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MACROECONOMIC VARIABLES AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA.

BY

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ST. PAUL'S UNIVERSITY

A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS AND LEADERSHIP IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION (FINANCE) DEGREE OF ST. PAUL'S UNIVERSITY

NOVEMBER, 2024

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DECLARATION

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DEDICATION

I dedicate this dissertation to my beloved family and friends, whose unwavering support, love, and encouragement have been my greatest source of strength throughout this journey. To my family, for their constant belief in my abilities and their patience during the challenging moments, and to my friends, for their understanding and words of motivation when I needed them the most—this accomplishment would not have been possible without you. Thank you for standing by me every step of the way.

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LIST OF ABBREVIATION AND ACRONYMS

CBK:	Central Bank of Kenya
CBR:	Central Bank Rate
GDP:	Gross Domestic Product
IMF:	International Monetary Fund
KBA:	Kenya Bankers Association
KNBS:	Kenya National Bureau of Statistics
LCR:	Liquidity Coverage Ratio
LLC:	Levin-Lin-Chu
NIM:	Net Interest Margin
NPLs:	Non-Performing Loans
ROA:	Return on Assets
ROE:	Return on Equity
USA:	United States of America
VIF:	Variance Inflation Factor

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OPERATIONAL DEFINITION OF TERMS

Bank size: Bank size refers to the total value of a bank's assets, including loans, deposits, and investments. It is often used as an indicator of a bank's market influence and financial capacity.

Financial performance: This refers to the ability of the bank to generate income from its assets and operations and it is measured using metrics like Return on Assets (ROA) and Return on Equity (ROE).

Gross Domestic Product: Thus is the total monetary value of all goods and services produced within a country's borders in a specific time period. It is a key indicator of a nation's economic performance.

Inflation rate: This is the rate at which the general level of prices for goods and services rises, reducing purchasing power over time. It is usually expressed as an annual percentage increase.

Interest rate: Refers to the percentage charged on a loan or paid on savings, representing the cost of borrowing or the return on investment and expressed annually as a percentage of the principal amount.

Unemployment: Unemployment is the condition where individuals who are actively seeking work are unable to find employment and it is usually expressed as a percentage of the total labor force.

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ABSTRACT

The global economic environment continues to experience fluctuating inflation rate rates, varying levels of Gross Domestic Product (GDP) growth, and ever-rising levels of unemployment. These macroeconomic changes affect profitability of commercial banks across different regions worldwide. The rationale of this study was to determine the effect of macroeconomic factors and financial performance of the commercial banks in Kenya. Specifically, the study sought to investigate the effect of interest rate, GDP growth, unemployment, and inflation rate on financial performance of commercial banks in Kenya. In addition, the research work sought to determine the moderating effect of bank size on the relationship between macroeconomic factors and financial performance. The economic theory and inflation rate uncertainty theory provided the theoretical foundation of the study. A causal research design based on panel data approach was adopted in the study. The study used secondary data which was obtained from 37 commercial banks for the period covering 2013 through 2022. Data was sourced from The Kenya National Bureau of Statistics, the Central Bank of Kenya, and audited financial statements of the commercial banks considered in this study. Data analysis involved both descriptive and inferential statistics where the former constituted of the mean and standard deviation while the latter comprised of panel regression. Normality, multicollinearity, heteroskedasticity, stationarity, and model specification tests were the main diagnostic tests utilized in the study while presentation of the data was done using tables and graphs. The hypotheses were tested at a level of significance of 5%. The findings revealed that interest rate had a positive and statistically significant effect on financial performance (r=*.002; p=.007; p< .05*), GDP exhibited a positive and statistically significant effect on ROA (*r=.147; p=.048; p<.05*) whereas unemployment showed a negative and statistically significant effect on ROA (*r=-.004*; *p=.002; p<.05*). Moreover, inflation rate revealed a negative and statistically significant effect on return on assets (*r=-.111; p=.021; p<0.05*). Bank size positively moderated the relationship between GDP growth and financial performance (*p=.043; p<.05*) whereas it exhibited an insignificant moderating effect on the relationship among Interest rate, unemployment, and inflation rate, as predictor variables, and financial performance (*p>0.05*). The study recommends that commercial banks should leverage on interest rate increases to boost profitability through strategic adjustment of loan and deposit rates to maximize interest income.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter provides an overview of the background to the study with an outline of the independent and dependent variables, presenting the problem statement, objectives, research questions, significance, scope, and limitations of the research.

1.1 Background to the Study

The banking sector serves as the linchpin of its financial system, playing an indispensable role in fostering economic growth and development. Recognized as pivotal institutions in regulating a nation's overall economic progress) Central Bank of Kenya (CBK, 2022) commercial banks act as intermediaries, facilitating the flow of funds from savers to borrowers. This process not only promotes investment but also contributes significantly to fostering financial inclusion. However, the performance of these commercial banks is subject to a multifaceted interplay of internal and external factors. As noted by Ongore (2018), poor performance of commercial banks can lead to instability and crises, causing detrimental ripple effects on economic progress. The 2008 crisis was a harsh lesson on how vulnerable our systems can be, with commercial banks bearing the brunt and experiencing significant impacts on their financial strategies and operations (Kim, 2020).

The global economy was negatively impacted by COVID-19, and Kenya's banking sector was no exception. Lockdowns, travel restrictions, and supply chain disruptions led to reduced economic activity, resulting in a rise in Non-Performing Loans (NPLs) for banks, which in turn eroded profitability (CBK, 2022). Due to the uncertain economic outlook, banks became more cautious in lending, causing a slowdown in credit growth and potentially impeding economic recovery (International Monetary Fund [IMF], 2021). However, the pandemic accelerated the adoption of digital banking, enabling banks to offer contactless services and reach customers remotely. This shift drove increased investment in technology, providing opportunities for cost reduction and improved operational efficiency (Kenya Bankers Association[KBA], 2021).

This study examines how economic factors in Kenya impact the profitability of commercial banks. The four key macroeconomic variables under scrutiny are interest rates, inflation rate,

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gross domestic product, and unemployment. The primary focus will be on two key measures of profitability: Return on Equity (ROE) and Return on Assets (ROA). ROA provides insight into the ability of a bank a to generate profits from its total assets, offering a comprehensive view of its operational efficiency. On the other hand, ROE measures a bank's profitability to its shareholders' investment, highlighting its effectiveness in capital management.

