ROA) was a comparatively low 0.79% (KPMG China, 2023). Despite the dominant presence of state-owned banks, escalating credit risks, especially in the property market and SME lending, have necessitated the reformation of regulations and the implementation of a more intricate risk-based pricing model (Gyau et al., 2024). China's transition towards quality growth and financial stability enhances the global demand for improved banking performance indicators (PwC 039 China, 2024). These trends are pertinent to this research as they illustrate the growing sophistication of loan distribution concerning borrower risk, operational costs, and market conditions. Consequently, the Chinese experience serves as a crucial benchmark for evaluating the efficacy of commercial bank policies in developing economies.

The commercial banking sector in Nigeria continues to grapple with profitability, asset soundness, and credit risk challenges. As of 2023, the average non-performing loans (NPL) ratio was 4.8%, just over the 5% threshold established by the Central Bank of Nigeria (CBN) (Gyau et al., 2024). The average return on assets (ROA) was 1.3%, with significant variability in ROA due to fluctuating expenses and differing levels of risk exposure among banks (Odusanya, 2023). Inflationary pressures, currency instability, and elevated funding costs have complicated loan pricing, adversely impacting repayment performance. Many banks also utilize cost-plus models, but risk-based or market-based pricing is minimally integrated (Gyau et al., 2024). The issues align with the objective of the ongoing research examining the determinants of bank

performance and assessing the application of diverse loan pricing methodologies in Nigeria. Understanding how Kenyan banks can attain enhanced financial outcomes through the optimization of pricing structures within a framework of sustainable economic growth is crucial.

The commercial banking sector in South Africa is one of the most developed in Africa; nonetheless, it is facing significant economic challenges. In 2023, the non-performing loan (NPL) ratio in the sector rose from 4.1 % the previous year to 4.6 %, primarily due to family debt and corporate defaults (International Monetary Fund, African Department, 2024). The average return on assets (ROA) for the leading banks, as reported by the South African Reserve Bank (SARB), was 1.4 %, while the return on equity (ROE) was 14.1 % (African Development Bank, 2025). Rising costs and sluggish loan portfolio expansion have impacted the profitability of major banks that have used sophisticated risk-based pricing models. These characteristics position South Africa as a pivotal regional case for examining the effects of pricing measures on performance (South African Reserve Bank, 2024). The relevance of the study on South Africa's integration of risk-based models and performance evaluation for future research lies in the insights it offers regarding the comparison of pricing efficiency and sustainability in emerging banking economies.

The commercial banking sector in Kenya underpins the nation by facilitating financial inclusion and fostering economic prosperity. By 2023, the value of property and equipment rose by KES 1.2 trillion, representing a rise of 17.61 %, while customer bank deposits grew by 15.1 %, attributed to advancements in mobile and online banking (Kenya Bankers Association, 2023). However, asset quality declined: the gross non-performing loan (NPL) ratio of publicly traded banks rose from 12.6 % in 2023 to 13.2 % in fiscal year 2024, exceeding the 10-year average of 11.1 % (Central Bank of Kenya, 2025). The average NPL ratio deteriorated to 14.0% in Q1 2025, despite an improvement in coverage to 66.4%. The profit margins are commendable, exemplified by Standard Chartered Kenya, which reported a 15 % rise in pre-tax profit (KES 19.6 billion) in

2023 (Cytonn Research, 2025). The variables influencing these dynamics, including rapid industry expansion, digital advancement, and rising credit risk, significantly impact the analysis of the relationship between pricing models and performance measures in the Kenyan commercial banking sector.

1.1.1 Performance of Commercial Banks

The performance of commercial banks is linked to their profitability, asset quality, and ability to mitigate credit risk exposure. This study used three primary metrics to assess performance: Return on Assets (ROA), Loan Repayment Rate, and Non-Performing Loan (NPL) Ratio. ROA serves as a metric for asset efficiency in generating economic returns for the bank. The Loan Repayment Rate assesses the proportion of loans repaid within a specified timeframe, whereas the NPL Ratio reflects asset quality by indicating the volume of loans that are deteriorating. Haile and Joshi (2022) assert that rising operating expenses and non-performing loans negatively impact the return on assets of Ethiopian banks. Similarly, Nguyen (2023) showed that elevated NPL levels diminish ROA and ROE in Vietnamese banks. This study evaluated bank performance based on profitability (ROA), repayment efficiency (Loan Repayment Rate), and credit risk exposure (NPL Ratio).

1.1.2 Market-Based Pricing Models

The interest rate applied to loans is determined by market-based pricing models, which utilize market factors such as the Central Bank Rate (CBR), Treasury bill rates (T-bills), inflation trends, and loan demand. Macroeconomic conditions influence these models and are prevalent in competitive banking systems. Bikker (2018) indicates that net interest margins and return on assets (ROA) are influenced by macroeconomic variables like GDP and inflation, illustrating that market conditions primarily impact loan pricing and performance. Similarly, a recent study by the Bank for International Settlements (2024) showed that banks facing competitive pressure establish interest rates with less rigidity, taking into account the specific risk of the borrower

while aligning more closely with macroeconomic trends. This model incorporates benchmark rate levels (CBR and T-bills), loan volumes, and inflation. This study examines market-based pricing characteristics, including the correlation of rates with macroeconomic variables, demand elasticity, and the transmission effects of inflation.

1.1.3 Risk-Based Pricing Models

The risk-based pricing approach determines loan interest rates based on the borrower's risk profile, ensuring that those with higher risk incur rates sufficient to offset potential losses. These models encompass credit ratings and scores, risk ratings, expected default probability (PD), loss given default (LGD), and necessary provisions. The Bank for International Settlements (2024) asserts that the efficacy of risk-based pricing diminishes in highly competitive markets, perhaps leading to the underpricing of risk by the bank. Sunandoroy (2024) presents a comprehensive model that incorporates the cost of capital, operating overheads, and risk-based premiums in the pricing process. The primary indications in this model are the borrower's risk rating, the distribution of non-performing loans by risk category, and provisioning. This study encompassed variables such as risk segmentation (differentiating prices based on borrower classifications), risk-adjusted premium (pricing based on Probability of Default and Loss Given Default), and the appropriateness of provisions in managing credit risk while ensuring effective pricing.

1.1.4 Cost-Plus Pricing Models

Cost-plus pricing is a traditional method of setting interest rates, calculated by adding a profit margin to the bank's cost of funds and operational expenses. It is straightforward to use and is prevalent at institutions in which high-risk assessment technologies are not possible. According to Insightful Banking (2023), the model typically includes the cost of capital, administrative expenses, risk premium, and a target margin. Similarly, the Definition (2023) describes cost-plus pricing as a methodology where cost rates are established by aggregating all cost components along with a predetermined profit margin. Although this method is relatively straightforward, it

may be inadequate in addressing the risk exposures of borrowers. Indicators include cost of funds, overhead expenses, profit margins, and non-performing loan ratios. This study examined the model through the aspects of cost structure (financing and operations), margin setting (profit objectives), and risk buffering (including pricing of potential defaults), linking these factors with bank performance outcomes.

1.1.5 Tier I Commercial Banks in Kenya

In Kenya, tier I commercial banks represent the greatest assets, clientele, and branch networks, playing a crucial role in enhancing the performance and stability of the financial sector. The Central Bank of Kenya (2025) observes that over fifty percent of industry assets and deposits are concentrated within Tier I banks, including KCB, Equity Bank, Cooperative Bank, NCBA, and Standard Chartered. Their dominance stems from robust capital foundations, strong digital banking infrastructures, and extensive regional coverage (Kenya Bankers Association, 2023). Tier I banks face challenges such as non-performing loans, regulatory costs, and competition from fintechs, notwithstanding their resiliency (Cytonn Research, 2025). The dynamics make them essential to this study, as their lending policies and performance significantly shape the banking industry landscape in Kenya, with financial inclusion, credit stability, and sustainable growth as critical considerations.

1.2 Statement of the Problem

The performance of commercial banks strongly depends on how well and accurately they are priced when it comes to loans. Poor pricing may lead to a disparity between interest rates and the risk of the borrower, which causes an increase in non-performing loans (NPLs) and may lead to the loss of profitability (Naili and Lahrichi, 2022). In Kenya, NPL ratio has increased to 12.6% in 2023 and 14.0% in early 2025, which exceeds the average of 11.1% over the ten years (Kenya Bankers Association, 2025). The U.S. banking industry experienced a 18% increase in NPLs as of 2023 worldwide because of the tighter lending policies and inefficient pricing policies (Adrian

et al., 2024). Such trends demonstrate that highly discrepant pricing of loans may undermine the quality of the asset, the adequacy of the capital base, and the overall financial stability with repercussions on the confidence of the investors and the growth of the economy.

The cause of this discrepancy and lack of sophistication of the pricing mechanisms is the root of the problem. Cost-plus pricing remains widely used by many banks, where the operational costs and profit margins are combined without the sufficient consideration of the risk of a borrower or the current market situation (Ogbe, Okeke, and Ayilla, 2024). This can cause overpricing of loans that decrease demand and competitiveness of the loans or underpricing which increases the likelihood of default. Despite the presence of risk-based and market-based models, their direct effects on key performance indicators such as the return on assets (ROA), the loan repayment rates, and NPL ratios are poorly researched in emerging markets such as Kenya.

In the existing literature, there is a tendency to focus on the investigation of the pricing models separately and not to consider the integrated analysis, combining cost-plus, risk-based and market-based, and taking into consideration the macroeconomic dynamics (inflation, interest rates variations, and market demand). This is one of the major research gaps since very little empirical research has been conducted to determine the overall effects of various pricing strategies on the performance of banks in some different economic conditions. This paper adds to the literature by analyzing comparative efficiency of various pricing models in the Kenyan framework using updated information and using a holistic approach to analysis, which incorporates borrower risk, operational costs, and macro-economic dynamics. The findings will give practical recommendations that banks can use to maximize their prices and profits, reduce credit risks and resilience of their financial sectors.

1.3 Objectives of the Study

1.3.1 General Objectives

To analyze the effect of different pricing strategies cost-plus pricing, risk-based pricing, and market-based pricing on the performance of Tier 1 commercial banks in Kenya

1.3.2 Specific Objectives

i. To examine the effect of cost-plus pricing on the performance of Tier 1 commercial banks in Kenya
ii. To assess the impact of risk-based pricing on the performance of Tier 1 commercial banks in Kenya
iii. To evaluate the influence of market-based pricing on the performance of Tier 1 commercial banks in Kenya
iv. To determine the moderating effect of the regulatory environment on the relationship between loan pricing models and the performance of Tier 1 commercial banks in Kenya.

1.4. Research Questions

i. What is the effect of cost-plus pricing on the performance of Tier 1 commercial banks in Kenya?
ii. How does risk-based pricing impact the performance of Tier 1 commercial banks in Kenya?
iii. In what ways does market-based pricing influence the performance of Tier 1 commercial banks in Kenya?
iv. To what extent does the regulatory environment moderate the relationship between loan pricing models and the performance of Tier 1 commercial banks in Kenya?

1.5. Justification of the Study

The study is significant as it examines the crucial relationship between loan pricing strategies and the performance of Tier 1 commercial banks in Kenya within a dynamic regulatory context.

In a market where profitability, credit accessibility, and risk management are increasingly scrutinized, it is essential to understand how cost-plus, risk-based, and market-based pricing influence return on assets (ROA), loan repayment rates, and non-performing loan (NPL) ratios. In the absence of this study, banks may continue to employ suboptimal pricing models, leading to diminished profitability, heightened defaults, and non-compliance issues. Nonetheless, when examined, the study offers practical recommendations for banks to align their pricing strategies with market conditions and governmental frameworks. It provides empirical insights for policymakers to inform their regulations. The study ultimately enhances stability, efficiency, and openness within the Kenyan banking sector, benefiting institutions, borrowers, regulators, and the entire economy.

1.6 Significance of the Study

1.6.1. Significance to Commercial Banks

This study provides a comprehensive examination of the effect of different loan pricing strategies on financial performance, serving as a reference for optimizing pricing procedures among Tier 1 commercial banks in Kenya. The evaluation of cost-plus, risk-based, and market-based models allows banks to align pricing with operational efficiency, risk profile, and market trends. Compliance and strategic adaptation can be attained by comprehending the function of regulatory frameworks, such as interest rate restrictions and the utilization of credit bureaus. The data can guide management in making decisions to enhance asset returns, increase loan repayment levels, and decrease non-performing loans. This is crucial for sustainability and competitiveness in the evolving financial ecosystem marked by regulatory alterations and shifts in economic indicators.

1.6.2. Significance to Policymakers and Regulators

This study will significantly assist policymakers, notably the Central Bank of Kenya and governmental regulatory bodies, by offering empirical information on the relationship between

loan pricing systems and bank performance under current regulations. It highlights the implications of measures such as interest rate limiting, credit information sharing, and sector regulation on risk mitigation and credit accessibility. Future regulatory measures aimed at reconciling the objectives of financial sector stability and consumer protection may benefit from the findings. The regulations enable authorities to devise responsive policies that encourage lending while safeguarding the banking sector from systemic threats.

1.6.3. Significance to Researchers and Academics

The study enhances the current understanding of financial intermediation, loan pricing, and bank performance, particularly in emerging economies like Kenya. It constitutes a pricing theory practice inside a segmented context and serves as a framework for future research endeavors. This study serves as a reference for academics and students in development finance, banking, and economics who aim to deepen their understanding of related topics such as credit risk modeling and policy assessment/pricing efficiency. The methodology that integrates panel data with regression analysis serves as a framework for empirical modeling in financial research. Consequently, it aids in strengthening academic discourse and facilitates curriculum development.

1.6.4. Significance to Investors and the General Public

Investors possess the advantage of understanding how a pricing strategy influences bank profitability, repayment capacity, and credit quality, which are essential variables in investment decisions. An enhanced comprehension of how banks price loans and respond to regulatory influences aids investors in assessing risk, forecasting performance, and making wise portfolio choices. This comparison enhances the awareness and comprehension of most individuals, particularly borrowers, regarding the calculation of lending rates and the impact of rules on credit accessibility. It enhances financial literacy and empowers borrowers to make more

informed decisions regarding loan products. Improved transparency and familiarity can foster long-term trust between banks and their stakeholders.

1.7 Scope of the Study

The main objective of the research is to evaluate the impact of pricing methodologies, namely cost-plus pricing, risk-based pricing, and market-based pricing, on the performance of publicly listed tier 1 commercial banks in Kenya, with the regulatory environment acting as a moderating variable. The target population comprises all Tier 1 commercial banks registered on the Nairobi Securities Exchange. The secondary panel data was collected through the examination of published financial reports, regulatory reports, and records from the Central Bank of Kenya. The timeframe spanned from 2015 to 2024. The ascent commenced in April 2025 and concludes at the end of October 2025, allowing adequate time for data analysis, interpretation, and reporting of findings.

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CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive synthesis of literature evaluations concerning loan pricing and bank performance. The theoretical framework will begin with the presentation of theoretical assumptions, encompassing Risk-Based Pricing Theory, Resource-Based View, and Information Asymmetry Theory, which substantiate the study's assumptions. The empirical review analyzes both global and local evidence regarding the correlation between loan pricing and the performance of commercial banks. A conceptual framework visually illustrates the relationships among key factors, while literature gaps signify areas with minimal prior research. Finally, the operationalization of variables defines the measurement of each concept to provide consistency and clarity in the data collection and analysis process.

2.2 Theoretical Review

This study is founded on three principal theories: Risk-Based Pricing Theory explains how lenders can establish appropriate interest rates commensurate with borrower risk to minimize defaults and maximize returns; Resource-Based View (RBV) emphasizes the significance of internal resources, such as pricing strategies and financial expertise, in enhancing bank performance; and Information Asymmetry Theory posits the challenges banks encounter in evaluating borrower risk due to disparities in information access. The aforementioned theories robustly support the examination of how pricing mechanisms, internal operations, and risk management influence the financial performance of Tier 1 commercial banks in Kenya.