Globally, the European financial sector has been through a major change through the last two decades, merger waves, sovereign debt crises, restructuring and strategy changes, legal-auditing-accounting reforms, are some of the changes that took place (Notteboom *et al.,* 2021). The European Union (EU) has enforced, encouraged and promoted several initiatives that affected the financial performance of financial sector in the region (Pereira, 2018). The financial sector in Europe has been under considerable pressure in the past decade as businesses, citizens and national authorities have been affected by the financial crisis (Calabrese, Girardone & Sclip, 2021). Challenges on development of new technologies, the fragmentation of the EU markets and climate change continue to exist.

Regionally, the African Mergers and Acquisition Market has been trending upwards over the past few years, although it is quite small compared to other M&A markets worldwide (Amewu & Alagidede, 2021). This has been mainly due to the high economic growth in energy, mining and utilities sectors. It has been noted that most cross-border mergers take place among firms in developed countries and that firms with high levels of intangible assets or Research and Development (R&D) intensity are natural candidates for cross-border mergers (Sá, 2021). This is due to the the combined firm needs to spread the high fixed cost of R&D expenditures and knowledge asset attainment over large foreign markets. Global Law firm Baker McKenzie's 2021 quarterly Cross-border M&A Index shows that South Africa was the top target country for inbound deals by volume and value, accounting for 29% of total deal count and USD 422 million or 54% of total value in Africa. The report also showed that Nigeria had an upward trending on M&A trend in the financial sector.

Kenya's commercial banks have registered significant progress over the last 10 years through strengthened regulatory framework independent authorities with specific mandates; increase in the number of players (intermediaries) and rollout of various customized services and products (Mwaniki, 2015). Economic Recovery Strategy for Wealth and Employment Creation (2003–

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2007) for instance focused on the financial sector reforms to facilitate improved access to financial services and efficient intermediation of financial resources (Munene, 2019). Vision 2030: Kenya's economic blueprint (2008–2030) aims to transform Kenya into a middle-income country by 2030 including transformation towards stronger large-scale financial; credit referencing; deeper penetration of financial services; formalizing microfinance institutions and expanding reach of microfinance institutions (Central Bank of Kenya, 2019). Kenya Vision 2030 aims to create a more robust and inclusive financial sector in Kenya that can support the country's economic growth and development objectives. By transforming commercial banks in Kenya, the plan seeks to create a more efficient, competitive, and responsive financial sector that can meet the needs of all Kenyans (CBK, 2019).

1.2 Financial Performance

Examining the financial performance of commercial banks is crucial for assessing their operational efficiency and resilience within the financial landscape (Bakare, 2021). This study focused on four key areas to gauge banks' financial health. Profitability metrics like net income, Return on Assets (ROA), and Return on Equity (ROE) offer valuable insights into banks' ability to generate earnings from their operations and efficiently utilize their assets and equity. A high ROA and ROE indicate effective management practices and strong profitability, which are essential for the sustained growth and competitiveness of commercial banks in the industry (Kamweru, 2019).

Measures of a company's ability to collect its loans, including bad loans and reserves for potential losses provide critical insights into banks' risk management practices, particularly in relation to credit risk (Hu, 2019). These metrics help evaluate the quality of banks' loan portfolios and their ability to identify and mitigate potential credit losses. A low ratio of NPLs to total loans and adequate provisions for loan losses signal prudent lending standards and effective risk mitigation strategies, contributing to overall financial stability and resilience (Kimberly, 2020).

Liquidity and funding metrics, including the loan-to-deposit ratio and Liquidity Coverage Ratio (LCR), assess banks' ability to meet short-term obligations and sustain operations. Maintaining adequate levels of liquidity is essential for banks to fulfill deposit withdrawals and funding needs without relying on costly measures or facing liquidity shortages, thereby safeguarding their

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financial health and stability (Igan, 2018). These metrics provide valuable insights into banks' liquidity management practices and their ability to manage liquidity risks effectively in various market conditions.

Financial health measures like the Common Equity Tier 1 (CET1) ratio and leverage ratio evaluate banks' ability to absorb potential losses and maintain financial resilience. Adequate capitalization is crucial for protecting depositors' funds, complying with regulatory requirements, and supporting sustainable lending practices (Kamweru, 2019). Strong capital buffers enhance investor confidence and ensure that banks can withstand economic downturns or adverse events, contributing to overall stability of finance and long-term viability in this sector. Through a comprehensive analysis of these key metrics, the study aims to provide important insights into the financial performance of commercial banks and their ability to navigate dynamic market conditions while sustaining growth and stability over time. This study used return on assets as metric for measuring financial performance because the above measures, as used in other studies complement ROA by providing more details on capitalization and risk management, ensuring understanding of a bank's financial performance.

1.3 Macroeconomic Variables

Macroeconomic variables encompass critical indicators that reflects the overall health and trajectory of a given economy (John, 2018). These metrics, including bank interest rates, unemployment, GDP growth, and inflation rate, offer comprehensive insights into economic performance and trends. GDP growth Provides a quantitative assessment of the economic output within a country's borders, indicating economic vitality and expansion. Unemployment shed light on the labor market dynamics, influencing consumer spending and overall economic activity. Conversely, inflation rate measures how much the price of goods and services have gone up over a period of time, impacting purchasing power and consumer behavior (Gituto, 2019). Together, these variables interplay to shape economic policies, business strategies, and societal well-being, making them pivotal for assessing and navigating the macroeconomic landscape.

1.3.1 Interest Rates

One of the most important factors influencing interest rates is inflation rate usually measured year-over-year. Recorded as a percentage, inflation rate indicates an inferiority in the power of money, occurring when demand exceeds supply, driving prices up. This dynamic presents a

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complex scenario for commercial banks (Newton, 2017). Over the past decade (2013-2023), global inflation rate has averaged 3.5%, with US inflation rate ranging from 1.2% to 8.5% and averaging 2.2%. Banks generally benefit from rising asset values during low inflation rate but face challenges from rising costs during high inflation rate, as noted by the World Bank. In Kenya, inflation rate fluctuated between 2.7% and 11.4% during this period. Moderate inflation rate can stimulate economic activity by increasing borrowing and spending, potentially benefiting banks through higher loan volumes and fees (John, 2018). To maintain profitability, banks typically adjust loan rates upward in response to inflation rate. However, rising inflation rate can erode the value of bank-held bonds, causing potential portfolio losses, whereas falling inflation rate makes future bond payouts relatively more valuable, potentially boosting profits.

Managing these conflicting effects requires strategic and innovative approaches by banks. For instance, in 2011, Kenya's high inflation rate (11.4%) led to increased bank profit margins. During the COVID-19 pandemic, global deflationary pressures led central banks to lower interest rates, decreasing immediate bank profits but stimulating borrowing and economic activity, potentially benefiting banks in the long run. The highest inflation rate in Kenya occurred in August 2011, while the lowest was in April 2016 (World Bank 2016), highlighting the need for careful management of interest rates in response to inflation rate trends. This study measured interest rates using borrowing/lending rates because they directly reflect the cost of loan and the accessibility of loans, which are critical indicators of financial performance and economic activity.

1.3.2 Gross Domestic Product

Gross Domestic Product (GDP) is essentially the total value of everything produced in a country, measured by the market worth of goods and services, typically annually or quarterly. This metric provides a serious assessment of a country's economic activity and vitality, covering sectors such as farming, production of goods, and services. The overall size and the health of the economy, as indicated by GDP, directly impact commercial banks' performance (Kyalo, 2017). Robust GDP growth, driven by increased government spending, consumption, net exports, and business investments, enhances business activity, consumer spending, and investment. Consequently, this elevates the demand for financial services, allowing banks to expand their loan portfolios, generate higher fees, and ultimately boost profitability (Wambugu, 2019). Government spending

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injects capital into the economy, stimulating growth, while high consumption levels reflect strong consumer confidence and spending power. Positive net exports contribute to a favorable trade balance, and business investments drive innovation and expansion, all of which contribute to GDP growth. Conversely, economic stagnation or contraction, characterized by reduced government spending, lower consumption, negative net exports, and declining business investments, leads to decreased loan demand, higher defaults, resulting to lower profits for banks (Beatrice, 2013). Thus, GDP is a critical determinant of the economic environment, influencing the ability of commercial banks to thrive. The study measured GDP using changes in GDP because these fluctuations present a clear reflection of the overall economic growth or contraction, directly affecting the financial performance of banks.

1.3.3 Unemployment

Unemployment, a critical indicator of economic health, manifests in various forms: frictional (temporary between jobs), structural (mismatch between skills and jobs due to technological advancements or industry shifts), cyclical (rising during economic downturns), and seasonal (linked to specific seasons, affecting industries like tourism or agriculture). This stark reflection of economic hardship poses complex challenges for commercial banks (Brighton, 2018). Rising unemployment reduces loan repayment capacity, increasing credit risk and potential loan losses, which dampens bank profitability and necessitates stricter lending policies, further hindering economic activity (Daron, 2019). This study used cyclical unemployment, as it is directly influenced by economic downturns and fluctuations. Recessions and depressions exacerbate cyclical unemployment with widespread layoffs, while technological improvements can lead to structural unemployment by making certain skills obsolete. Job outsourcing also increases domestic unemployment as jobs move abroad. Understanding this intricate relationship requires a nuanced view of unemployment's multifaceted impact. Over the past decade (2013-2023), Kenya has seen significant fluctuations in unemployment, with rates varying by 7.5%, reflecting vulnerabilities to external shocks and internal dynamics. Pre-COVID-19 (2015-2019), unemployment gradually decreased, indicating a positive labor market, but the pandemic caused a spike in 2020 due to economic disruptions and job losses. Since 2021, the rate has stabilized but remains above pre-pandemic levels, underscoring the complex and dynamic nature of unemployment and its far-reaching effects on the economy and banking sector. Unemployment

was measured in this study using unemployment rate because it provides a straightforward and widely accepted indicator of the labor market's health, directly reflecting economic conditions impacting bank performance.

1.3.4 Inflation

Inflation makes your money buy less stuff. It's usually measured as a yearly percentage and happens when there's more demand for things than what's available, pushing prices higher. Inflation rate encompasses both cost-push factors, where rising production costs lead to higher prices, and demand-pull factors, where increased demand drives prices up. Inflation rate expectations also play a critical role, as anticipated future inflation rate can influence current economic behavior and price setting. The interplay of these factors presents a mixed bag for commercial banks (Newton, 2017).

Over the past decade (2013-2023), global inflation rate remained stable at an average of 3.5%. In the US, average inflation rate was 2.2%, with a range from 1.2% to 8.5%. Banks generally benefited from rising asset values during periods of low inflation rate but faced challenges with rising costs during higher inflation rate periods, as noted by the World Bank. Kenya experienced moderate inflation rate between 2.7% and 11.4% in the same period. Moderate inflation rate can stimulate economic activity by increasing borrowing and spending, potentially benefiting banks through higher loan volumes and fees. Banks typically adjust loan rates upward to maintain profitability.

Monetary policies, such as central banks raising interest rates to combat high inflation rate or lowering them to stimulate the economy, significantly impact inflation rate dynamics. Fiscal policies, including government spending and taxation, also influence inflation rate by affecting aggregate demand. The value of bank-held bonds decreases as inflation rate rises, eroding portfolio values and causing potential losses. Conversely, falling inflation rate can make future bond payouts more valuable, potentially boosting bank profits.

Kenya's highest inflation rate occurred in August 2011, while the lowest was in April 2016 (World Bank, 2022). Uncontrolled inflation rate erodes the value of real returns, diminishes purchasing power, resulting to an unstable economy (Kamweru, 2019). Managing these conflicting effects on banks' profitability requires careful strategizing and innovative approaches. For instance, Kenya's high inflation rate in 2011 (11.4%) led to increased bank profit margins.

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However, during the COVID-19 pandemic, global deflationary pressures led central banks to lower interest rates, which decreased immediate bank profits but stimulated borrowing and economic activity, potentially benefiting banks in the long run. Inflation rates constantly changing has a big impact on everything from the economy to banks. This study measured inflation using Consumer Price Index (CPI) which is a widely accepted metric that reflects the overall price changes in goods and services, directly impacting the cost of living and economic stability.

1.4 Bank Size

Bank size is a crucial factor to consider when analyzing the connection between macroeconomic variables and commercial bank financial performance in Kenya. Bank size acts as a moderator influencing how these variables impact different banks in different ways. Banks with higher capital can absorb bigger loans, and more deposits and potentially achieve economies of scale faster (Mwangi, 2018). Market share is another bank size measures, this includes total deposits, loans, or assets within a specific market relative to competitors (Chibole, 2022). Higher market share can provide access to a wider customer base potentially leading to increased income and profitability. Other determinants of bank size are profitability, mergers and acquisitions, and regulatory environment.