2.2.1 Risk-Based Pricing Theory

The Risk-Based Pricing theory originated in credit risk management, primarily advanced by Stiglitz and Weiss (1981), who addressed credit rationing in the setting of asymmetric information. The idea posits that lenders determine loan interest rates based on the credit risk

assessment of the borrower, imposing higher rates on riskier borrowers to mitigate the potential for default. This model is predicated on the notion of expected utility and information asymmetry, as the lender lacks precise knowledge of the borrower's intentions or their capacity to repay the loan entirely. The imperative of differentiated pricing in banking, particularly in developing and credit-constrained nations, was further substantiated by Mishkin (2006) and Berger and Udell (1995). It provides financial organizations with a rationale to balance profit generation and risk mitigation by establishing loan pricing based on borrower profiles.

Since the early 1980s, the notion of Risk-Based Pricing has undergone a significant transformation. Initially conceptualized through the lens of adverse selection (Stiglitz & Weiss, 1981), it has subsequently evolved, incorporating the development of credit scoring models and the Basel II and III frameworks, which have increasingly concentrated on internal risk-based capital allocation (BCBS, 2004). Altman and Saunders (1998) examined the differentiation of risk-based pricing through the incorporation of quantitative risk analysis methods, primarily in business lending. Over time, advancements in big data analytics and technology have enhanced lenders' precision in assessing and pricing credit risk. Boot and Thakor (2010) contend that the practice has evolved, with the theory now extending beyond interest rate differentiation to include collateralization, credit monitoring costs, and behavioral scoring, thereby broadening its application across retail, SME, and corporate banking sectors. Digital lending platforms and fintech-based algorithmic credit models have also contributed to the advancement of the theory.

The Risk-Based Pricing approach is lauded for enhancing risk-return optimization by reducing moral hazard through pricing that reflects borrower risk. It facilitates a more effective allocation of capital in diverse credit markets, as asserted by Berger and Udell (1995). However, the theory faces criticism about the feasibility of effectively filtering out high-risk, creditworthy borrowers, especially in underbanked regions (Stiglitz & Weiss, 1981). Huang and Huang (2003) assert that, even in volatile economic conditions, excessive reliance on risk models can lead to

inaccurate pricing and an underappreciation of systemic risk. The successful implementation of the idea occurred in industrialized markets such as the U.S. and the U.K., where credit bureaus had substantial data robustness. Conversely, its performance has been subpar in some developing economies due to deficient financial systems and insufficient borrower information, resulting in an inequitable allocation of loans and persistent credit rationing (Mishkin, 2006).

The Risk-Based Pricing theory has been widely applied in empirical economics regarding loan performance, credit dispersion, and lending policy. Drehmann et al. (2010) exemplified the application of the theory to elucidate the influence of capital buffers on the pricing behavior of banks. This is especially relevant when performed by research examining loan pricing methodologies and their effects on financial performance. Concerning Tier 1 commercial banks, the theory substantiates the study of interest rate determination based on borrowers' risk profiles. The research directly addresses the variable of risk-based pricing and its impact on market competitiveness and the bank's profitability. The theory holds significant relevance in contemporary financial systems that have become digitized, as big data and AI provide a more identification of risks, particularly in lending frameworks within the SME and retail sectors in both established and emerging nations.

2.2.2 Resource-Based View (RBV)

Wernerfelt (1984) was the pioneer of the Resource-Based View (RBV), asserting that a firm's competitive edge is derived from its internal resources, which remain unaffected by external market conditions. Barney (1991) expanded this viewpoint by asserting that for a resource to confer lasting competitive advantage, it must be valuable, rare, inimitable, and non-substitutable (VRIN). The Resource-Based View (RBV) initiated a paradigm change, supplanting market positioning (Porter, 1980) with a focus on the unique capabilities and resources inherent to the organization. Penrose (1959) also made prior contributions by asserting that enterprises are collections of productive resources. The writers emphasized the utilization of internal resources,

encompassing knowledge, human capital, and organizational processes, to enhance long-term performance and distinctiveness in competitive marketplaces.

The Resource-Based View has undergone significant evolution since its inception. While Barney (1991) focused on VRIN attributes, later scholars such as Peteraf (1993) asserted that imperfect mobility and ex-post limitations on competition also contribute to competitive advantage. The Resource-Based View (RBV) was further developed by the Dynamic Capabilities Theory proposed by Teece, Pisano, and Shuen (1997), which suggested that firms must be adaptive, integrate, and rearrange resources in response to changing surroundings. Rabinowich and Wasserman (2002) critiqued and refined the Resource-Based View (RBV), asserting that it must be clearer in elucidating causal processes and quantitative constructs. The RBV has been modified to encompass competencies in intangible value drivers, specifically intellectual property and strategic relationships within technology-intensive and knowledge-intensive sectors. Its maturation has expanded its application across several businesses and strategic contexts.

The internally oriented nature of the Resource-Based View (RBV) enhances its strength by enabling a firm to assess and leverage its unique capabilities to sustain optimal performance (Barney, 1991). It has been successfully applied in strategic management, particularly in areas such as technology and banking, where distinction relies on intangible resources (Newbert, 2007). The detractors observe that the theory lacks robust predictive capability and, due to the ambiguous meaning of the term resource, is difficult to verify empirically (Priem & Butler, 2001). It also minimizes the significance of external market factors and is ineffective in highly dynamic or regulated environments, where resources may not yield long-term advantages. In the rapidly evolving realm of e-commerce, the static characteristics of traditional applications of Resource-Based View (RBV) are inadequate (Teece et al., 1997), necessitating an integration with dynamic capabilities or institutional theory to enhance their applicability.

The Resource-Based View (RBV) has been extensively applied in research concerning company performance, strategy formulation, and competitive advantage. This has informed research in the banking sector on how internal strengths such as loan pricing tactics, innovation, and managerial competencies can drive profitability (Akter et al., 2021). The relevance to the current study is in its evaluation of the impact of internal pricing methods as potentially unique and valued skills on the performance of Tier 1 commercial banks. The Resource-Based View (RBV) has been employed to ascertain how financial institutions might leverage their intangible assets, such as risk management systems and digital infrastructure, to enhance their competitiveness (Nguyen & Nghiem, 2019). Consequently, the Resource-Based View (RBV) directly influences variable performance in this study, emphasizing the significance of resource-based competencies regarding financial performance, competitive positioning, and strategic sustainability.

2.2.3 Information Asymmetry Theory

The Information Asymmetry Theory originates from a pivotal research by George Akerlof in 1970, entitled The Market for Lemons. Akerlof proposed a model illustrating how the disadvantaged party in a transaction, typically the seller, tends to possess more information than the buyer, leading to adverse selection in the market (Akerlof, 1970). Michael Spence (1973) advanced this concept by introducing the notion of signaling, while Joseph Stiglitz (1975) examined screening procedures to address knowledge asymmetries. Information asymmetry frequently occurs in financial markets between banks and borrowers, as banks typically lack awareness of the borrower's risk profile. This theoretical framework has significantly influenced credit rationing, loan pricing, and risk mitigation strategies within the banking sector. These economists jointly received the Nobel Prize in 2001 for their contributions to this discipline (Stiglitz & Weiss, 1981).

The idea has significantly evolved since its inception, particularly regarding financial intermediation. Massing, Stiglitz, and Weiss (1981) formalized a model of credit rationing, positing that banks may ration credit due to unobservable borrower risk. The concept of soft capital restrictions was subsequently utilized in corporate finance by Holmström and Tirole (1997), who elucidated the functioning of internal capital markets and soft budget limitations. In contemporary digital financial frameworks, information asymmetry is recognized, highlighting the potential for reducing gaps through technical advancements, while not eliminating them (Yin et al., 2019). Psychological biases have been incorporated into the theory, demonstrating how overconfidence or insufficient information exacerbates asymmetry (Malmendier & Tate, 2005). The theory has broadly expanded across other domains while maintaining its fundamental concept of the unequal distribution of information.

The Information Asymmetry Theory has demonstrated its efficacy in elucidating credit rationing and moral hazard. It has been effectively utilized in credit markets, particularly in elucidating why banks utilize collateral and interest rates as mechanisms for screening (Stiglitz & Weiss, 1981). Nevertheless, the theory has faced criticism for imposing expectations on rational agents and assumptions regarding static information sets. This approach was ineffective during the 2008 global financial crisis, as behavioral considerations and the significance of systemic risk outweighed the notion of asymmetry (Acharya & Richardson, 2009). The presumption of inaccessible data is increasingly contested by the capability of digital platforms to disseminate information instantaneously (Yin et al., 2019). Despite these criticisms, its core concepts remain relevant, especially in contexts where regulation is weak or credit scoring systems are underdeveloped.

The theory has been extensively applied in existing literature concerning lending decisions, interest rate determination, and rate-based loan pricing. For instance, banks typically employ the historical data of borrowers, mortgagees, and credit scores to address information

asymmetry, aligning with the theoretical expectations (Boot & Thakor, 2000). This is particularly relevant to the risk-based pricing variable, where interest rates are determined by the perceived risk of borrowers, often assessed using inaccurate information. Research in emerging economies has demonstrated that knowledge asymmetry leads to loan rationing for SMEs and underscores the necessity of relationship banking (Beck et al., 2006). Consequently, the theory provides a robust conceptual framework for addressing inefficiencies and risk allocation mechanisms in commercial banking operations, specifically regarding card-based loan pricing methodologies.

2.3 Empirical Review

2.3.1 Cost-Plus Pricing and the Performance of Tier 1 Commercial Banks

Ahmed and Nawaz (2024) have advanced the understanding of monetary policy efficiency by modeling a dynamic money market with five distinct agents. The efficiency they analyze pertains to the inefficiencies that emerge between the pre-policy and post-policy equilibrium, a factor often overlooked in contemporary monetary research. Monetary policy activities increase the cost of money provision by the central bank, hence disturbing market equilibrium and initiating adjustments in interest rates, demand, and supply. The authors provide optimal strategies derived from mathematical analyses that minimize efficiency losses. This study contributes to the ongoing discourse over the imperative of dynamic policy frameworks in addition to static ones. Their hypothetical analytical approach facilitates systematic inference of actual effects and can be employed to evaluate policy impacts. The researcher agrees with the emphasis on the inefficiencies of transitions but suggests empirical studies across diverse economies to support the policy reversal in developing nations.

Ogbe, Okeke, and Ayilla (2024) examine the impact of various pricing regimes on the income of maize marketers in Benue State, Nigeria, offering valuable insights into agricultural market behavior. The research employed a structured questionnaire and inferential statistics,

revealing that the predominant pricing strategies were cost-plus pricing and competitive pricing. In contrast, dynamic pricing, despite its infrequent application, had the potential to generate the most significant income. This indicates a disconnect between practice and profitability, suggesting the necessity for better informed pricing decisions. The authors advocate for government-conducted training to improve pricing competencies. Their conclusions are recognized by the broader academic community, emphasizing the critical role of strategic pricing in maximizing income within commodity markets. The researcher agrees with the proposal for targeted capacity building, particularly on underutilized yet effective tactics like dynamic pricing. However, a broader regional comparison may validate the hypothesis. This study underscores the significance of context-specific pricing education to enhance agricultural performance and advocates for the incorporation of marketing literacy into extension programs.

The issue of affordable housing for public sector workers is critically pressing in numerous developing economies, including the Philippines. Michael et al. (2024) elucidate the pricing strategy of the National Housing Authority (NHA) concerning Government Employee Housing Projects (GEHP), highlighting the tension between the government's objective of affordability and fiscal sustainability. Utilizing a PRISMA-based literature review framework, they have ensured a systematic understanding of the demand-supply dynamics in the real estate market. The paper posits that market-driven price flexibility, informed by market signals and transparency, can enhance housing accessibility for low-paid government employees. The researcher agrees with this assertion but expresses discontent over its consideration via the narrow lens of political economy, as it may influence the efficacy of pricing in housing delivery. While the research aligns with recent studies advocating for flexible and evidence-based housing strategies, it will augment the existing knowledge base by emphasizing the importance of frequent evaluation. The literature substantiates the need for responsive, evidence-based pricing

models that account for both macroeconomic fluctuations and the evolving requirements of the workforce.

Value for money in public procurement is contingent upon the proper management of cost, performance, and transparency. Nathan (2024) examines the Truth in Negotiations Act (TINA) and its influence on procurement processes, particularly the advantages of mandated cost disclosures and competitive bidding, to determine if these practices enhance the quality of contracts obtained. The research study employing a regression discontinuity methodology indicates that contracts beyond the regulatory threshold are more likely to attract additional bidders, less likely to undergo renegotiation, and less susceptible to the application of cost-plus pricing. These results align with broader literature indicating that transparency can enhance the efficiency of government contracts. The researcher agrees with Nathan that organized oversight enhances responsibility but critiques the lack of analysis regarding potential supplier actions that may exploit contracts with low thresholds. This disparity underscores the need to examine loopholes and behavioral reactions in future research. In summary, the evidence indicates that regulatory instruments like TINA can substantially enhance procurement outcomes when well enforced and monitored.

A notable trend has emerged, leading Sharia-compliant financial institutions to focus more on performance indicators and investment attractiveness. Ulya et al. (2023) examine the influence of macroeconomic factors (BI Rate) and firm-specific metrics (ROE, EPS, NPM) on the share prices of Sharia Commercial Banks listed on the ISSI. They employed multiple linear regression and determined that the BI Rate and ROE exert a negative and substantial influence on share prices. At the same time, EPS and NPM have a positive and significant effect. The result corroborates existing literature indicating that Sharia bank stocks exhibit significant sensitivity to both internal profitability metrics and external monetary conditions. The researcher agrees with the findings, particularly with the inverse correlation between the BI Rate and share

price, consistent with traditional monetary transmission theory. However, greater emphasis could be placed on Sharia-specific factors, such as compliance levels or ethical screening procedures. This study enhances our comprehension of Islamic financial markets and offers valuable information to investors and policymakers in Sharia-compliant equity markets.

The proliferation of Islamic banking globally renders pricing a critical focus of research, especially in emerging nations. Gheddar (2024) analyzes the pricing strategies employed by Algerian Islamic banks, focusing on cost-based, market-driven, and value-oriented methodologies. The research indicates that most banks, including Al Baraka and Al Salam, rely more on conventional frameworks than on the principles of Islamic finance, which are typically governed by central bank policies and outdated pricing standards. This knowledge refutes the notion that Islamic banks consistently adopt Sharia-compliant or profit-pooling practices. The researcher agrees with Gheddar's conclusion regarding the absence of innovation and alignment with Islamic values in pricing within Algerian Islamic banks, but asserts that this may be attributed to institutional inertia and vague regulations rather than a conscious neglect. The results suggest that cross-functional solutions adhere to scientifically grounded, customer-centric pricing strategies and comply with Sharia principles. The literature will be beneficial since it elucidates the practical disparity between Islamic finance theory and reality, particularly in developing markets like Algeria.

2.3.2 Risk-Based Pricing and the Performance of Tier 1 Commercial Banks

The potential for revenue optimization in the banking sector has increased in prominence due to the interplay of risk exposure and pricing mechanisms. Kurniawati et al. (2025) analyze the effects of macroeconomic volatility, credit risk, and liquidity risk on default probability, which subsequently influences revenue optimization in Indonesian banks. The employed panel regression, VECM, and KMV Merton model demonstrate that heightened credit and liquidity issues significantly elevate default risk and influence loan dynamics. The authors assert that

effective risk-based pricing, asset and liability management, and interest rate strategies are essential for attaining a satisfactory level of profitability in banking. The researcher recognizes the significance of macroeconomic volatility; yet, it is as crucial to examine the internal governance variables that influence pricing decisions. The study contributes to the literature on financial stability. However, it remains deficient in understanding the impact of regional banking structures and customer behavior on revenue strategies, which the current research sought to address within the context of East Africa.

The regulatory capital requirements and their impact on bank profitability are the primary focus of current financial studies in emerging economies. Arin, Nyahas, and Ekoja (2025) investigate the impact of Basel III Tier 1 Capital and Leverage Ratios on the profitability of Nigerian banks, utilizing data from the years 2009-2020. The research utilizing Regression Discontinuity Design indicates that while both ratios significantly enhance Return on Equity (ROE), there is no corresponding adjustment to Return on Assets (ROA), which remains relatively small. This suggests that a more secure capital status enhances shareholder value but does not immediately influence operational efficiency. The authors advocate for the sustained implementation of regulatory actions concerning these ratios. The researcher agrees that capital adequacy enhances ROE, but asserts that asset quality and internal efficiency must also be evaluated in banks to attain comprehensive profitability. This analysis enhances current research by illustrating that capital strength alone is inadequate for optimizing all facets of bank performance, especially in volatile markets.