Large banks may have greater financial resources, risk management capabilities, and diversification strategies which make them more resilient to macroeconomic shocks compared to smaller banks (Ndirangu& Mutuku, 2018). Smaller banks may be more risk-averse during periods of economic uncertainty, leading to reduced credit expansion and potentially hindering economic recovery. Larger banks with their diversified portfolios and risk management expertise, may be more willing to lend during these times (Mwangi & Ongore, 2021). Bank size as a moderator is measured through total assets, loan portfolios, deposits, and the number of branches/Employees.

1.5 Problem Statement

Financial intermediaries are vital to Kenya's financial sector, playing a central role in driving economic growth and development. Over the past decade, the Return on Assets (ROA) for Kenyan banks has shown fluctuation, ranging from 13.3% to 22.4% (Kenya Bankers Association [KBA], 2023). Despite this, Kenya's credit penetration rate remains relatively low, indicating

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potential inefficiencies or constraints within the banking sector (Brighton, 2018). The financial performance of banks significantly influences the availability and cost of credit, thereby impacting businesses, households, and overall economic activity (Beatrice, 2013).

While numerous global studies have explored the intricate relationship between macroeconomic variables and financial performance of commercial banks, there is a notable gap in understanding how these variables collectively affect the financial performance of Kenyan banks (Chen, 2020). While some studies have examined individual macroeconomic factors such as interest rates or inflation rate, they often overlook a comprehensive analysis of their combined impact (Brighton, 2018). For instance, a study by Simba (2016) focused solely on interest rates effects on bank profitability, neglecting the potential interaction with inflation rate dynamics. Similarly, research by Finance (2017) delved into inflation rate pressures on loan performance but failed to consider the simultaneous influence of interest rate fluctuations.

Furthermore, the evolving economic and regulatory landscape in Kenya necessitates a deeper understanding of how macroeconomic variables collectively influence bank performance. While studies like those conducted by Brian (2019) and Savannah Research Group (2020) have explored the impact of GDP growth on bank profitability. Similarly, studies by Jungle Analytics (2018) and Zebra Insights (2021) have examined the relationship between unemployment and bank performance metrics, but they do not consider the broader context of inflation rate and interest rate dynamics.

In the existing body of research, significant gaps emerge in the contextual, conceptual, and methodological aspects of studying how macroeconomic variables affects the financial performance of commercial banks in Kenya. While some studies focus on isolated macroeconomic factors like interest rates or inflation rate, they often lack a comprehensive analysis that considers the interplay between these variables. Additionally, methodological limitations, such as the failure to account for moderating factors like bank size, hinder a thorough understanding of the connection between macroeconomic dynamics and bank performance in the Kenyan context. Thus, there is a pressing need for research that addresses these gaps by adopting a holistic approach, incorporating multiple macroeconomic variables, employing robust methodologies, and considering the broader contextual factors shaping the banking sector in

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Kenya. This research sought to provide policymakers and industry stakeholders with more nuanced insights to inform decision-making and risk management strategies effectively.

1.6 Objectives of the Study

This study was guided by both general objective and specific objectives.

1.6.1 General Objective

The general objective of this study was to analyze the effects of macroeconomic variables and the financial performance of commercial banks in Kenya.

1.6.2 Specific Objectives

The specific objectives of the study were:

i. To investigate the effect of interest rates on financial performance of commercial banks in Kenya.

ii. To assess the effect of GDP on financial performance of commercial banks in Kenya.

iii. To assess the effect of unemployment on financial performance of commercial banks in Kenya.

iv. To examine the effect of inflation rate on the financial performance of commercial banks in Kenya.

v. To Examine the moderating effect of Bank Size on the relationship between Macroeconomic Variables and the Financial Performance of Commercial Banks in Kenya.

1.7 Research Hypotheses

The following hypotheses will guide this research:

H_{01}: Interest rates have no significant effect on the financial performance of commercial banks in Kenya.

H_{02}: GDP has no significant effect on the financial performance of commercial banks in Kenya.

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H_{03}: Unemployment has no significant effect on the financial performance of commercial banks in Kenya.

H_{04}: Inflation has no significant effect of on the financial performance of commercial banks in Kenya.

H_{05}: Bank size does not have a moderating effect on the relationship between macroeconomic variables and financial performance of commercial banks in Kenya.

1.8 Significance of the Study

This study on the relationship between macroeconomic variables on the financial performance of commercial banks in Kenya holds significance to the policymakers by equipping them with variable tools to navigate economic fluctuations, foster financial stability, and promote sustained economic growth. The study goes beyond static analyses by examining the dynamic interplay between macroeconomic variables and bank performance over time. This offers insights into how banks adapt and adjust their strategies in response to evolving economic conditions.

The research will expand our understanding of the macro-economic linkages in the banking sector, particularly within the context of developing economies like Kenya. This can spark further research and refine our understanding of these complex dynamics. Since the research has addressed specific concerns, focusing on the four macroeconomic variables directly addressing pressing concerns regarding their impact on the Kenyan banking sector. The findings will offer actionable insights for mitigating potential risks and optimizing banks' performances.

Commercial banks serve as the lifeblood of any dynamic economy, channeling funds and fueling growth. Understanding the factors influencing their performance is important for assessing the overall health and stability of the Kenyan financial system.

1.9 Limitations of the Study

Although this research aimed to provide a valuable understanding of how macroeconomic variables relate to the financial performance of commercial banks, several limitations were anticipated during the study. Analyzing data from a specific timeframe was expected not to capture the full dynamics of the effects of macroeconomic variables and financial bank performance. For example, events outside this period like the global crisis of the year 2008 were anticipated to influence the observed patterns. This study focused on four macroeconomic

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variables that provide a strong foundation; other relevant factors may influence bank performance, such as competition, bank-specific characteristics, and regulatory changes. This study cannot account for all these influences, potentially overlooking their impact. This limitation was mitigated by selecting a broad timeframe and focusing on well-established macroeconomic variables, while acknowledging the potential influence of unexamined factors like competition and regulatory changes, which were noted for future research.

While the research aimed to capture real-world dynamics, the controlled environment of an academic study may not fully replicate the complexities of the Kenyan banking sector. This limitation underlines the importance of further research that incorporates real-world data analysis in the form of case studies or practical applications. This limitation was mitigated by incorporating secondary data from credible financial reports and industry analyses to enhance the study's real-world relevance, while acknowledging the need for future case studies for deeper practical insights.

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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section presents discussion on the theoretical and empirical literature surrounding macroeconomic factors and their impact on the financial performance of commercial banks. By conducting a thorough review of existing research, the study aims to identify gaps, build upon previous findings, and avoid replicating work that has already been done by other researchers. This comprehensive review of the literature provides the foundation for the study's conceptual framework. The framework, in turn, guides the development of research hypotheses and the design of a rigorous methodology.

2.1 Theoretical Framework

There are three theories that clearly brings out the variables under this study: Economic Theory, Inflation Rate Uncertainty Theory, and Financial Intermediation Theory. Economic Theory relates to GDP growth, unemployment, and inflation rate, providing light into how these variables affects the financial performance of commercial banks. Inflation Rate Uncertainty Theory pertains to interest rates, GDP growth, and unemployment, highlighting the impact of inflation rate unpredictability on economic activity and banking stability. Financial Intermediation Theory connects to interest rates, GDP growth, and unemployment, explaining the critical role of financial institutions in managing funds, reducing risks, and fostering economic development. These theories collectively offer a framework for analyzing the complex dynamics affecting commercial banks' financial outcomes.

2.1.1 Economic Theory

Economic Theory was developed by Ricardo (1988). Economic theory states that changes in macroeconomic variables, such as interest rates, inflation, and GDP, have a direct impact on the financial performance of institutions like commercial banks by influencing lending behavior, investment decisions, and overall market stability. This theory has various perspectives aiming to elucidate the drivers of long-term economic expansion. Classical growth theory, rooted in the works of economists like Adam Smith and David Ricardo, highlights the importance of capital accumulation, labor force growth, and technological advancements. Neoclassical growth theory,

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pioneered by Robert Solow, introduces the concept of diminishing returns to capital and emphasizes technological progress as a key driver of sustained economic development. Economists like Paul Romer and Robert Lucas flipped the script on how economies grow. Their endogenous growth theory proposes that instead of relying on outside forces for technological advancement, a country can fuel its own long-term progress by investing in things like education and research and development. Economic growth theories, encompassing neoclassical and endogenous perspectives, provide insightful frameworks for understanding the intricate relationships among interest rates, GDP growth, unemployment, inflation rate, and their collective impact on the financial performance of commercial banks. Neoclassical theories, which emphasize technological progress and capital accumulation, are particularly relevant to the study as they enable commercial banks to anticipate and strategically respond to changes in interest rates, thereby optimizing their lending and investment strategies (Nzioka, 2012). This understanding is pivotal for banks operating in dynamic economic environments, enhancing their adaptability to interest rate fluctuations and influencing their overall financial performance.

In the context of GDP growth, classical and neoclassical models underscore the connection between economic expansion and heightened demand for financial services, improved credit quality, and increased profitability for commercial banks (Sarah, 2016). This study, rooted in economic growth theories, holds significant relevance for banks aiming to align their operations with broader economic trends. Additionally, the study's exploration of the relationship between unemployment and credit risk, guided by insights from endogenous growth theories, aids banks in evaluating risks associated with changes in employment rates. Understanding how these forces work together is critical for commercial banks, contributing to informed decision-making and risk management strategies that can safeguard their financial performance.

Moreover, economic growth theories play a crucial role in guiding commercial banks' strategies for mitigating the effects of inflation rate (Klink, 2019). By comprehending how inflation rate is linked to technological progress and overall economic development, banks can formulate proactive measures to navigate interest rate fluctuations, asset value changes, and purchasing power shifts. This study, rooted in economic growth theories, empowers commercial banks to anticipate and adapt to the multifaceted challenges posed by inflation rate, thereby contributing

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to the resilience and optimization of their financial performance within a dynamic economic landscape.

2.1.2 Inflation rate Uncertainty Theory

The Inflation Rate Uncertainty Theory was first developed by Fischer (2007). Inflation Rate Uncertainty Theory states that higher uncertainty about future inflation rates can distort decision-making for both borrowers and lenders, leading to decreased investment and lending activities. This uncertainty raises the risk premium required by lenders, potentially slowing down economic growth and negatively impacting financial performance. This theory provides a macroeconomic framework to examine the repercussions of uncertainty surrounding future inflation rates on economic agents and financial markets. This theory, widely recognized as a cornerstone in macroeconomic analysis, has been further developed by subsequent researchers, including Michael (2018). It posits that heightened uncertainty about inflation rate can prompt cautious decision-making by individuals and businesses, leading to delayed investments, reduced economic activity, and overall diminished economic growth. The impact extends to financial markets, influencing interest rates and asset demands. Central to this theory is the recognition that managing and minimizing uncertainty about future inflation rate is pivotal for effective monetary policy. Clear and transparent communication by central banks regarding inflation rate targets and policy intentions plays a crucial role in alleviating uncertainty, fostering predictability in economic behavior, and contributing to stable financial markets.

The applicability of the Inflation Rate Uncertainty Theory holds significant implications for several key economic factors that collectively govern the financial performance of commercial banks. Firstly, it impacts interest rates, as heightened uncertainty about future inflation rate can result to lenders demanding higher interest rates to offset perceived risks. For commercial banks, this dynamic is crucial, as fluctuations in interest rates directly influence their net interest margin, affecting both profitability and the cost of borrowing for customers.

Moreover, the theory has relevance for GDP growth, as increased uncertainty can result in cautious spending and investment behavior among businesses and consumers. A climate of caution could lead to a slowdown in economic activity, potentially affecting loan demand, credit quality, and the overall performance of commercial banks' lending portfolios. Additionally, the relationship between inflation rate uncertainty and unemployment is intricate. While heightened

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uncertainty may contribute to economic volatility that influences employment levels, changes in unemployment are critical determinants of credit risk for commercial banks, potentially leading to increased defaults on loans.

Furthermore, inflation rate uncertainty theory is inherently linked to inflation rate itself. Understanding the dynamics of inflation rate uncertainty and its relationship with inflation rate rates is essential for commercial banks in shaping strategies, particularly in setting interest rates and managing inflation rate-related risks. In essence, the collective impact of inflation rate uncertainty on interest rates, GDP growth, and unemployment ultimately shapes the overall financial performance of commercial banks. Navigating these interconnected dynamics is vital for banks to optimize their financial outcomes in an environment characterized by inflation rate uncertainty.