The accessibility of credit and the profitability of banks in a rising economy are consistently influenced by interest rate regulation. Bogecho and Miroga (2025) examine the implications of the elimination of Kenya's interest rate cap, initially implemented in 2016 to enhance lending affordability. The analysis of data from nine publicly traded banks between 2014 and 2023 indicated that the elimination of caps positively influenced bank profitability,

primarily due to enhanced lending rate margins. However, it also exacerbated credit risk and non-performing loans due to the biases inherent in risk-based pricing. The authors assert that deregulation augmented net interest income; yet, banks did not completely employ modern pricing models, opting instead to persist with traditional lending practices. The researcher advocates for the development of more advanced risk-based frameworks, contending that the elimination of the cap has imposed excessive pressure on high-risk borrowers and exacerbated the disparity between individuals with relatively easy access to credit and those with restricted access. This study is crucial for contextualizing financial liberalization in Kenya, emphasizing the need for equilibrium between profitability and consumer protection in the post-crisis interest regimes.

In credit-dependent economies, credit risk is a primary concern for commercial banks. Nguyen and Nguyen (2024) examine the impact of digital transformation and Basel III on the alteration of credit risk levels in Vietnamese banks from 2017 to 2023. The study, conducted on a sample of 21 publicly traded banks using pooled OLS, FEM, and REM methodologies, indicates that digital regulatory transitions may temporarily elevate credit risk due to the challenges associated with integrating new procedures and system complexities. The authors advocate for enhanced risk governance frameworks and integration methodologies employed in technology. The researcher concedes that digital transformation introduces intervening dangers while recognizing its potential for enhancing the precision of credit assessment in the long term. The study effectively illustrates the impact of modern regulatory and technological alterations on the conventional risk landscape. The current study is augmented by noting that innovation in banking has a dual aspect, serving as both an opportunity and vulnerability in risk management.

Financial institutions exhibit significant performance variability, influenced by their institutional framework, target clientele, and risk tolerance. Ugbaja (2025) performs a comparative analysis of commercial banks and microfinance institutions (MFIs) in Nigeria,

focusing on profitability, credit risk management, and resilience. The study, done using mixed methods with data from 693 respondents, suggests that commercial banks outperform microfinance institutions in Return on Assets (3.5%) and Return on Equity (15.2%), and also exhibit lower non-performing loan (NPL) levels. Conversely, microfinance institutions (MFIs) excel in financial inclusion by providing 78% of their loans to low-income individuals. The author emphasizes the trade-off between outreach and profitability. The researcher agrees that MFIs significantly contribute to inclusiveness but argues that they require enhanced risk frameworks to achieve financial sustainability. This study underscores the importance of risk management methods by aligning with institutional objectives and adding to the ongoing discourse on achieving optimal profit, risk, and inclusion within diverse banking models in emerging nations.

Commercial banks perform a crucial function of financial intermediation, which entails the mobilization of capital and their investment in productive enterprises. Sobirovna (2025) discusses the internal and external factors that affect the investment and lending capacity of banks, including deposit growth, capital sufficiency, regulatory frameworks, and financial innovations. The study emphasizes the heightened importance of instruments such as syndicated loans, subordinated debt, and securities investment in the lending growth of banks. This aligns with the broader academic consensus that risk management and regulatory compliance are crucial in sustaining credit performance. While the author highlights the strategic importance of these financial tools, the researcher contends that without effective governance and transparent institutional frameworks, such mechanisms may not yield the anticipated outcomes in emerging economies. This literature enhances the current analysis by endorsing the necessity of integrated credit enhancement strategies and highlighting the persistent inadequacy of institutional readiness in emerging markets.

2.3.3 Market-Based Pricing and the Performance of Tier 1 Commercial Banks

In volatile financial markets, commercial banks must manage risk well to succeed. Risk disclosure affects risk premia pricing in Chinese commercial banks from 2007 to 2022, according to Wang and Wang (2025). Disclose global systemic elements to considerably lower market and firm-specific risk premiums while increasing transparency and reducing excessive risk-taking. This claims that regulatory information boosts investor confidence and market efficiency. The authors show that banks with stronger internal controls or leverage benefit from transparency. The study provides strong empirical evidence for increased transparency, but the researcher believes that disclosure alone may not be enough without strong laws and investor education. This study emphasizes transparency as a financial risk and market stability management technique.

As market pressures change, central banks are using unconventional monetary measures to stabilize financial systems. Pauls (2023) critically explores the People's Bank of China (PBC)'s market-driven banking reforms that transformed China's financial architecture. The study found that the PBC's interbank bond market and balance sheet expansion have restored its control over credit creation and liquidity, previously threatened by shadow banking. This matches research on central banks' adaptive liquidity and stability management functions. However, the author warns that these approaches integrate the PBC more into political-economic boundaries. While these approaches improve rules, they may reduce central bank independence, says the researcher. This insight shows the trade-offs in central banks' market-based changes to promote structural transformation and stability in the financial industry.

Due to increased competition and regulatory hurdles following the banking crisis, commercial banks are considering non-interest revenue as a diversification strategy. Dzingirai and Dzingirai (2024) use nonlinear threshold models to examine the financial performance of different Zimbabwean banks from 2009 to 2020 regarding non-interest revenue disaggregates.

The data shows that non-interest revenue only improves bank performance when it hits 26%, 17%, and 10% for specific disaggregated categories. This leads to a lack of studies on the optimal income structure of sustainable banking. The researchers attempt to explain why banks below these levels risk underperformance and instability. The present study agrees that diversification strategies must also consider regulatory and macroeconomic factors. This study suggests that well-structured income diversification, supported by regulation, improves commercial bank resilience and long-term profitability in unpredictable financial markets.

Modern literature has the historical view of banks as middlemen between savers and borrowers. Sissoko (2025) revives the early 20th-century banking paradigm by arguing that banks manufacture money, whether through commitments such as contingent claims that operate as near-money. This innovative approach to modern money markets suggests that market-based and bank-based lending are the same systemic process where bank obligations anchor monetary value. The author suggests that authorities define money supply using a liability-based paradigm to understand monetary instruments. The scholar acknowledges that this theoretical paradigm clarifies banks' systematic duties, especially in highly leveraged, liquidity-sensitive circumstances. The current study is informed by literature that prompts reevaluation of regulatory frameworks and lending practices to represent banking organizations' specific monetary roles better.

In response to financial system complexity, central banks have taken a market-oriented approach to credit and liquidity control. Pauls (2025) critiques the People's Bank of China (PBC) for transforming China's financial system through market-oriented reforms. By creating an interbank bond market and strengthening its balance sheet, the PBC reduced shadow banking and regained credit flow control, according to the report. This shows central banks may impact liquidity and financial stability as market makers. The study claims that such initiatives, while beneficial, bind central banks to political-economic frameworks that may limit policy flexibility.

This study agrees that unconventional monetary tools can stabilize banking systems, but they must be utilized with institutional safeguards to avoid policy entrenchment and central authority dependency.

Corporate governance now determines bank financial performance worldwide. Poudel et al. (2024) examine how corporate governance characteristics affected Nepali commercial bank share prices and stock returns from 2015/16 to 2021/22. Board diversity, audit committee size, profitability, and board size improve market price and stock returns, whereas leverage and non-performing loans hurt them. However, more female board involvement increases market valuation, supporting governance literature. The study shows that good governance boosts investor trust and financial transparency. The researcher acknowledges that board membership and supervision procedures significantly impact bank performance. This research supports the current study's recommendation for governance reforms to increase commercial banks' stability and shareholder value.

2.4. Literature Gaps

The literature evaluated shows that bank performance and pricing mechanisms are studied using different methods, however most papers focus on peripheral areas or the banking sector as a whole rather than Tier 1 commercial banks and their pricing strategy. Ahmed and Nawaz (2024) and Ogbe et al. (2024) use mathematical abstraction or agricultural markets to explain dynamic models and revenue optimization, which limits its applicability to Kenyan banks. Michael et al. (2024) and Nathan (2024) analyze public housing and procurement contracting pricing but give strategic lessons that differ from commercial banking operations. Ulya et al. (2023) and Gheddar (2024) discuss bank performance in Sharia or Algerian settings, however they focus on financial ratios or conventional cost-based techniques rather than cost-plus, risk-based, or market-based pricing. This literature is conceptually relevant but does not explicitly address how pricing mechanisms affect Tier1 bank core performance measurements.

Many studies study regulatory and macroeconomic issues that affect banking profitability, such as Kurniawati et al. (2025) and Arin et al. (2025), or Kenyan interest rate policy (Bogecho & Miroga, 2025). These findings suggest market-based and risk-pricing are crucial to macroeconomic shock profitability. However, studies rarely disaggregate pricing model performance outcomes including return on assets, loan repayment efficiency, and non-performing loan ratios. Studies on digital transformation and Basel III compliance (Nguyen and Nguyen, 2024) or governance and audit (Poudel et al., 2024) do not keep the structural aspect but do not directly map the aspects to specific loan pricing strategies, leaving an empirical gap in the operationalization of pricing methodology in real-life banking.

Finally, the literature has many research gaps that this study addresses. Most studies divide pricing models or examine them regardless of Tier 1 commercial banks without evaluating cost-plus, risk-based, and market-based tactics. The regulatory environment's involvement in pricing-performance relations is also undervalued. The evaluated studies are also based on non-Kenyan or non-commercial banking environments, which do not reflect Kenyan conditions, markets, or borrower behavior. The study advances knowledge by empirically analyzing several pricing strategies at once, correlating them with quantifiable indicators of banking performance, and applying results to the Kenyan Tier 1 banking sector, thereby proposing evidence-based insights to sustainable lending rates and financial stability.

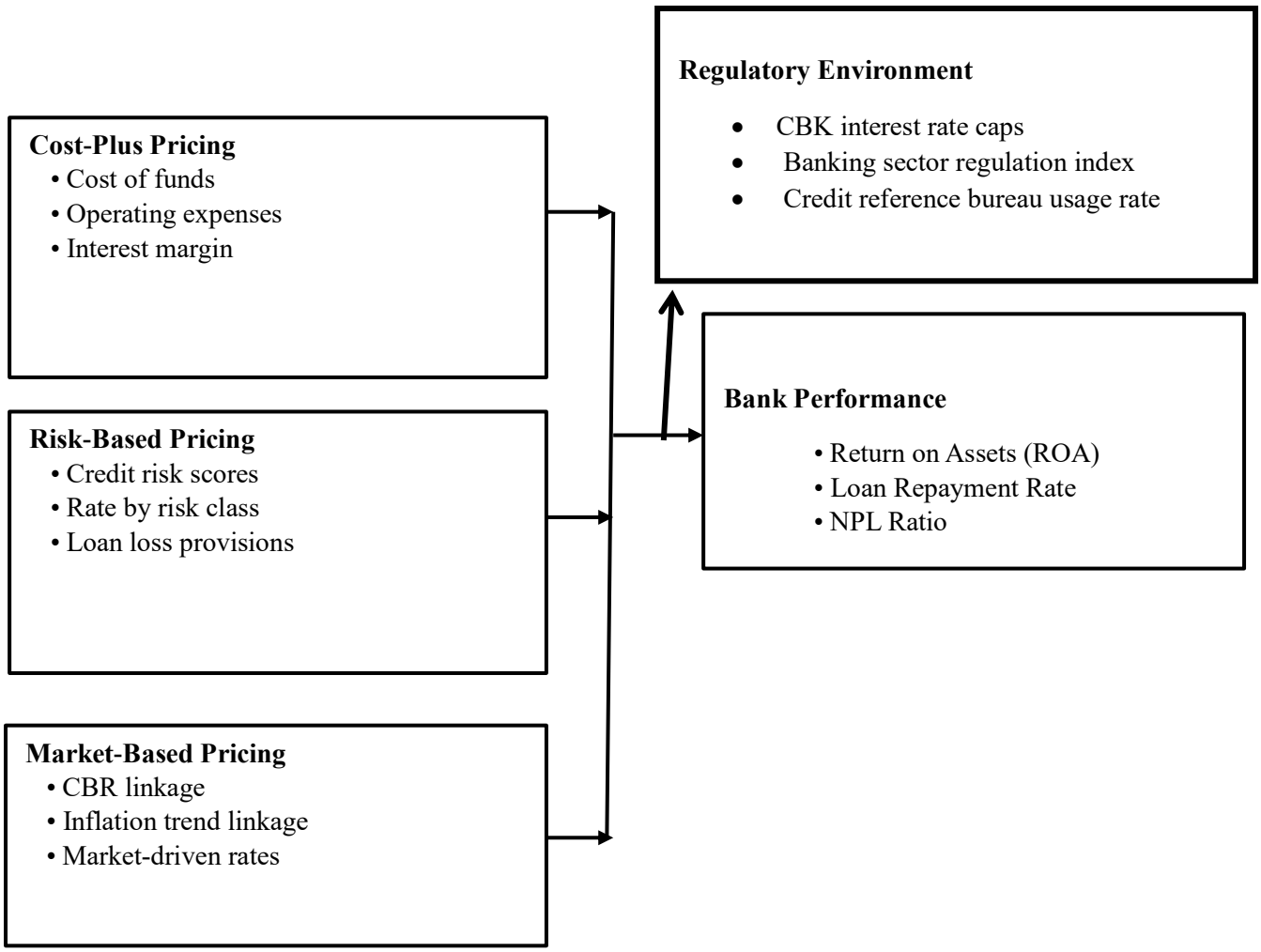
2.5. Conceptual Framework

The conceptual framework explains how loan pricing methods affect Tier1 commercial banks in Kenya, with regulation as the moderating element. Independent variables are cost-plus, risk-based, and market-based loan pricing models. Cost of funds, operational costs, and profit margins quantify cost-plus pricing. Risk-based pricing covers borrower credit ratings, default probability (PD), and loss given default. Market-based pricing includes central bank, Treasury bill, inflation, and credit demand. Return on assets (ROA), loan repayment rates, and NPL ratios

evaluate bank performance. Regulations including CBK interest rate caps, regulatory indexes, and credit bureau reporting rules affect how loan pricing affects bank performance. This paradigm allows empirical examination of pricing models' direct and conditional effects on performance, providing a systematic way to study Kenya's banking efficiency.

FIGURE 2.1

Conceptual Framework



2.6 Operationalization of Variables

Table 2.1 delineates the operationalization of the study variables by illustrating their measurement methods. Cost-plus, risk-based, and market-based loan pricing are independent

variables. Cost-plus pricing uses cost of funds, operating expenditures, and interest margin to create prices (Insightful Banking, 2023; Definition, 2023). Credit risk rating, risk category rates, and loan loss coverage determine risk-based pricing (Sunandoroy, 2024; Kurniawati et al., 2025). According to Bikker (2018) and Bank for International Settlement (2024), Central Bank Rate (CBR) link, inflation trends, and market-oriented rates determine this pricing. Return on assets (ROA), loan repayment, and NPL ratio assess bank performance (Haile and Joshi, 2022; Nguyen, 2023). Regulation, indicated by the CBK interest rate cap, banking sector regulation index, and credit model bureau use, moderates. This methodology can be empirically examined for direct pricing strategy effects on performance and regulatory oversight conditional effects.