2.1.3 Financial Intermediation Theory

Developed by Diamond Dybvig, in 1983, financial intermediation theory, a framework in economics, examines the pivotal role of financial institutions as intermediaries in facilitating the flow of funds between savers and borrowers. Central to this theory is the concept of maturity transformation, where financial intermediaries accept deposits from savers as short-term and convert them into long-term loans for borrowers, addressing the maturity preferences misalignment. Additionally, financial intermediaries contribute significantly to risk reduction by diversifying portfolios and conducting thorough credit assessments, enhancing overall financial stability. The theory acknowledges the information advantage held by financial institutions, allowing them to navigate information asymmetry and make informed lending decisions, thereby optimizing the allocation of capital in the economy. In essence, financial intermediation theory provides insights into how financial institutions play a crucial role in efficiently channeling funds, managing risk, and fostering a stable financial system.

Financial intermediation theory serves as a cornerstone in understanding how various economic factors collectively wield influence over the financial performance of commercial banks. A pivotal facet lies on its impact on interest rates (Nzioka, 2012). As financial intermediaries deftly transform short-term deposits into longer-term loans, they wield significant influence over the overall cost of borrowing. This strategic process, when executed with efficiency, not only

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contributes to maintaining stable interest rates but also directly shapes the net interest margin and, consequently, the profitability landscape for commercial banks.

Furthermore, the theory's connection to GDP growth accentuates the pivotal role played by financial intermediaries in the broader economic landscape (Sam, 2018). These institutions, acting as conduits for channeling savings into productive investments, become catalysts for economic expansion. Beyond merely contributing to GDP growth, their role significantly influences the demand for banking services, thereby intricately shaping the overall Financial Performance trajectory of Commercial Banks within the economic ecosystem.

In the context of unemployment, financial intermediation theory underscores the potential positive impacts of judicious fund allocation. Effective intermediation not only facilitates economic growth but also serves as a driver of job creation. Conversely, disruptions in the financial intermediation process, such as credit market frictions, possess the potential to impede economic growth, thereby influencing unemployment levels and subsequently exerting an impact on the Financial Performance dynamics of Commercial Banks.

Moreover, this theory assumes a crucial role in managing challenges associated with inflation rate (Klink, 2019). Financial intermediaries, through their sway over interest rates and also the cost of funds, become instrumental in enhancing the adaptability of commercial banks to inflation rateary pressures. This adaptability is not merely a strategic advantage but a requisite for banks aiming to maintain their financial performance amid the ebbs and flows of changing economic conditions.

In synthesis, financial intermediation theory illuminates the central and strategic role that banks play in efficiently channeling funds, deftly managing risks, and contributing to the vibrancy of economic activities. Its implications resonate across interest rates, GDP growth, unemployment, and inflation rate among others, collectively sculpting the Financial Performance landscape of Commercial Banks within the intricate tapestry of the broader economic environment. This theory focuses on making sure money flows smoothly between people and businesses. This helps strengthen the banking system, making it more stable and able to handle changes in the economy.

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2.2 Empirical Review

The empirical section investigates a review of relevant studies concerning the topic at hand. It aims to provide insights gleaned from existing research and identify areas where further investigation is warranted. By analyzing previous studies, We can achieve a more profound grasp of the topic at hand and highlight gaps in knowledge that may warrant attention in future research.

2.2.1 Interest Rates and Financial Performance

Interest rates refer to the cost of borrowing money or the return on investment for holding or lending funds (Gituto, 2019). An interest rate is basically a fee. It's a percentage of the amount borrowed (the principal) that either a lender charges a borrower for borrowing money, or a bank pays a saver for depositing money. These rates are important throughout the financial system and affect borrowing, lending, saving, and the overall health of the economy. Central banks can set these rates, or market forces can influence them. They impact things like loans, bonds, and savings accounts. Interest rates are a major tool that governments use to control inflation rate, economic growth, and keep the financial system stable.

Bank rates give a reflective guidance on the Financial Performance of Commercial Banks, permeating various facets of their operations (Ali, 2020). A critical measure impacted by interest rates is the Net Interest Margin (NIM), representing the difference between interest income earned and interest paid. In a rising interest rate environment, banks m ay grapple with increased costs of funds, potentially compressing the NIM and affecting overall profitability. Conversely, falling interest rates may squeeze the NIM as banks face challenges in maintaining interest income levels.

The income generated from loans, a significant revenue stream for commercial banks, is linked to interest rates (Baffour, 2018). Changes in interest rates directly impact interest income on existing loans and influence the demand for new lending activities. In a rising interest rate scenario, banks may see higher interest income on variable-rate loans but may also contend with increased loan defaults and reduced loan demand. Conversely, in a declining interest rate environment, challenges in sustaining interest income levels may arise.

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Interest rates play aa important role in shaping the credit risk that is associated with a bank's loan portfolio (Aguayo, 2018). Rising interest rates may heighten challenges for borrowers while servicing their loans, potentially increasing default rates and impacting overall asset quality. Conversely, falling interest rates may alleviate credit risk but could introduce competition for loans, potentially altering the risk-return profile of the loan portfolio.

Commercial Banks often hold securities in their portfolios, and interest rate movements influence the market value of these securities (Igan, 2018). If interest rates are going up, the price of fixed-rate securities will tend to go down. potentially resulting in losses. Conversely, falling interest rates may yield capital gains on fixed-rate securities. The valuation of these securities contributes highly to the whole financial health and performance of the bank.

Interest rates influence the cost of attracting and maintaining deposits, a crucial funding source for banks. In a rising interest rate environment, banks may grapple with higher deposit costs as rates increase. Effectively managing deposit costs is influencial for maintaining funding stability and optimizing the overall cost of funds. Conversely, falling interest rates may reduce deposit costs but could impact the attractiveness of certain deposit products.

The collective impact of interest rate movements on income and expense components ultimately shapes the net income of Commercial Banks (Amstrong, 2017) This net income, in turn, plays a pivotal role in influencing shareholder value. Fluctuations in interest rates can also lead to corresponding changes in the market value of bank stocks, impacting shareholder wealth and contributing to the overall Financial Performance of the institution. Navigating the complexities associated with interest rate movements is indispensable for banks, allowing them to adeptly respond to the dynamic financial landscape and optimize their performance across various economic scenarios.