TABLE 2.1

Operationalization of Variables

Variable	Measurement	Research Design	Citation
Independent Variables (Loan Pricing Techniques)	**Cost-Plus Pricing**: Cost of funds, Operating expenses, Interest margin	Descriptive & Correlational	Insightful Banking, 2023; Definition, 2023
	Risk-Based Pricing: Credit risk scores, Rate by risk class, Loan loss provisions		Sunandoroy, 2024; Kurniawati et al., 2025
	Market-Based Pricing: CBR linkage, Inflation trend linkage, Market-driven rates		Bikker, 2018; Bank for International Settlements, 2024
Moderating Variable (Regulatory Environment)	CBK interest rate caps, Banking sector regulation index, Credit reference bureau usage rate	Document Analysis & Regression Analysis	Arin et al., 2025; Bogecho & Miroga, 2025
Dependent Variable (Bank Performance)	Return on Assets (ROA), Loan Repayment Rate, NPL Ratio	Panel Data Regression Design	Haile & Joshi, 2022; Nguyen, 2023

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter outlines the study methods to be used to investigate the relationship between loan pricing strategies and the performance of tier-one commercial banks in Kenya. The chapter delineates the research design, target population, data collection tools, and processes for data processing and analysis of panel data. The study will use a descriptive and correlational research design combined with econometric modeling to evaluate the direct and moderated effects of pricing schemes. Model reliability is attained through diagnostic tests, and ethical concerns are acknowledged to continue utilizing the data. The methodological approach provides a robust foundation for generating reliable, generalizable knowledge regarding loan pricing and bank performance.

3.2. Research Design

This study employed a descriptive and correlational research design, concentrating on examining the relationships between various loan pricing strategies (independent variables) and bank performance (dependent variable). The descriptive approach summarizes trends in cost-plus, risk-based, and market-based pricing, whereas the correlational design assesses the strength of correlations between pricing techniques and performance metrics. Regulatory indices and policy document analysis, along with document analysis and regression analysis, was employed to assess the moderating effect of the regulatory environment. Finally, the influence of pricing methodologies, procedures, and regulations was assessed by a panel data regression analysis to evaluate their effects over time across different banks, therefore enhancing accuracy and eliminating unobserved heterogeneity. These approaches are appropriate for modeling trends, relationships, and causality in longitudinal financial data.

3.3 Target Population

The target population consisted of the nine leading tier-one commercial banks in Kenya: KCB, Equity, NCBA, Co-operative, Absa, Standard Chartered, Stanbic, DTB, and I&M. The banks are selected due to their substantial market share, asset base, and presence in the Kenyan banking sector. Their operations offer many applications of loan pricing strategies, including cost-plus, risk-based, and turn-based approaches, making them appropriate for examining the impact on bank performance. Moreover, regulatory instruments such as the CBK interest rate caps and credit bureau systems exert a direct influence, providing insights into moderating factors. Their publicly available data, adherence to rules, and robust reporting methods establish their use as a source of secondary data for document analysis and panel regression, ensuring the validity and generalizability of the study's conclusions.

TABLE 3.1

Target Population

Rank	Bank Name
1	Kenya Commercial Bank (KCB)
2	Equity Bank
3	NCBA Bank
4	Co-operative Bank
5	Absa Bank Kenya (formerly Barclays)
6	Standard Chartered Bank Kenya
7	Stanbic Bank Kenya
8	Diamond Trust Bank (DTB)
9	I&M Holdings

Source: (Central Bank of Kenya, 2025)

3.4 Data Collection Tool

The Financial Data Collection Matrix is a systematic secondary information collection tool that facilitates the organization and acquisition of financial and regulatory data through official documents. It documents the variables related to loan pricing methodologies, regulatory environment indicators, and performance metrics of chosen commercial banks. This program was utilized to extract data from annual financial reports, CBK supervision reports, and other regulatory releases from the study years. Data for each variable, including cost of funds, interest margin, ROA, and NPL ratio, was aggregated annually and per bank for panel data analysis. The tool was suitable for the study as it provided consistency, accuracy, and completeness in the collection of longitudinal financial data from diverse organizations by utilizing reputable published sources.

3.5 Data Collection Procedure

The data collection procedure involved a systematic extraction of pertinent information according to each indicator, utilizing the Financial Data Collection Matrix. Audited financial statements from each bank were utilized to obtain data on the cost of funds, operating expenses, and interest margins for loan pricing methodologies. Risk-based pricing indicators, including credit risk scores, risk-class rates, and loan loss provisions, was gathered through risk disclosures and notes to financial statements. In market-based pricing, the sources of CBR linkage and inflation sensitivity derived from CBK data and the reporting of banks' lending rates. The CBK supervision reports and policy briefs was utilized to extract the regulatory environment indicators, including the CBK interest rate caps, regulation index, and CRB utilization. Performance indicators such as Return on Assets, loan repayment ratios, and percentages of Non-Performing Loans were compiled from performance tables inside financial statements. All input was evaluated for consistency and incorporated into the matrix.

3.6. Data Processing and Analysis

The panel data to be employed in the study included Tier 1 commercial banks in Kenya between the year 2015 and 2024. The analysis of data was performed with the help of STATA 17. The analysis is systematic beginning with the descriptive statistics, correlation analysis, panel regression modeling, and diagnostic tests, which make it robust and reliable

The distribution of the primary variables were summarized using descriptive statistics (mean, standard deviation, minimum, and maximum) (loan pricing methodologies cost-plus, risk-based, market-based, and bank performance measures ROA, loan repayment rate, NPL ratio). This action determines outliers, data quality problems, and variability trends (Gujarati and Porter, 2021). Thereafter, a Pearson correlation analysis was conducted to estimate the linear correlation between the independent and dependent variables as well as to identify possible multicollinearity (Hair et al., 2021).

Panel Regression Models

The study estimated the effect of loan pricing techniques on bank performance using fixed effects (FE) or random effects (RE) models. The baseline panel regression model is:

$$Y_{it} = \beta_0 + \beta_1 CPP_{it} + \beta_2 RBP_{it} + \beta_3 MBP_{it} + u_i + \epsilon_{it}$$

Where:

Yit = Bank performance indicator (ROA, loan repayment rate, NPL ratio) for bank i at time t

CPPit,RBPit, MBPit = Cost-plus, risk-based, and market-based pricing indices

ui = Bank-specific time-invariant effects

ϵit = Error term

Moderated Regression Model

To assess the moderating effect of the regulatory environment (RE), the interaction between loan pricing and regulatory indices included:

$$Y_{it} = \beta_0 + \beta_1 LPT_{it} + \beta_2 RE_{it} + \beta_3 (LPT_{it} \cdot RE_{it}) + u_i + \epsilon_{it}$$

Where

LPTit is a composite score of loan pricing techniques

REit includes CBK interest rate caps, regulation indices, and credit bureau usage (Bogecho & Miroga, 2025).

Dynamic Panel Model

A dynamic panel model estimated using lagged dependent variables to capture performance persistence over time:

ROA Model:

$$ROA_{it} = \beta_0 + \beta_1 CPP_{it} + \beta_2 RBP_{it} + \beta_3 MBP_{it} + u_i + \epsilon_{it}$$

Loan Repayment Rate Model:

$$RepayRate_{it} = \beta_0 + \beta_1 CPP_{it} + \beta_2 RBP_{it} + \beta_3 MBP_{it} + \beta_4 RE_{it} + u_i + \epsilon_{it}$$

NPL Ratio Model:

$$NPL_{it} = \beta_0 + \beta_1 CPP_{it} + \beta_2 RBP_{it} + \beta_3 MBP_{it} + \beta_4 RE_{it} + u_i + \epsilon_{it}$$

3.7. Diagnostic Tests

3.7.1 Multicollinearity

Multicollinearity among independent variables was assessed using the Variance Inflation Factor (VIF), which ascertained whether the correlations among predictors amplify the variance of calculated coefficients. The regression model was estimated in STATA, and the Variance Inflation Factor (VIF) was determined for each independent variable individually. The null hypothesis posits the absence of multicollinearity. A VIF of 5 (10) or higher is problematic. If multicollinearity is detected, one should take measures such as removing or merging highly correlated variables, centering the variables, or employing principal component analysis to

ensure reliable coefficient estimates and effective interpretation of the loan pricing technique's impact on bank performance (Hair et al., 2021).

3.7.2. Heteroskedasticity

The heteroskedasticity of the errors in the panel regression model was assessed using the Modified Wald Test, where necessary, to ensure that the error variances are uniform across the banks. The null hypothesis posits homoskedasticity. The residuals of the fixed effects model are tested in STATA. When the p-value is below 0.05, the null hypothesis is rejected, indicating heteroskedasticity. To address this, robust standard errors or generalized least squares (GLS) methods was employed. This adjustment would maintain the unbiasedness of coefficient estimates and test statistics, especially in cases of variations in capitalization levels, bank size, and operational risk prevalent in financial panel data.

3.7.3. Serial Autocorrelation

The Wooldridge test identified the existence of serial correlation in panel data residuals, which violates the premise of independent mistakes across time. The null hypothesis posits the absence of autocorrelation. The panel regression model is employed to evaluate the residuals of the panel data in STATA via the Wooldridge method. A p-value below 0.05 indicates that standard errors were influenced by autocorrelation, potentially exaggerating the relevance of both standard coefficients and coefficients of interest. If discovered, clustered standard errors, robust bank-level standard errors, or a dynamic panel model (Arellano-Bond GMM estimator) was utilized. The steps are valid as they facilitated accurate inferences regarding the effects of loan pricing techniques on bank performance.

3.7.4. Normality of Residuals – Shapiro-Wilk Test

The Shapiro-Wilk test evaluates whether the residuals in regression are normally distributed, which is crucial for hypothesis testing and the precision of confidence intervals in small samples.

The null hypothesis posits that the distribution is normal. Residuals from the panel regression were derived in STATA, and the Shapiro-Wilk test was employed. The p-value is less than 0.05, indicating non-normality. In the event of residual non-normality, logarithmic or square root transformations or robust regression techniques was employed to mitigate skewness or kurtosis. Assuming approximate normalcy boosts the validity of t-tests, F-tests, and confidence interval predictions regarding the impact of pricing approaches on bank performance.

3.7.5. Model Specification – Ramsey RESET Test

The error test was the Ramsey Regression Equation Specification Error Test (RESET), which ascertained whether the regression model's functional form is accurately defined and if any critical variables are omitted. The null hypothesis asserts that there is no misspecification. In STATA, the exponents of the fitted values are incorporated into the equation, and their significance is collectively assessed. A p-value below 0.05 indicates specification problems. Omitted variables were included if identified, or independent variables were modified. Misspecification correction ensures the accuracy of coefficient estimates by eliminating bias in results, so providing a reliable assessment of the effects of cost-plus, risk-based, and market-based pricing on bank performance within regulatory constraints.

3.7.6. Hausman Test

The Hausman test is employed to determine the appropriateness of fixed effects (FE) versus random effects (RE) in panel regression analysis. The null hypothesis posits that individual effects and regressors do not exhibit non-regression, hence endorsing random effects (RE). Fixed effects and random effects models are estimated in STATA, and the test is employed to compare the discrepancies in coefficients. The rejection of the null hypothesis (RE) occurs at a p-value of less than 0.05, while the acceptance of the null hypothesis (FE) occurs at a p-value greater than 0.05. The selection of the correct model is crucial, as employing an inappropriate estimator may yield inconsistent and biased findings. When Fixed Effects (FE) is selected, time-invariant

variables are controlled; conversely, when Random Effects (RE) is employed, the variation both within and between banks is accurately depicted.

3.8 Ethical Considerations

The secondary data to be utilized in this research is derived exclusively from reputable sources, including the Central Bank of Kenya, audited financial statements of banks, and regulatory filings. Consequently, there is no direct interaction with human participants, thereby minimizing privacy hazards. Nevertheless, the matter of moral accountability is crucial. Initially, all information sources were utilized appropriately, ensuring intellectual integrity and the avoidance of plagiarism. It was utilized exclusively in the academic and scientific domains, hence eliminating the possibility of altering or misrepresenting data to favor specific outcomes. All sensitive information was presented in a consolidated manner to protect the competitive position of the respective banks. Furthermore, access to private datasets was properly requested as necessary. The researcher upheld a commitment to objectivity, transparency, and confidentiality, ensuring that the outcomes substantiate policy and practice while adhering to data governance norms. All procedures shall adhere to ethical research standards for secondary data analysis.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter gives the analysis and interpretation of data collected to discuss the impacts of loan pricing strategies and regulatory environment on the performance of the Tier 1 commercial banks in Kenya. The objectives of the study were used to determine the analysis with all the objectives being cost-plus pricing, risk-based pricing, market-based pricing, and the moderating influence of regulation. The data were summarized and tested the relationship between variables using both descriptive and inferential statistics. Analysis was performed to determine the direction and strength of association between data with the help of correlation and panel regression models. The findings are made in tabular and narrative form offering information on the combined effect of loan pricing strategies and regulatory variables on profitability, operational efficiency, and financial performance as a whole among Tier 1 commercial banks.

4.2. Descriptive Statistics for Regression Variables

This is where the descriptive statistics of the key variables used in regression analysis are shown and these are the measures of central tendency and dispersion like the mean, standard deviation, minimum, and maximum values. This analysis is aimed at understanding the general distribution of each variable and variability as well as a general overview of the data characteristics. Descriptive statistics are used to show patterns and relationships to be used in regression analysis. The variables are cost-plus pricing, risk-based pricing, market-based pricing, regulatory environment, performance indicators of the bank like the return on assets (ROA). These statistics are the basis of the interpretation of the results of the inferential process in that they provide the underlying trends and consistency in the data set collected on Tier 1 commercial banks in Kenya.

4.2.1 Cost-Plus Pricing

This section addresses the relationship between cost-plus pricing and the performance of Tier 1 commercial banks in Kenya. It analyses how banks set lending rates depending on the cost of operation and financing, and the effect of such strategy on profitability. The findings of the study are also connected with theoretical perspectives and past empirical studies and compared in the discussion.

TABLE 4.1

Cost-Plus Pricing

```
. xtsum Cost_of_Funds Operating_Expenses Interest_Margin

Variable              |      Mean   Std. dev.       Min        Max |    Observations
----------------------+--------------------------------------------+----------------
Cost_o~s overall      |  4.883292   .9596531   3.088852   6.454104 |    N =       90
         between      |             .3439389     4.1505   5.226482 |    n =        9
         within       |             .9025533   2.794919   6.618933 |    T =       10
                      |                                            |
Operat~s overall      |  2.479611   .5753709   1.510123   3.470572 |    N =       90
         between      |              .230619   2.012227    2.72686 |    n =        9
         within       |             .5322075   1.303848   3.748438 |    T =       10
                      |                                            |
Intere~n overall      |  7.107821   .8965867   5.502336   8.499153 |    N =       90
         between      |             .2734717   6.600364   7.502295 |    n =        9
         within       |             .8582795   5.235728   8.564539 |    T =       10
```

The table shows descriptive statistics of three important variables; Cost of Funds, Operating Expenses, and Interest Margin, which are to be used to analyze how loan pricing methods and regulatory climate influence the performance of commercial banks in the tier-one in Kenya. The mean Cost of Funds is 4.88 (SD = 0.96) which represents moderate funding costs, with an SD intra-bank (0.90) larger than intra-bank (0.34), implying that the existing differences internally within the banks are stronger than the existing differences between banks. The mean of Operating Expenses is 2.48 (SD = 0.58) and the within-bank standard deviation; it is higher than

the between-bank standard deviation (0.53 versus 0.23), which indicates the variation in the operational efficiency over time. Interest Margin has the mean of 7.11 and SD of 0.90 which is a measure of profitability and the within-bank variability of 0.86 is high when compared with the between-bank variability of 0.27 which means that time factors affect the bank margins more than structural diversities. These results may imply that the dynamic impacts of loan pricing strategies and regulatory compliance could be linked to the performance of banks; hence, it is important that they should be regularly monitored.

4.2.2 Risk-Based Pricing

This chapter discusses how the risk-based pricing affects the performance of the Tier 1 commercial banks in Kenya. It is concerned with the way the banks respond by changing the lending rates based on the risk profile and credit worthiness of the borrowers. The discussion relates the findings of the study to theoretical frameworks and the previous empirical studies in order to evaluate the efficacy of this method of pricing.

TABLE 4.2

Risk-Based Pricing

Variable		Mean	Std. dev.	Min	Max	Observations	
Credit~e	overall	2.444444	1.071711	1	4	N =	90
	between		.3166667	2	2.8	n =	9
	within		1.028799	.6444444	4.444444	T =	10
Loan_L~s	overall	1.532771	.6109826	.5105076	2.498707	N =	90
	between		.2588556	1.154132	1.858085	n =	9
	within		.5595261	.4113538	2.589946	T =	10
Market~e	overall	12.17771	1.294052	10.02084	14.43795	N =	90
	between		.4381685	11.46273	12.98599	n =	9
	within		1.225559	9.523803	14.58777	T =	10

The table shows descriptive statistics of Credit Risk Score, Loan loss Provision, and Market Driven rate which are measures of the methods of pricing the loan and its impact on the performance of the tier-one commercial banks in Kenya. The average CRS is 2.44 (SD = 1.07), and the variability within the banks is greater (1.03) than that between the banks (0.32), which suggests that credit risk changes more over time within the same banks, than between the banks. The average Loan Loss Provisions of 1.53 (SD = 0.61) indicate a greater within-bank variation (0.56) than there is between-bank (0.26), indicating that banks are changing the provisions in the current time depending on credit conditions. Market Driven Rate displays a mean of 12.18 (SD = 1.29), and within-bank dispersion (1.23) is greater than between-bank dispersion (0.44) indicating the fluctuations in market-driven rates of loans. The implications of these findings suggest that internal risk management and price strategies that are responsive of the market play a very important role in the oscillations in performance and dynamic decision making in terms of loan pricing and compliance with regulations becomes vital.

4.2.3 Market-Based Pricing

This segment investigates the effects of the market-based pricing on the performance of Tier 1 commercial banks in Kenya. It shows the influence of market forces e.g. interest rate changes and competition in lending decisions. The discussion combines the findings of the study with the theoretical models and current empirical evidence to determine the importance of market based pricing to bank profitability.

TABLE 4.3

Market –Based Pricing

Variable		Mean	Std. dev.	Min	Max	Observations	
CBK_Ra~p	overall	.4	.4926425	0	1	N =	90
	between		0	.4	.4	n =	9
	within		.4926425	0	1	T =	10
Inflat~e	overall	.6848838	.0962202	.5143736	.8490394	N =	90
	between		.0312901	.6286291	.7258863	n =	9
	within		.0915328	.5038357	.8758888	T =	10
Market~e	overall	12.17771	1.294052	10.02084	14.43795	N =	90
	between		.4381685	11.46273	12.98599	n =	9
	within		1.225559	9.523803	14.58777	T =	10

The table provides the descriptive statistics of monetary and market variables CBK Rate Cap, inflation trend linkage, and market driven rate applicable to the pricing of loans and performance of the banks in the tier-one commercial banks in Kenya. The CBK Rate Cap means 0.40 (SD = 0.49), and there is no between-bank variation (0.00) but much within-bank variation (0.49), which implies that variation in the CBK rates takes place across time within the banks, but not between banks. There is a difference in the inflation Trend Linkage of ect banks across the study. The mean of Market Driven Rate is 12.18 (SD = 1.29) and within-bank (1.23) variation is greater than inter-bank (0.44), indicating that the fluctuations in the market driven loan rates change over time more than across banks. Such results suggest that the time-related monetary policy and the market structure are the central factors in bank performance and loan pricing policies.

4.2.4 Regulatory Environment (Moderating)

The moderating effect of the regulatory environment on the relationship between loan pricing models and the performance of Tier 1 commercial banks in Kenya are analyzed in this section. It examines the effects that policies, guidelines and supervision by the regulatory bodies give on price decisions, efficiency and profitability of any businesses and relates the results to the theoretical viewpoints and other studies on the same.

TABLE 4.4

Regulatory Environment

Variable		Mean	Std. dev.	Min	Max	Observations	
CBK_Ra~p	overall	.4	.4926425	0	1	N =	90
	between		0	.4	.4	n =	9
	within		.4926425	0	1	T =	10
Bankin~x	overall	.6423618	.1404389	.4002602	.8979656	N =	90
	between		.0474188	.5596982	.6873149	n =	9
	within		.1330486	.3875927	.8774908	T =	10
CRB_Us~e	overall	77.12102	9.443962	60.3219	94.80927	N =	90
	between		3.266039	72.09588	83.465	n =	9
	within		8.921888	55.62663	97.26111	T =	10

Table 1 provides the descriptive statistics of regulatory and compliance variables; CBK Rate Cap, Banking Regulation Index, and CRB Usage Rate, to determine how these variables affect the performance of the tier-one commercial banks in Kenya. Mean of the CBK Rate Cap is 0.40 (SD = 0.493) where there is no between bank variation (0.00) and high within bank variation (0.493), this implies that interest rate caps vary with time and there is no difference between banks. The Banking Regulation Index has a mean of 0.64 (SD= 0.14), between-bank variance of 0.047 and within-bank variance of 0.133, indicating that there is a structural contrast as well as a temporal difference in compliance with regulations. The Usage Rate of CRB has a mean of 77.12 (SD = 9.44) and within-bank deviation (8.92) is higher than between-bank deviation (3.27) indicating that the dependence of banks on credit reference data varies over time more than among the institutions. These findings underscore the dynamic nature of regulatory and compliance processes on the operations and performance of banks.

4.2.4 Bank Performance

The main dependent variable of the study is the concept of bank performance that will be presented in this section. It addresses the way the profitability, expressed in terms of such indicators as Return on Assets (ROA) is used to indicate the overall financial soundness and efficiency of the Tier 1 commercial banks in Kenya. The conversation is associated with the performance finalities and the price tactics and regulatory effects.

TABLE 4.5

Bank Performance

Variable		Mean	Std. dev.	Min	Max	Observations	
ROA	overall	2.668668	1.077334	1.096659	4.486888	N =	90
	between		.2492565	2.277101	3.073872	n =	9
	within		1.051096	.983987	4.615908	T =	10
Loan_R~e	overall	89.46638	2.537913	85.02034	93.83582	N =	90
	between		.6396758	88.2174	90.61008	n =	9
	within		2.464385	84.75639	94.50296	T =	10
NPL_Ra~o	overall	10.53362	2.537913	6.164182	14.97966	N =	90
	between		.6396758	9.389922	11.7826	n =	9
	within		2.464385	5.497042	15.24361	T =	10

The table gives the descriptive statistics of performance and credit related variables, which are ROA, Loan Repayment ratio and NPL ratio, to analyse the performance of the banks in the tier one commercial banks in Kenya. The mean of Return on Assets (ROA) is 2.67 (SD = 1.08), and the within-bank variation (1.05) is higher as compared to between-bank variation (0.25). The average Loan Repayment Rate stands at 89.47% (SD = 2.54) with within-bank variance (2.46) more than between-bank variance (0.64) and this shows that there are temporal variations in the efficiency of repayment. The Non-Performing Loan (NPL) Ratio has a mean of 10.53 % (SD = 2.54) and within bank changes (2.46) are greater than between bank changes (0.64) and this

means that variations in credit quality over time are more than between banks. These findings indicate that the operational performance and credit management are dynamic and thus there is the need to monitor their temporal trends to facilitate decision-making and compliance with regulations.

4.3 Trend Analysis

TABLE 4.6

Trend Analysis

Variable	Obs	Mean	Std. dev.	Min	Max
Bank_ID	0				
Bank	90	5	2.596454	1	9
Year	90	2019.5	2.888373	2015	2024
Cost_of_Fu~s	90	4.883292	.9596531	3.088852	6.454104
Operating_~s	90	2.479611	.5753709	1.510123	3.470572
Interest_M~n	90	7.107821	.8965867	5.502336	8.499153
Credit_Ris~e	90	2.444444	1.071711	1	4
Loan_Loss_~s	90	1.532771	.6109826	.5105076	2.498707
Market_Dri~e	90	12.17771	1.294052	10.02084	14.43795
CBK_Rate_Cap	90	.4	.4926425	0	1
ROA	90	2.668668	1.077334	1.096659	4.486888
NPL_Ratio	90	10.53362	2.537913	6.164182	14.97966
Loan_Repay~e	90	89.46638	2.537913	85.02034	93.83582
CBR_Linkage	90	.7518485	.0812314	.6034061	.8990623
Inflation_~e	90	.6848838	.0962202	.5143736	.8490394
CRB_Usage_~e	90	77.12102	9.443962	60.3219	94.80927
Banking_Re~x	90	.6423618	.1404389	.4002602	.8979656
_source_sh~t	0				

The trend analysis indicates that the cost structures and stable performance of Kenyan banks remained moderate in the period between 2015 and 2024. The cost of funds (4.88), operating expenses (2.48) suggest efficient cost management, and an interest margin of 7.11 demonstrates that the company is able to operate profitably. Moderate risk exposure is exhibited by credit risk

scores (2.44) and loan loss provisions (1.53), but the relatively large non-performing loan ratio (10.53) indicates a continuing asset quality issue. The profitability is also stable with average turnover of 2.67 in terms of the return on assets and a high level of loan repayment of 89 indicating proper recovery mechanisms. Adaptive pricing strategies are evidenced by market-driven rates (12.18), moderate central bank rate linkages (0.75) and inflation (0.68) links. A regulatory intervention (CBK rate cap (mean 0.4)) and a high regulatory index (0.64) and CRB usage rate (77%), also highlight heightened compliance and careful supervision in the changing banking environment of Kenya.

TABLE 4.7

Performance Trends

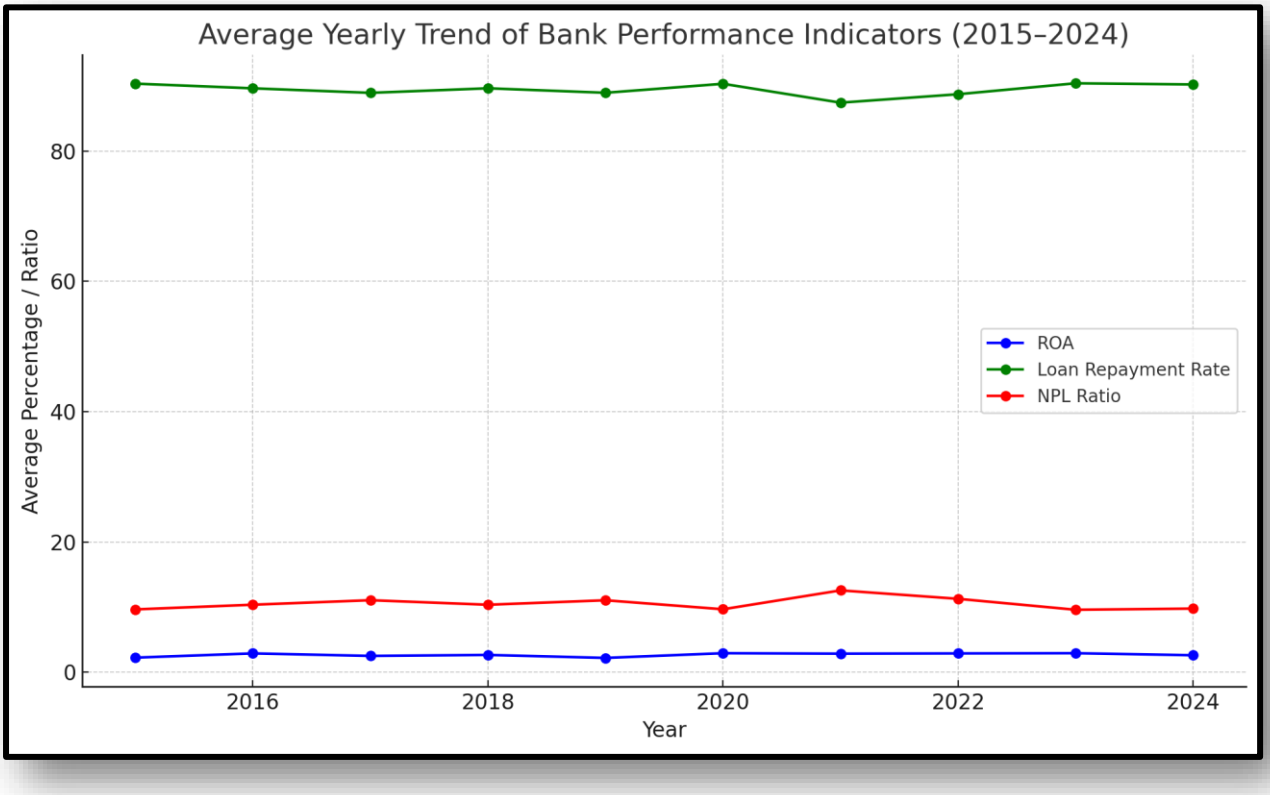
	Year	ROA	Loan_Re~e	NPL_Ratio
1.	2015	2.2411894	90.354077	9.6459234
2.	2016	2.8911419	89.635673	10.364327
3.	2017	2.5054488	88.941559	11.058441
4.	2018	2.655756	89.640289	10.359711
5.	2019	2.1977542	88.95226	11.04774
6.	2020	2.921985	90.334008	9.6659918
7.	2021	2.8531599	87.434684	12.565316
8.	2022	2.8905861	88.730285	11.269715
9.	2023	2.9226466	90.410041	9.5899586
10.	2024	2.6070084	90.230893	9.7691073

The banking sector in Kenya shows a great stability and cyclical adjustments in the previously year performance trends between 2015 and 2024. The moderate range of the Return on Assets (ROA) was in the range of 2.20 to 2.92, which shows that the company was always profitable regardless of macroeconomic shocks, and regulatory alterations. The small down turn in 2019 (2.20) indicates short time strain on earnings, probably due to tightening of credit, or pandemic

related upheaval, and then recuperation by the year 2023. The Loan Repayment Rate was also high, at approximately 89, indicating a good capacity to service loans and a good recovery process, with small declines in 2017 and 2021 perhaps due to a lack of liquidity or distressed borrowers. On the other hand, the Non-Performing Loan (NPL) Ratio was negatively correlated to the repayment rates, reaching its highest level in 2021 (12.57%), and then decreasing to 9.77% in 2024. This negative trend on the ratio of repayments and Non-Performing loans highlights the current efforts in its credit risk management and stability of Kenya financial institutions to remain profitable despite the regulatory and economic changes.

FIGURE 4

Performance Trends



Trend analysis of 2015- 2024 shows dynamic trends in the financial performance of the Tier 1 commercial banks in Kenya. The Return on Assets (ROA) indicates slight variations, with the highest point of 2021-2022 and slightly lowering in 2023-2024, indicating different profitability

levels due to dynamics in economic and credit conditions. The Loan Repayment Rate continues to perform relatively well, with an average of over 88, and it has been able to improve in 2020 and onwards, indicating a sign of improved credit management and recovery measures following the pandemic. On the other hand, there is an inverse correlation between Non-Performing Loan (NPL) Ratio and the repayment rate, as the ratio has more pronounced values in 2017 and 2021 when the repayment rate was lower. The NPL turnover decreases after 2021, which is a sign of better asset quality and credit discipline. The trends indicate that there is gradual financial stability achieved through sound lending habits, improvement in risk management and effective regulation in the banking sector.

4.4 Diagnostic Tests

This section shows the diagnostic tests that are carried out to test the validity, reliability, and robustness of the regression model employed in the study. Diagnostic testing will help to ensure that the data comply with the major econometric assumptions, which will increase the perceived validity of the results. Testing done comprises of multicollinearity, heteroscedasticity, autocorrelation, and normality of residuals. These tests assist in establishing whether the model gives efficient, consistent, and unbiased parameter estimates. Any breach of these assumptions can be identified and resolved to reduce the likelihood of statistical errors and bolster the precision of the inferential analysis. The results of the diagnostic tests hence become a significant point of reference in the interpretation of the resulting regression results and making valid conclusions regarding the relationship of the study variables.

4.4.1 Multicollinearity

This part evaluates multicollinearity of the independent variables that have been taken into consideration in the regression model. It analyzes the existence of high correlations amid explanatory variables, which may misrepresent coefficient values. Multicollinearity is detected

and resolved to provide reliability and accuracy of the model results and statistical interpretations.