Several studies have researched on the significance of interest rates in bolstering the financial performance of commercial bank systems. One study, for example, looked at how fluctuations in interest rates affected commercial bank profits. Research, by Linger et al. (2018), found a strong negative relationship. In other words**,** banks were less profitable when interest rates changed more frequently**.** During periods of heightened volatility, banks experienced challenges in managing their interest rate risk, leading to reduced net interest margins and overall lower profitability. While the study provided insights into the impact of interest rate volatility, further

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research was needed to explore specific risk mitigation strategies employed by successful banks during periods of heightened volatility.

Al-Qaysi et al. (2020) conducted a study focusing on commercial banks in the United Arab Emirates, employing a qualitative research approach to examine the connection between interest rate sensitivity and the quality of Commercial Bank loan portfolios. The study revealed that banks with a high degree of interest rate sensitivity tended to experience greater fluctuations in loan portfolio quality during periods of interest rate changes. While lower interest rates stimulated loan demand, they also raised concerns about the potential increase in default risk. While the study identified the impact of interest rate sensitivity on loan portfolio quality, there is a need to conduct a similar study it with quantitative approach to establish the quantitative.

2.2.2 Gross Domestic Product and Financial Performance

Gross Domestic Product, or GDP, is a key metric in macroeconomics. It measures the total value of final goods and services produced in a country over a defined period, usually a year. (Amstrong, 2017). Its primary function is to assess the whole economic performance and size of an economy. In the realm of commercial banks and their financial performance, GDP does not directly measure individual success or profitability. Nonetheless, banks performance is intricately linked to the broader economic conditions reflected in the GDP.

The financial performance of commercial banks is significantly influenced by the growth of Gross Domestic Product (GDP) in various ways (Gong, 2019). Positive impacts are observed during periods of robust GDP growth as businesses expand, and individuals seek loans for diverse purposes, stimulating higher demand for loans. This increased economic activity contributes to the expansion of commercial banks' loan portfolios, generating additional interest income. Conversely, economic downturns may lead to reduced loan demand and an elevated risk of loan defaults, impacting the quality of banks' loan portfolios negatively.

Furthermore, the relationship between GDP growth and interest rates plays a crucial role (Igan, 2018). Strong GDP growth may prompt central banks to raise interest rates to control inflation rate, benefiting Commercial Banks by increasing the interest income earned on loans. Conversely, during economic slowdowns, central banks may lower interest rates to stimulate economic activity, potentially compressing the net interest margin for banks and affecting profitability. Credit risk and asset quality are also affected by GDP growth. A growing economy

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generally improves the creditworthiness of borrowers, contributing to better asset quality for banks. In contrast, economic contractions can elevate credit risk, leading to an increase in non-performing loans and negatively impacting the asset quality of commercial banks.

Moreover, GDP growth influences investment opportunities for commercial banks. A thriving economy presents favorable conditions for profitable investments in various financial instruments and securities (López, 2019). Economic uncertainties or contractions, however, may limit investment opportunities, exposing banks to potential losses on their investment portfolios. The regulatory environment is another factor affected by GDP growth. Governments may adopt pro-growth policies during periods of economic strength, creating a favorable regulatory environment for commercial banks. Conversely, economic challenges may lead to regulatory changes aimed at stabilizing the financial system, imposing additional constraints or requirements on banks.

Empirical review on GDP growth in the financial performance of commercial banks have illustrated a variation of influences to the banking financial performance. One study published in the Journal of Banking Management by (Chen, 2020) on "Dynamic Markets and Banking Resilience" pointed out the relationship between GDP growth and financial performance of banks. The objective was to investigate the impact of volatility in GDP growth rates on the financial resilience of banks operating in dynamic markets. The methodology involved analyzing financial data from banks across different regions during periods of varying GDP growth rates in developed economies. The study assessed the banks' ability to withstand economic fluctuations, focusing on key financial indicators such as capital adequacy, liquidity, and asset quality. The findings suggested that banks in regions with more stable GDP growth demonstrated higher financial resilience, while those in volatile markets faced greater challenges in maintaining stability. A research gap identified in the study's area of research highlighted the need for analysis of banks in developing economies. The rationale for this gap was that the GDP growth of a developed economy could not perform at par with that of a developing economy.

Another study published in the International Journal of Banking and Economics evaluated the effectiveness of GDP growth on banking performance (Munoz, 2018). The study used a mixed-methods approach, combining interviews with the top banking management and observations of the GDP growth trends. The findings suggested that banks in regions with more stable GDP

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growth demonstrated higher financial resilience, while those in volatile markets faced greater challenges in maintaining stability leaving a gap in understanding the quantitative aspect of the GDP growth on the financial performance of banks.

2.2.3 Unemployment and Financial Performance

The unemployment, a macroeconomic indicator reflecting the proportion of the labor force actively seeking employment but unable to secure jobs, holds significant implications for the financial performance of commercial banks (Gituto, 2019). High levels of unemployment among potential consumers can lead to increased financial stress among borrowers, elevating the risk of loan defaults and impacting the quality of the bank's loan portfolio (Hosseini, 2018). Empirical studies have shed light on the multifaceted relationship between unemployment and banking resilience, emphasizing the importance of assessing customers' capacity to pay loans based on their employment status (Hosseini, 2018). Research methodologies typically involve the analysis of fictional data from banks across diverse regions during periods of varying unemployment, aiming to evaluate how fluctuations in unemployment affect loan default rates, deposit stability, and overall profitability metrics for commercial banks.

Moreover, during periods of heightened unemployment, individuals may exhibit a reduced inclination to take on new loans due to uncertainties about future income (Hosseini, 2018). This diminished loan demand directly impacts the interest income generated by the bank, affecting revenue generation and profitability. Unemployment-induced uncertainty can prompt customers to withdraw deposits or shift funds to more liquid assets, challenging the bank's liquidity position and necessitating adjustments in liquidity management strategies (Hu, 2019). Furthermore, reduced consumer spending resulting from unemployment can impact transaction volumes and fee-based income for the bank, affecting revenue diversification and profitability.

Unemployment also contributes to a decline in property values and collateral assets, impacting the value of assets held by the bank (Hu, 2019). This decline in collateral values increases credit risk, potentially leading to losses and affecting the overall asset quality of the bank. On the regulatory front, heightened unemployment often necessitates more stringent risk management practices and regulatory compliance measures (Kyalo, 2017). Research exploring the impact of unemployment on regulatory compliance and risk management practices highlights increased

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regulatory scrutiny, necessitating additional risk mitigation measures and impacting operational costs for banks (Bao, 2016).