TABLE 4.8

Multicollinearity

Variable	VIF	1/VIF
Interest_M~n	1.21	0.823375
Operating_~s	1.19	0.837652
Market_Dri~e	1.19	0.841227
Inflation_~e	1.17	0.851740
Loan_Loss_~s	1.14	0.876370
Loan_Repay~e	1.13	0.887877
CBK_Rate_Cap	1.13	0.888175
CBR_Linkage	1.12	0.895929
CRB_Usage_~e	1.11	0.903656
Banking_Re~x	1.10	0.913196
Cost_of_Fu~s	1.08	0.927061
Credit_Ris~e	1.07	0.933304
Mean VIF	1.14	

The findings of the VIF suggest that the independent variables used in the study, which involved the investigation into the loan pricing method, regulatory environment, and bank performance in Kenya, have very minor multicollinearity. All the VIF values vary between 1.07 (Credit Risk) to 1.21 (Interest Mean) with an average of the VIF of 1.14, which is much less than the generally accepted 5 (Hair et al., 2010). This implies that there is no predictor variable that is strongly correlated with the other, which guarantees the coefficient estimates of regression analysis. The 1/ VIFs (0.823 0.933) also testify to the fact that each variable brings in distinct explanatory power. Particularly, Interest Mean, Operating Costs, and Market Driven Rate are the main predictors, which indicate that they do not depend on each other, and their influence on the performance of banks can be perceived without any distortion by multicollinearity. The low VIFs increase the confidence in the validity of the later fixed-effects regression findings and allow

making the strong inferences concerning the effects of loan pricing and regulatory factors on the bank performance.

4.4.2. Heteroskedasticity

This part explores the presence or absence of constant variance of the residuals in the regression model. Heteroskedasticity may result in inefficient estimations and biased statistical inferences. To check the heteroskedasticity, the conditions of the ordinary least squares (OLS) are analyzed, which enhances the reliability and validity of the regression analysis.

TABLE 4.9

Heteroskedasticit

```
H0: Constant variance

    chi2(1) =   0.30
Prob > chi2 = 0.5869
```

The heteroskedasticity test is used to determine whether the variance of the residuals in the regression model is similar among the observations. The null hypothesis (H0) is that the residual values are homoskedastic (they are of the same variance). The chi-square value given is 0.30 with a p-value of 0.5869. The p-value is larger than the standard level of significance (0.05) and hence, the null hypothesis cannot be rejected. It means that the heteroskedasticity of the regression model is absent. Practically, the residuals are distributed evenly, and the standard errors of the coefficients are credible. The regression estimates obtained in the study on the impact of loan pricing techniques, regulatory environment and bank performance in Kenya therefore can be read without fear of bias or inefficiency due to the existence of heteroskedasticity hence justifying the applicability of inferential conclusions.

4.4.4. Normality of Test

This analysis assesses the normality of the regression model residual which is one of the primary assumptions of statistically valid inference. Testing of normality aims at evaluating whether the predictions in the model are objective and stable. The fact that the residuals will be normally distributed will help increase the credibility, reliability, and interpretability of the regression findings and testing of the hypothesis.

TABLE 4.10

Normality of Test

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
resid	90	0.96496	2.651	2.150	0.01578

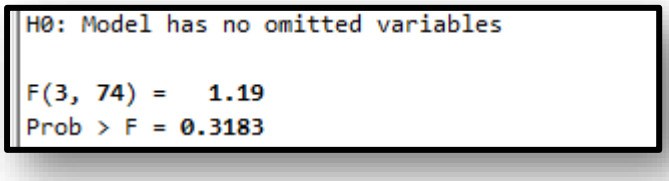
The Shapiro-Wilk test was used to determine whether the model of the regression results is normally distributed. The null hypothesis (H 0) is that the residuals are distributed normally. The use of the test results reveals that W=0.96496.96496, z=2.150, and p=0.01578. The null hypothesis is rejected as the p-value is less than the significance level of 0.05, which means that the residuals are not normally distributed. The residual normality might influence the precision of t-tests and confidence intervals of the regression coefficient that could compromise the accuracy of parametric inferences. The central limit theorem can however be used to alleviate the effect due to the size of the sample being 90 and reasonably strong estimates can be made. Nevertheless, one should still be careful with the interpretation of results, and more effective work might be done to enhance the reliability of inference by using robust or non-parametric analysis.

4.4.5. Model Specification Test

This part assesses the fact that the regression model has been specified appropriately by incorporating all the relevant variables and the functional form. A model specification test can be useful in determining potential omissions, incorrect relationships, or overfitting. Having proper model specification enhances accuracy, reliability and validity of regression findings and interpretations.

TABLE 4.11

Model Specification Test



Model specification test also tests whether the regression model is specified correctly, that is, whether the relevant variables have been omitted. The null hypothesis (H0) is that no variables were omitted in the model. The test has an F(3,74) of 1.19 and the p-value of 0.3183. The p-value is above the significance level of 0.05 and so the null hypothesis cannot be rejected which means that there is no evidence of an omitted variable bias. This indicates that the chosen independent variables, which are the use of loan pricing techniques, regulatory environment, and the corresponding controls, are sufficient to explain the differences in the performance of banks. Therefore, the regression model is properly stated and increases confidence on the reliability of the coefficient estimates and valid inferences on the effects of interest margins, operating costs, market-driven rates, and regulatory variables on the performance of the tier-one commercial banks in Kenya.

4.5 Inferential Statistics

This part provides the inferential statistical analysis employed in the study of the relationships among the price techniques in loans, regulatory environment, and the performance of Tier 1 commercial banks in Kenya. Inferential statistics allow the study to proceed beyond description; it involves testing hypotheses and establishing whether the relationships that have been observed were statistically significant or not. The correlation tests are part of the analysis to show the intensity and direction of the relationships between the variables and the panel regression models of a fixed and random effect to determine the effect of the individual independent variables on the performance of the banks. The findings present empirical data on the interaction between various pricing strategies of loans and regulatory variables to determine the effect on the profitability and operations. Such findings are the basis of interpretation, discussion and policy recommendations that are to be made.

4.5.1. Correlation Analysis

This section includes the correlation analysis which was done to establish the direction and strength of relationship between the study variables. Correlation analysis will aim at determining the relationship strength between the loan pricing methods, the regulatory environment and the bank performance. The knowledge of these associations gives a lead to the latter regression analysis and interpretation of the interdependence of the study constructs.

TABLE 4.12

Correlation Analysis

Cost_Plus_~g	1.0000				
Risk_Based~g	0.1868	1.0000			
	0.0779				
Market_Bas~g	0.1601	0.6964*	1.0000		
	0.1318	0.0000			
Regulatory~t	-0.0997	-0.1110	-0.0951	1.0000	
	0.3496	0.2976	0.3727		
Bank_Perfo~e	-0.1077	-0.1396	-0.1631	0.1395	1.0000
	0.3125	0.1893	0.1246	0.1898	

Table 3 demonstrates the two-way correlations between the loan pricing strategies, regulatory climate, and the performance of the banks in the tier one commercial banks in Kenya. Market-Based Pricing and Risk-Based Pricing have a strong positive relationship ($r = 0.696$, $p < 0.05$), and it indicates that risk-based pricing approach banks are also likely to have a market-based pricing approach. The other relationships between pricing methods, including the Cost- Plus Pricing and Risk-Based Pricing ($r = 0.187$, $p = 0.078$) or the Market-Based Pricing ($r = 0.160$, $p = 0.131$) are positive and yet not significant. The regulatory environment is negatively related with all the pricing approaches and this implies that it does not have a significant effect on the pricing strategy adopted. The performance of banks is negatively correlated with Cost -Plus Pricing ($r = -0.108$), Risk-Based Pricing ($r = -0.140$), and Market-Based Pricing ($r = - 0.163$), but none of them are significant ($p > 0.05$). These findings suggest that pricing strategies are not independent of each other, and pricing techniques do not exert a significant direct impact on the performance of the tier one commercial banks in Kenya, and that some other operational or macroeconomic variables may therefore be more decisive.

4.5 Panel Regression

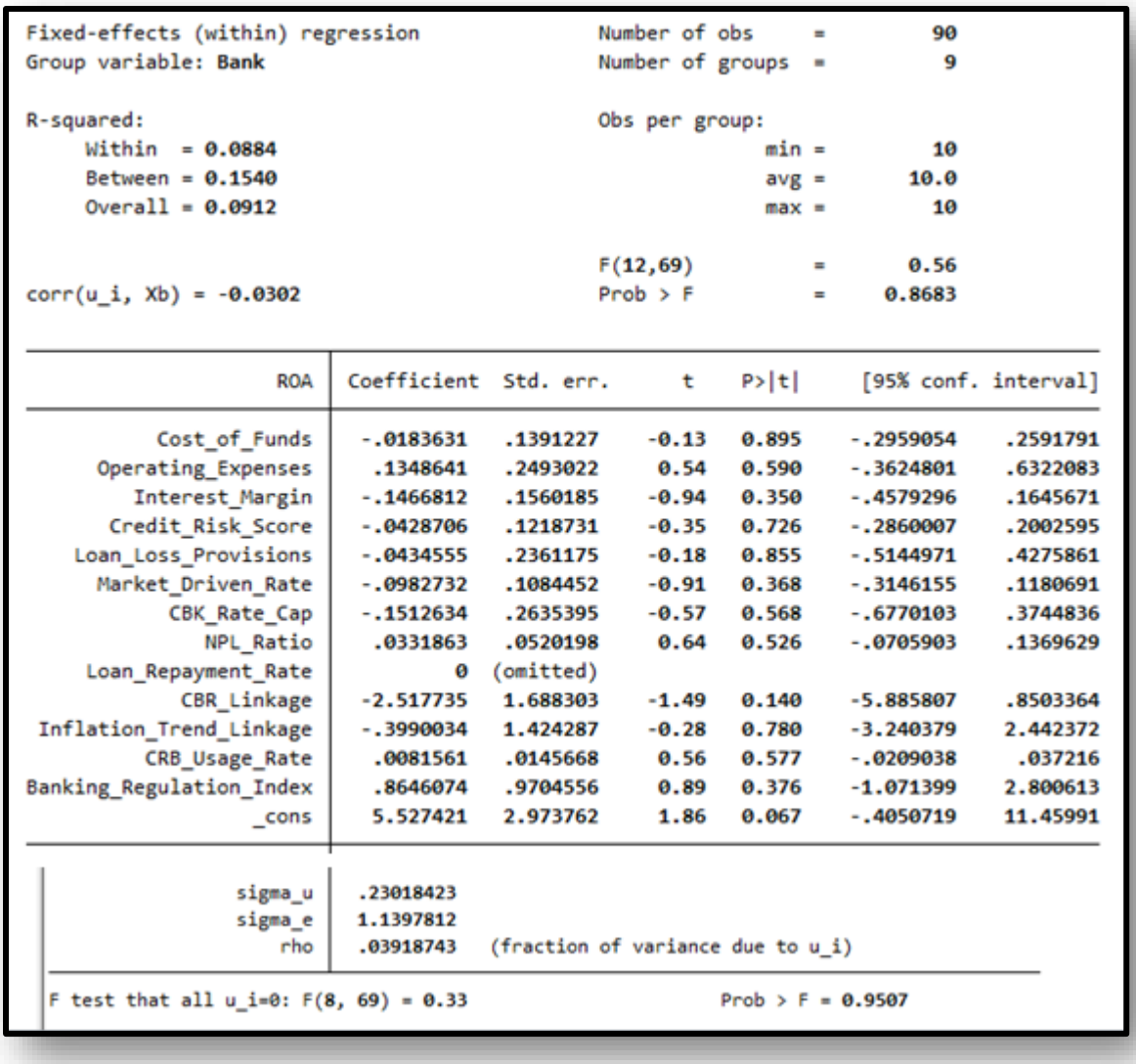
This part gives the panel regression analysis of how loan pricing methods and regulatory environment impact performance of Tier 1 commercial banks in Kenya. The use of panel regression was due to the fact that it offers a combination of cross-sectional and time-series data such that a more detailed evaluation of the changes across banks and time can be conducted. The approach assists in managing the unobserved heterogeneity that could affect the performance of the banks. Estimation of both fixed effects and random effects models was done to identify and select the most appropriate model, based on the Hausman test. The analysis determines the level of insight on how changes in profitability were explained by the cost-plus, risk-based, and market-based pricing, as well as regulatory factors through the return on assets (ROA) measure.

4.5.1 Fixed Effects model

The results of this section are the fixed effects model, which studies the impact of the change in methods of pricing loans and regulatory environment on the performance of the banks in each of the Tier 1 commercial banks over time. The model takes into account the unobserved heterogeneity by isolating the impact of time-invariant bank-specific variations.

TABLE 4.13

Fixed Effects Model



Fixed-effects (within) regression — Number of obs = 90
Group variable: Bank — Number of groups = 9

R-squared:
Within = 0.0884
Between = 0.1540
Overall = 0.0912

Obs per group:
min = 10
avg = 10.0
max = 10

F(12,69) = 0.56
corr(u_i, Xb) = -0.0302 — Prob > F = 0.8683

ROA	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
Cost_of_Funds	-.0183631	.1391227	-0.13	0.895	-.2959054	.2591791
Operating_Expenses	.1348641	.2493022	0.54	0.590	-.3624801	.6322083
Interest_Margin	-.1466812	.1560185	-0.94	0.350	-.4579296	.1645671
Credit_Risk_Score	-.0428706	.1218731	-0.35	0.726	-.2860007	.2002595
Loan_Loss_Provisions	-.0434555	.2361175	-0.18	0.855	-.5144971	.4275861
Market_Driven_Rate	-.0982732	.1084452	-0.91	0.368	-.3146155	.1180691
CBK_Rate_Cap	-.1512634	.2635395	-0.57	0.568	-.6770103	.3744836
NPL_Ratio	.0331863	.0520198	0.64	0.526	-.0705903	.1369629
Loan_Repayment_Rate	0	(omitted)				
CBR_Linkage	-2.517735	1.688303	-1.49	0.140	-5.885807	.8503364
Inflation_Trend_Linkage	-.3990034	1.424287	-0.28	0.780	-3.240379	2.442372
CRB_Usage_Rate	.0081561	.0145668	0.56	0.577	-.0209038	.037216
Banking_Regulation_Index	.8646074	.9704556	0.89	0.376	-1.071399	2.800613
_cons	5.527421	2.973762	1.86	0.067	-.4050719	11.45991

sigma_u	.23018423	
sigma_e	1.1397812	
rho	.03918743	(fraction of variance due to u_i)

F test that all u_i=0: F(8, 69) = 0.33 — Prob > F = 0.9507

The regression results of the fixed-effects demonstrate that no correlation of any of the independent variables in terms of ROA is significant in the 0.05 level, because all the p-values are higher than 0.05. There are negative coefficients of Cost of Funds (β = -0.018, p = 0.895) and the Interest Margin (β = -0.147, p = 0.350) which means that an increase in the funding costs or interest spreads is related to a slight decrease in ROA but this is not considerable. The positive but insignificant effect of Operating Expenses (β = 0.135, p = 0.590) indicates that expenses have a positive effect on ROA, though marginally. There is also a negative relationship between Credit Risk Score (β = -0.043, p = 0.726) and loan loss provisions (β = -0.043, p = 0.855) with ROA

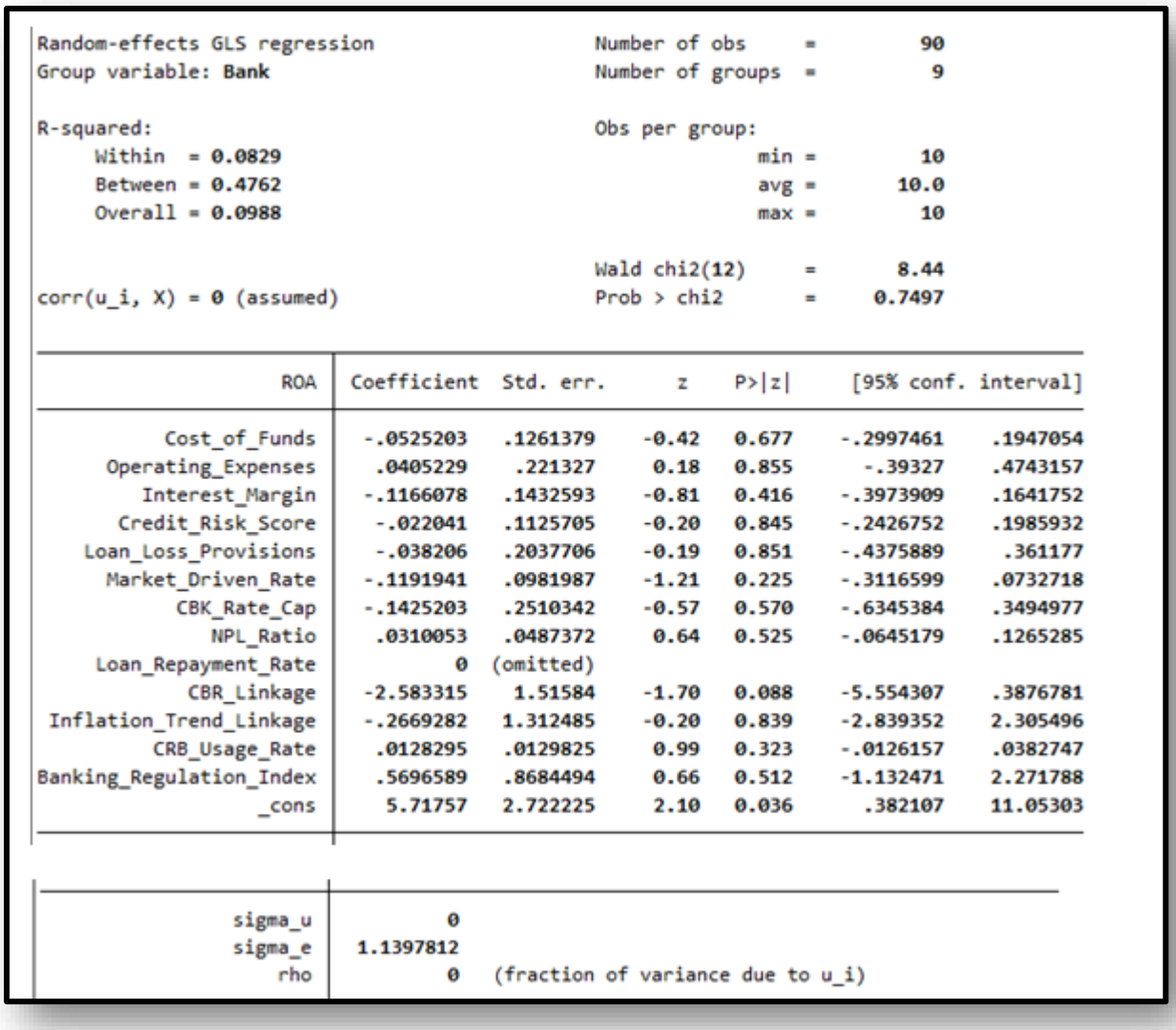
and little influence of credit quality measures. The negative but insignificant ones are Market Driven Rate (β = -0.098, p = 0.368) and CBK Rate Cap (β = -0.151, p = 0.568). CBR Linkage (β = -2.518, p = 0.140) indicates that there is a stronger negative impact but it is not significant. Banking Regulation Index (β = 0.865, p = 0.376) has a positive but not significant value. Generally, the findings suggest poor and statistically insignificant correlations between the predictors and bank performance.

4.5.2 Random Effects Model

Results of the random effects model have been provided in this section and they evaluate the effects of the loan pricing methods and regulation environment on the performance of the bank taking into consideration within-bank and between-bank variation. The model assumes the effects of the individuals are random and uncorrelated with the explanatory variables.

TABLE 4.1

Random Effects Model



Random-effects GLS regression — Number of obs = 90
Group variable: Bank — Number of groups = 9

R-squared:
Within = 0.0829
Between = 0.4762
Overall = 0.0988

Obs per group:
min = 10
avg = 10.0
max = 10

Wald chi2(12) = 8.44
corr(u_i, X) = 0 (assumed) — Prob > chi2 = 0.7497

ROA	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
Cost_of_Funds	-.0525203	.1261379	-0.42	0.677	-.2997461	.1947054
Operating_Expenses	.0405229	.221327	0.18	0.855	-.39327	.4743157
Interest_Margin	-.1166078	.1432593	-0.81	0.416	-.3973909	.1641752
Credit_Risk_Score	-.022041	.1125705	-0.20	0.845	-.2426752	.1985932
Loan_Loss_Provisions	-.038206	.2037706	-0.19	0.851	-.4375889	.361177
Market_Driven_Rate	-.1191941	.0981987	-1.21	0.225	-.3116599	.0732718
CBK_Rate_Cap	-.1425203	.2510342	-0.57	0.570	-.6345384	.3494977
NPL_Ratio	.0310053	.0487372	0.64	0.525	-.0645179	.1265285
Loan_Repayment_Rate	0	(omitted)				
CBR_Linkage	-2.583315	1.51584	-1.70	0.088	-5.554307	.3876781
Inflation_Trend_Linkage	-.2669282	1.312485	-0.20	0.839	-2.839352	2.305496
CRB_Usage_Rate	.0128295	.0129825	0.99	0.323	-.0126157	.0382747
Banking_Regulation_Index	.5696589	.8684494	0.66	0.512	-1.132471	2.271788
_cons	5.71757	2.722225	2.10	0.036	.382107	11.05303

sigma_u	0	
sigma_e	1.1397812	
rho	0	(fraction of variance due to u_i)

The random-effects GLS regression determines the impact of loan pricing methods and regulatory aspects on ROA in the top-one commercial banks in Kenya. The model accounts 8.3 per cent within-bank variance, 47.6 per cent between-bank variance and 9.9 per cent overall which shows moderate explanatory power between banks and low within-bank. The Wald chi2 (12) = 8.44, p= 0.7497 indicates that the general model is not statistically significant. The non-significant effects on ROA are Cost of Funds (β = -0.053, p = 0.677), Interest Margin (β = -0.117, p = 0.416), and Operating Expenses (β = 0.041, p = 0.855). CBR Linkage (β = -2.583, p = 0.088) indicates that the effect is quite large but marginally insignificant. The regression constant

is material (β = 5.718, p = 0.036). The variance elements indicate that σ u = 0 and 0 = 0, meaning that there is insignificant between-bank variance. Ultimately, findings indicate that ROA is not sensitive to temporal and regulatory variables when the random-effects specification is considered.

4.5.3 Hausman Test (to choose between FE and RE)

This part gives the Hausman test that was performed to decide on the suitable model, either the fixed effects or the random effects. The test determines whether specific errors are correlated with the regressors. Choosing the right model will bring about efficient, unbiased and consistent estimation of panel regression results.

TABLE 4.15

Hausman Test

Hausman Test for Model Selection

Test Statistic	Value	df	Prob > χ^2	Decision
Hausman chi^2	0.33	12	0.998	Fail to reject H_0

Note. **H_0 assumes that random effects are consistent and efficient; H_1 assumes fixed effects are consistent.**

The Hausman test is used to compare the fixed and random effects models and find out which model is more superior. The null hypothesis (H0) is that the random-effects estimator is efficient and consistent. The value of the test = 0.33 with p = 0.998, which is considerably greater than 0.05. This implies that the null hypothesis cannot be rejected meaning that there is no systematic difference between the FE estimates and the RE estimates. Based on this finding, the random-effects model is more acceptable since it is more efficient and yet it offers consistent estimates. Besides, the variance decomposition (0u0) of the RE model confirms that the between-bank

variance is negligible, which once again favors the use of RE over FE. The inclusion of within- and between-bank variation can be achieved with the use of RE and enhances efficiency of the estimates in general.

4.6 Discussion of the Study Findings

In the section, the results found in the above analyses are discussed in detail providing a connection between the empirical results in relation to the aims of the study, the theoretical framework, and available literature. The discussion explains the impact of cost-plus pricing, risk-based pricing, the role of market-based pricing and the regulatory environment on the performance of Tier 1 commercial banks in Kenya. The focus is placed in the comparison between the current results and the findings of the previous studies to point out the similarities or differences. The section also examines the potential causes of relationships observed, keeping in mind contextual, regulatory and operational influences which determine the efficacy of loan pricing approaches in the banking sector of Kenya.

4.6.1 Cost-Plus Pricing and Performance of Tier 1 Commercial Banks in Kenya

The findings of the random-effects model indicate that Cost of Funds (β= -0.053, = 0.677) and Interest Margin (β = -0.117, = 0.416) had negative but insignificant impacts on ROA. This means that an increase in funding and lending expenses has minimal impact on profitability but with little predictive ability. In theory, this is in line with the Resource-Based View (RBV), which postulates that weak competitive advantage may result due to inefficiency in the use of internal resources, including the inability to keep operational costs low. The relationship is not statistically significant but is still theoretically applicable since cost management is the determinant of long-term profitability and competitiveness.

These results are in contrast with those of Ogbe et al. (2024) who have found that cost-plus pricing increased income greatly in commodity markets and Insightful Banking (2023), which found it simpler to make profits. The contradiction can be explained by the difference in

contexts: commercial banks do not see regulatory limits and credit risk in product markets. Cost-plus pricing, therefore, will still be conceptually good, but its profitability impact in regulated banking environments is constrained by both market rigidity and operational inefficiency.

4.6.2 Risk-Based Pricing and Performance of Tier 1 Commercial Banks in Kenya

Regression data indicates that there are negative but insignificant impacts of Credit Risk Score (β= -0.043, p = 0.726) and Loan Loss Provisions (β= -0.043, p = 0.855) on ROA. The results though statistically insignificant have theoretical significance in the interest rates under the Risk-Based Pricing Theory, which states that interest rates ought to reflect the risk taken by the borrower to ensure that the balance between default probabilities and profit margins is met (Stiglitz and Weiss, 1981). The low correlation could be a sign of inefficiency in risk differentiation among borrowers or insufficient integration of predictive credit-scoring instruments.

Empirically, the results are different than Kurniawati et al. (2025) and Bogecho and Miroga (2025) who found out that there were significant positive relationships between risk-based pricing and profitability when more sophisticated risk frameworks were implemented. This inconsistency can be due to the fact that Kenya has comparatively immature credit information systems and high NPL that reduces the accuracy of pricing. Therefore, although not statistically significant, the finding has a theoretical implication - it highlights the fact that poor risk pricing behaviors compromise the main benefit of the loan returns matching the exposure to credit risk.

4.6.3 Market-Based Pricing and Performance of Tier 1 Commercial Banks in Kenya

Results of random effects indicate that CBR Linkage (β= -2.583 with other = 0.088) and Market-Driven Rate (β= -0.098 with other = 0.368) has negative but statistically nonsignificant impacts on ROA. Hypothetically, the Information Asymmetry Theory holds that there are imperfect market signals which cause mispriced loans and this influences profitability. The outcomes are not statistically significant but their orientation makes economic sense in the fact that any

changes of central bank and market rates have the ability to narrow the margins and raise the default risk. In this way, although the information is not evidence that supports a quantifiable effect, the theoretical explanation is critical in explaining market transmission inefficiencies.

These results are partly inconsistent with Bikker (2018) and Bank for International Settlement (2024) who found that market-based pricing and performance are positively correlated in competitive markets. This difference can be due to the fluctuating interest rate policies and inflation in Kenya. Thus, although not supported statistically, the negative coefficients indicate the macroeconomic susceptibility of Kenyan banks to policy shocks, and adaptive rate-setting mechanisms are necessary.

4.6.4 Regulatory Environment (Moderating Effect) and Performance

The random-effects model implies that the Banking Regulation Index (β=0.865, p = 0.376) has a positive yet insignificant moderating impact on ROA, whereas the CBK Rate Cap (β=0.151, p = 0.568) has a moderating effect of a weak negative nature. In spite of being insignificant, they are theoretically consistent with the Resource-Based View (RBV), according to which regulation impacts institutional capabilities through its influence on operational flexibility. These trivial findings mean that although regulatory structures determine how prices are set, they have a poor moderating effect on profitability at present.

The results are in line with Arin et al. (2025), which determine that there is a low ROA responsiveness to regulatory ratios, but in opposition to Bogecho and Miroga (2025), which determine the strong post-deregulation impacts. This disjoint could be attributed to the transitional policy nature of Kenya after the removal of the interest caps. Theoretical relevance is also high because stipulating regulation has an indirect impact on determining pricing freedom, risk exposure, and capital adequacy. Therefore, although the results are statistically insignificant, they indicate that balanced supervision that would facilitate credit availability and profitability is required.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary, conclusion, and recommendation based on findings of the research on loan pricing techniques, regulatory environment, and performance of Tier 1 commercial banks in Kenya. It gives a brief description of the key findings on the basis of the study objectives, which revolved around cost-plus pricing, risk-based pricing, market-based pricing, and moderating effect of regulation. The chapter combines statistical findings, theoretical conclusions and practical implications to make meaningful conclusions. In addition, it gives practical suggestions to the bank managers, policymakers, and regulators to enhance the efficiency of loans pricing, profitability, and financial stability. Lastly, the chapter outlines the gaps and suggests future research opportunities, noting that the general competitiveness of the banking industry in Kenya should be assessed by means of the continuous review of the pricing models and regulatory frameworks.

5.2 Summary

5.2.1 To examine the effect of cost-plus pricing on the performance of Tier 1 commercial banks in Kenya

In the random-effects results, it was found that Cost of Funds (β= -0.053, p = 0.677) and Interest Margin (β= -0.117, p = 0.416) had negative but not statistically significant effects on ROA, and the relationship between Operating Expenses and ROA was weak and positive (p=0.041). The implication of these findings is that increased funding, and interest expenses marginally decrease profitability, but the increase in operational expenses does not provide significant gains in returns. The results indicate that the cost-plus pricing does not have a significant impact on the performance of banks, which can be explained by regulatory constraints and cost inefficiencies. Regardless of theoretical significance in the Resource-Based View, the significance of the

findings shows that the profitability of the Tier 1 banks is influenced more by external macroeconomic and competition forces than internal cost-based pricing mechanisms.

5.2.2 To assess the impact of risk-based pricing on the performance of Tier 1 commercial banks in Kenya

The random-effects model showed negative but non-significant association between Credit Risk Score (β= -0.043, p = 0.726) and Loan Loss Provisions (β= -0.043, p = 0.855) and ROA. These coefficients indicate that the higher the exposure to credit risk and provisioning the less the profitability. Nevertheless, the statistical value of the effects is all weak meaning that risk-based pricing mechanism has not greatly influenced the performance of the banks during the period of study. This result can be explained by the ineffective risk segmentation and poor integration of credit data. In theory, this corresponds to the Risk-Based Pricing Theory which places greater focus on matching the loan rates to the risk of the borrower. The relationships do not show any statistical significance, but they highlight the practical essence of improving the credit assessment structures in order to drive profitability and reduce the risks of default in Tier 1 Kenyan banks.

5.2.3 To evaluate the influence of market-based pricing on the performance

The results of the random-effects model suggest that CBR Linkage (β= -2.583, p = 0.088) and Market-Driven Rate (β= -0.098, p = 0.368) had negative, but insignificant impact on the ROA. The coefficients suggest that the changes in the central bank rate movements and the market interest rates can have a slight decreasing effect on the profitability but not significantly. The negative β of CBR Linkage is relatively higher although insignificant, which means that macroeconomic and policy shocks can be strong in affecting performance. These findings reflect the Information Asymmetry Theory that involves distortion of pricing accuracy and financial returns due to imperfect market information. As such, though market-based pricing theoretically would have an effect on profitability, its practical value is less relevant in the current volatile

Kenya interest rate case and indicates that the banks require more flexible and dynamic rate-setting approaches.

5.3.4 To determine the moderating effect of the regulatory environment on the relationship between loan pricing models and the performance of Tier 1 commercial banks in Kenya.

The results of the random-effects demonstrate that the Banking Regulation Index (β= 0.865, p = 0.376) moderates ROA in a positive but insignificant way, whereas the CBK Rate Cap (β = -0.151, p = 0.568) has a weak negative and insignificant moderate effect. The coefficients suggest that regulatory control has a minor effect in improving performance, as it promotes stability; however, restrictions on interest rates restrain profitability. Although the results are not statistically significant, they are theoretically applicable within the framework of the Resource-Based View, which cites regulation as a factor of institutional capability and competitiveness. These findings are in line with earlier results suggesting that there is a low short term regulatory effects on profitability. Therefore, although the moderating effect of regulation is not statistically significant, it is important to regulate it to provide well balanced credit prices, compliance and sustainable profitability of Tier 1 commercial banks in Kenya.

5.3 Conclusion

The research makes a conclusion that cost-plus pricing does not have an extensive impact on the financial performance of Tier 1 commercial banks in Kenya. This pricing model despite its strong conceptual basis is limited by its reliance on internal cost structures which could limit competitiveness in a controlled banking sector. The results are in line with Gheddar (2024) who discovered that cost-based pricing had little benefits in terms of profitability in a highly regulated market because of structural inefficiencies. Nevertheless, they are opposite to Ogbe et al. (2024) who found that cost-plus pricing increased returns in more elastic commodity markets. In theory, with the Resource-Based View, effective control of the internal costs is also vital in maintaining profitability. Thus, cost plus pricing might not be the direct driver towards bank performance but

it is significant in ensuring the operating efficiency and a stable platform on the basis of pricing decisions in Kenya that is currently experiencing a competitive banking industry.

The research confirms that risk-based pricing has limited effect on the profitability of Tier 1 commercial banks. Even though risk-adjusted pricing is supposed to reward proper credit risk rating, in Kenya, it is seen to be constrained by data inefficiencies and poorly developed credit scoring mechanisms. These results contrast with Kurniawati et al. (2025), and Bogecho and Miroga (2025), who identified that effective risk-based pricing positively affected the performance of banks due to the improvement of credit management. Based on the Risk-Based Pricing Theory, the findings indicate that without proper differentiation of borrower risk, the loan portfolios turn less profitable. The practical implication therefore is the need by banks to enhance credit evaluation and information-sharing mechanisms. Risk-based pricing is theoretically and strategically essential to support the continuity of profitability and minimization of exposure to default in the developing Kenyan financial environment even in the absence of strong empirical effects.

The research concludes that the market-based pricing plays a little role in the performance of the banks because of the instability in the macroeconomic and monetary conditions. The volatility of the central bank rates and market volatility seem to undermine the direct relationship between the market pricing and profitability. This observation contrasts with Bikker (2018) and the Bank for International Settlement (2024) who discovered that market-based pricing improves efficiency in economies that are more stable. The results are consistent with the Information Asymmetry Theory, which assumes that the inaccuracy in the prices of loans is caused by the lack of perfect market information and inconsistency in policy implementation. Non-empirical Market-based pricing, although not with the greatest empirical impact, is still theoretically applicable in terms of its implications on the determination of the outcomes of lending in situations of interest rate changes and uncertainty in regulations. Kenyan

banks must thus have flexible pricing systems that can effectively react to the economic changes in a manner that keeps them competitive and profitable at the same time.

The research concludes that the regulatory environment is a moderation factor that has a limited though significant influence in the relationship between the pricing of loans and the performance of loans. Regulation ensures stability and consumer protection but has the potential to limit the flexibility of prices and profitability. These results are consistent with Arin et al. (2025) that indicate a slight short-term regulatory effect on profitability, but differ with Bogecho and Miroga (2025) who observed an increase in the bank margins following the lift of the interest rate caps. According to the Resource-Based View, the regulatory frameworks have an effect on the institutional capabilities through the allocation of resources and strategic decisions. Therefore, regulation is an important factor of the discipline of operations and confidence in the market even in the absence of a robust statistical influence. The stability of profitability and fair credit pricing and systemic stability in the Kenya Tier 1 commercial banking industry needs a balanced regulatory framework therefore.

5.4 Recommendations

This section gives recommendations based on the study findings on lending rates and lending techniques and regulatory environment and performance of the Tier 1 commercial banks in Kenya. The recommendations are meant to direct policymakers, regulators, and bank management to enhance pricing strategies, profitability, and an effective regulatory framework that is balanced enough to guarantee financial stability and sustainable growth.

5.4.1 General Recommendations

Banks with commercial status should reconsider the cost-plus pricing mechanism in order to enhance internal efficiency and cost controls. Cost-based pricing requires a precise evaluation of operation and funding costs, which means that the banks must improve cost accounting and implement digital cost monitoring tools. This will assist in making sure that the lending rates are determined on realistic cost structures as opposed to historical or rough estimates. Also, the

interest spreads should be reviewed consistently by the institutions as a way of remaining competitive whilst also making profits. The training of finance teams regarding the process of cost optimization, as well as dynamic price strategy, will complement the decision-making process. Whereas cost plus pricing does not necessarily impact much on the profitability, its strategic contribution in the sustainability of lending practices and transparency of costs makes it a major factor in the long term performance of Tier 1 commercial banks in Kenya.

Banks with commercial status should reconsider the cost-plus pricing mechanism in order to enhance internal efficiency and cost controls. Cost-based pricing requires a precise evaluation of operation and funding costs, which means that the banks must improve cost accounting and implement digital cost monitoring tools. This will assist in making sure that the lending rates are determined on realistic cost structures as opposed to historical or rough estimates. Also, the interest spreads should be reviewed consistently by the institutions as a way of remaining competitive whilst also making profits. The training of finance teams regarding the process of cost optimization, as well as dynamic price strategy, will complement the decision-making process. Whereas cost plus pricing does not necessarily impact much on the profitability, its strategic contribution in the sustainability of lending practices and transparency of costs makes it a major factor in the long term performance of Tier 1 commercial banks in Kenya.

The commercial banks in Tier 1 category need to implement market-based pricing models that are flexible to changes in the central bank rates, as well as macroeconomic factors. Banks ought to integrate real-time market analytics to increase or decrease the rates of lending dynamically out of demand, inflation, and monetary policies change instead of using fixed interest rate policies. The risks that are due to the fluctuating financial markets will be reduced by strengthening treasury management functions and interest rate forecasting. Pricing strategies can also be further stabilized by working closely with the Central Bank of Kenya in order to enhance predictability of policies. Also, banks are to diversify their loan portfolio to hedge

against rate shocks. Even though market-based pricing did not have a significant influence on direct performance, its theoretical potential in improving competitiveness and transparency is high. Through adaptive pricing systems, banks will be able to protect their profitability and to encourage credit availability in the developing financial landscape of Kenya.

Banks and regulatory institutions ought to liaise to provide a balanced regulation system that prevents financial stability without restricting the pricing elasticity. Tier 1 banks are expected to enhance compliance mechanisms besides actively participating in regulatory discussion to set pricing practices to reflect market reality. The Central Bank of Kenya would be well advised to review the policies like the rate caps, capital adequacy ratios and liquidity requirements so that they are updated according to the dynamics of the economy. Regulatory sandboxes can also be encouraged to allow the flexible pricing models to be tested controlled without damaging consumer protection. Even though regulation did not have significant statistical effect, it has theoretical significance in influencing operational discipline regime. Therefore, regulation should be adjusted to strategic freedom of price in order to improve the strength of banks, their performance, and long-term expansion in the Kenyan banking industry.

5.4.2 Policy Recommendations

The policymakers, under the leadership of the Central Bank of Kenya and the National Treasury are expected to develop adaptive monetary and credit policies that address profitability and consumer protection. This involves reviewing interest rate structures to enable flexibility without being exploitative in lending. To enhance transparency, the regulatory authorities must invest in the development of integrated credit information systems to facilitate risk-based pricing. The government policies should further encourage competition between Tier 1 and smaller banks to provide fair loan prices and financial inclusion. Trust and accountability will also be increased by further strengthening of the macroprudential supervision and the implementation of uniform disclosure standards. Using combined fiscal and monetary policy, Kenya has the potential to

establish an enabling environment that facilitates innovation in loan pricing as well as the financial stability of the banking sector.

The regulators must facilitate policies that support digital transformation and data-driven lending throughout the industry to enhance sustainable bank performance. The Central Bank of Kenya needs to encourage the implementation of fintech solutions that enhance risk identification, cost control, and market sensitivity. Regulators and commercial banks should also be urged by policymakers to hold regular stakeholder consultations to assess the effectiveness of the regulations in use on lending practices. Striking a compromise by adopting an adaptable policy framework that is adjusted to changes in technology and economics will make pricing models efficient and inclusive. Also, policy changes must facilitate ongoing capacity development of credit officers and auditors in order to enhance governance. These will guarantee that the Tier 1 banks in Kenya attain equilibrium between regulation, innovation, and profitability, resulting in a stronger and competitive banking system.

5.5 Limitations of the Study

The research used panel regression design based on data of Tier 1 commercial banks which whilst suited to capture the temporal variations, might fail to capture unobserved heterogeneity between banks. The dependence on secondary financial details inhibits the quantification of such qualitative parameters like managerial judgment and customer behavior that affect the pricing decisions. Also, the statistical significance of the relationship between variables may have been compromised by the use of aggregate bank-level data, which could have created measurement bias. Tier 2 and Tier 3 banks were also not included in the study and restrict the generalization to the whole banking industry. Moreover, the weakness of some regression results can be the possibility of the advance of model specification or the absence of certain variables, including macroeconomic shocks, competition level, and the use of technology, which might have made the analysis more explanatory.

There were also issues of resource constraints in the course of the research. Finances would limit the scope of data gathering, particularly the purchase of proprietary data sets through financial regulatory authorities or personal analytics companies. The lack of time and logistical ability influenced the extent of model testing and sensitivity assessment that could have improved strength. The research used mostly publicly available data, which could have limited access to more detailed data on pricing mechanisms, loan segmentation, and internal cost structure. Also, the software license and computational resources were constrained, which reduced the exploration of other estimation methods like non-linear models and dynamic models. These constraints might have constrained the analyzing ability, but do not undermine the validity of the study; instead, they indicate the need to improve the methodology and access to more data in future studies.

5.6 Suggestions for Further Study

Further studies can expand upon the present results by investigating how the loan pricing methods are mutually dependent on the new digital banking technologies, including credit scoring by fintech and algorithmic pricing. To overcome methodological shortcomings, scholars might consider using more general data and including Tier 2 and Tier 3 banks to increase generalizability. The Risk-Based Pricing Theory and Resource-Based View can also be applied in future research to examine how they apply across various regulatory and cultural settings, including regional or microfinance institutions, to determine their generalizability. To capture external shocks, researchers can extend the current framework to incorporate macroeconomic variables such as inflation volatility, exchange rates fluctuations and policy interventions. Also, it is proposed to use longitudinal and mixed-method designs that can offer more extensive insights into the impact of strategic pricing decisions as they progress with time and affect profitability, stability, and even competitive advantage in the dynamic Kenyan financial environment.

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APPENDIX I- FINANCIAL DATA COLLECTION MATRIX

Bank Name	Year	Variable Category	Measurement	Value
Kenya Commercial Bank (KCB)	2015	Cost-Plus Pricing	Cost of funds	
	2015	Cost-Plus Pricing	Operating expenses	
	2015	Cost-Plus Pricing	Interest margin	
	2015	Risk-Based Pricing	Credit risk scores	
	2015	Risk-Based Pricing	Rate by risk class	
	2015	Risk-Based Pricing	Loan loss provisions	
	2015	Market-Based Pricing	CBR linkage	
	2015	Market-Based Pricing	Inflation trend linkage	
	2015	Market-Based Pricing	Market-driven rates	
	2015	Regulatory Environment	CBK interest rate caps	
	2015	Regulatory Environment	Banking sector regulation index	
	2015	Regulatory Environment	Credit reference bureau usage rate	
	2015	Bank Performance	Return on Assets (ROA)	
	2015	Bank Performance	Loan Repayment Rate	
	2015	Bank Performance	NPL Ratio	

APPENDIX 2: TIER 1 COMMERCIAL BANKS IN KENYA

No.	Bank Name	Abbreviation	NSE Ticker
1	Kenya Commercial Bank	KCB	KCB
2	Equity Group Holdings	Equity Bank	EQTY
3	Co-operative Bank of Kenya	Co-op Bank	COOP
4	NCBA Group PLC	NCBA	NCBA
5	Absa Bank Kenya PLC	Absa	ABSA
6	Standard Chartered Bank Kenya	StanChart	SCBK
7	Diamond Trust Bank Kenya	DTB	DTK
8	I&M Bank Limited	I&M Bank	I&M
9	Stanbic Bank Kenya	Stanbic	SBIC

Source: NSE, 2025)

APPENDIX 2: LITERATURE GAPS

Author(s) and Year	Focus of the Study	Methodology	Key Findings	Knowledge Gap
Ahmed & Nawaz (2024)	Dynamic money market model and optimal monetary policy	Mathematical modeling, optimization	Derived optimal expansionary and contractionary policy equations	Does not examine real-world bank pricing application like cost-plus in Tier 1 commercial banks
Ogbe et al. (2024)	Pricing strategies and maize marketers' revenue	Descriptive & inferential statistics on 400 marketers	Dynamic pricing yields highest revenue	Focus is on agriculture sector, not banking—lacks linkage to formal banking strategy impact
Michael et al. (2024)	NHA pricing strategies for employee housing	Systematic literature review using PRISMA	Suggested flexible and transparent pricing strategies	Public housing sector focus, not adaptable to commercial bank performance context
Nathan (2024)	Fair pricing regulations in procurement contracting	Regression discontinuity design	TINA improves competition and performance, reduces cost-plus pricing	Limited to federal procurement, not directly applicable to commercial bank operations
Ulya et al. (2023)	Effects of BI Rate, ROE, EPS, NPM on Sharia bank share prices	Multiple linear regression (SPSS)	BI Rate & ROE negatively impact share price; EPS & NPM positive	Focuses on share price drivers, not pricing strategy in bank service/product delivery
Gheddar (2024)	Pricing methods in Islamic banks (Algeria)	Secondary data & simulations	Banks follow traditional cost strategies; lack of scientific pricing	Ignores Tier 1 bank performance; lacks cost-plus strategy evaluation
Kurniawati et al. (2025)	Risk-based pricing and revenue optimization in Indonesia	Panel regression, VECM, KMV model	Risk-based pricing crucial for profitability amid macro risks	No specific application to Tier 1 banks; lacks segmented performance outcomes
Arin et al. (2025)	Basel III capital ratios & Nigerian bank profitability	Regression Discontinuity Design	Tier 1 capital boosts ROE but not ROA	Focused on regulatory capital, not pricing strategies like risk-based or market-based pricing

Bogecho & Miroga (2025)	Impact of interest rate cap lift on Kenyan banks	Descriptive research; 45 observations	Cap removal increased margins and performance	Limited insight on pricing strategy evolution post-cap, particularly risk-based pricing
Nguyen & Nguyen (2024)	Digital transformation, Basel III, and credit risk in Vietnam	FEM, REM, pooled OLS	Digital adoption and Basel III raise credit risk	Doesn't connect digital/risk shifts to specific pricing model performance
Ugbaja (2025)	Bank vs. MFI performance in Nigeria	Mixed methods, chi-square, regression	Banks more profitable, MFIs better at inclusion	No disaggregation of how pricing strategy (risk-based or cost-plus) influences outcomes
Sobirovna (2025)	Investment and credit potential of banks	Comparative/empirical analysis	Recommends improving risk tools and financial intermediation	Lacks focus on pricing mechanisms' role in enhancing investment/credit potential
Wang & Wang (2025)	Risk disclosure and risk premia in China	CAPM-based model analysis	Disclosure reduces market & firm-specific risk premia	Does not relate disclosure impact to actual market-based pricing strategies
Pauls (2023, 2025)	PBC role in market-based banking	Qualitative macro-finance review	PBC governs through interbank markets	No direct empirical assessment of market-based pricing on bank performance
Dzingirai & Dzingirai (2024)	Non-interest income thresholds and bank performance	FMOLS & Threshold GMM	Higher disaggregated non-interest income improves performance	Focuses on revenue structure, not on pricing strategies like market-based pricing
Sissoko (2025)	Rethinking market vs. bank-based lending	Theoretical policy analysis	Contingent liabilities are key to monetary dynamics	No empirical analysis of market-based pricing models in banks
Poudel et al. (2024)	Governance effect on stock and return of Nepalese banks	Regression on secondary data	Audit committees, board diversity, profitability enhance performance	Ignores pricing mechanism as a driver of market performance