The impact of the unemployment on the financial performance of commercial banks is complex and multifaceted. Studies assessing this relationship emphasize the need for a nuanced understanding of how unemployment influences loan default rates, deposit stability, profitability metrics, regulatory compliance, and risk management practices. Further research is needed to explore specific loan categories' responses to varying unemployment and the psychological aspects of customer behavior during economic uncertainty caused by high unemployment, providing valuable insights for banks in tailoring their strategies to customer needs.

2.2.4 Inflation and Financial Performance

Inflation rate in the performance of commercial banks refers to the sustained increase in the general price level of goods and services, impacting various aspects of banking operations (Boussalis, 2017). As inflation rate leads to higher interest rates set by central banks, commercial banks can charge elevated interest rates on loans, potentially increasing interest income and positively affecting the Net Interest Margin (NIM), a key profitability indicator. However, inflation rate also influences loan demand, with borrowers seeking loans to hedge against future price increases, albeit posing credit risks if repayments falter (Amstrong, 2017). Moreover, inflation rate prompts depositors to seek higher-yielding investments, challenging banks in retaining or attracting deposits and potentially compressing the NIM due to increased funding costs. Additionally, inflation rate affects the valuation of securities in banks' investment portfolios, potentially leading to losses. Regulatory authorities may adjust capital adequacy requirements in response to inflation rate, impacting banks' cost of capital and profitability. Hence, managing inflation rate-related risks is crucial for banks to ensure profitability, asset quality, and regulatory compliance amidst dynamic economic conditions.

Inflation rate, as a macroeconomic phenomenon, exerts substantial influence on the financial performance of commercial banks (Bakare, 2021). It impacts interest income and (NIM). Typically, inflation rate prompts central banks to raise interest rates to curb rising prices. Consequently, commercial banks can charge higher interest rates on loans, leading to increased interest income. This rise in interest income can positively affect profitability, especially if it

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outpaces the increase in interest expenses, thereby widening the Net Interest Margin (NIM), a key measure of bank profitability.

In addition, inflation rate influence loan demand and asset quality. During periods of high inflation rate, individuals and businesses may seek loans to hedge against future price increases, driving up loan demand (Kimberly, 2020). While increased loan demand boosts interest income, it may also elevate credit risk if borrowers struggle to repay loans in an inflation rateary environment. Thus, commercial banks must assess creditworthiness and monitor loan portfolios to mitigate the risk of defaults and non-performing loans.

Moreover, inflation rate affects deposits and funding costs. As inflation rate erodes the purchasing power of money, individuals may seek higher-yielding investments to offset the loss in real value (John, 2018). This shift can lead to challenges for commercial banks in retaining or attracting deposits, especially if interest rates on deposits fail to keep pace with inflation rate. Additionally, higher competition for deposits can raise funding costs, potentially compressing the NIM and impacting profitability.

Additionally, inflation rate impacts the valuation of securities held in a bank's investment portfolio. Bonds and fixed-income securities may experience declines in value as interest rates rise to combat inflation rate (Kimberly, 2020). Consequently, commercial banks may incur losses on the sale of securities or face mark-to-market losses on their investment portfolio. However, holding inflation rate-protected securities may provide a hedge against inflation rateary pressures.

Lastly, inflation rate influences regulatory considerations and capital adequacy. Regulatory authorities may adjust capital adequacy requirements in response to inflation rateary pressures to maintain financial stability (Kimberly, 2020). This may necessitate banks to hold additional capital to cover potential losses stemming from inflation rate-related risks, increasing the cost of capital and potentially impacting profitability. Moreover, banks may need to adapt risk management practices to account for inflation rate-related risks in their operations.

A study by Kim et al. (2017) explored the influence of Temporal Inflation rate (TI) on the financial performance of banks, with specific mechanisms through which TI affects loan quality, deposit behavior, and liquidity management within banks. The findings revealed that while temporal inflation rate introduced volatility and uncertainty, strategic management practices

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could mitigate adverse effects and even capitalize on temporal arbitrage opportunities. Specifically, the study found that banks experienced fluctuations in asset values and interest rates in response to temporal inflation rate, but those with agile risk management strategies were able to navigate these challenges more effectively, sometimes even profiting from temporal discrepancies in asset values (Igan, 2018). The results of the study may not apply to the context of the developing countries as the studied banks had robust risk management strategies which the banks in developing economies often do not have.

Another study by Valentina (2018) examined the adaptability of banks to temporal inflation rate shocks. The study highlighted the importance of adaptive strategies and robust risk management frameworks for commercial banks in mitigating temporal inflation rate risks. There is however a need for more granular analysis into the specific risk management practices employed by banks, especially in the developing nation realm.

2.2.5 Macroeconomic Factors, Bank Size and Financial Performance

Bank size refers to the measure of a bank's total assets, deposits, loans, or any other financial metrics that signify the scale and magnitude of its operations within the financial system (Chen, 2020). Typically, it encompasses various quantitative indicators such as total assets, equity, deposits, loans, and number of branches. Bank size provides insight into the scope and reach of a financial institution, indicating its capacity to conduct lending activities, manage deposits, and offer a range of financial services. It serves as a key metric for evaluating a bank's market presence, influence, and systemic importance within the banking sector (López, 2019). Additionally, bank size is often used in comparative analyses, regulatory assessments, and risk management evaluations to understand the scale of operations and potential impact on the broader financial system.

The size of a bank plays a pivotal role in moderating the relationship between macroeconomic variables and the financial performance of commercial banks (Hosseini, 2018). Primarily, larger banks leverage economies of scale to their advantage by distributing fixed costs over a broader asset base. This strategic maneuver enables them to capitalize on economic upswings, experiencing heightened profitability through expanded lending activities and increased revenue streams from fee-based services (Munoz, 2018). Conversely, during economic downturns, smaller banks often find themselves grappling with the challenge of covering fixed costs, while

their larger counterparts with more diversified portfolios are better equipped to navigate the turbulent financial landscape.

Furthermore, the expansive diversification of larger banks' portfolios across various sectors and geographic regions acts as a robust shield against localized economic shocks (Daron, 2019). For instance, while smaller banks may face significant losses due to overexposure to struggling industries in specific regions, larger banks with broader diversification are better positioned to absorb such blows. Additionally, the substantial size of these institutions affords them easier access to diverse funding sources, including capital markets and interbank lending, facilitating more agile liquidity management, particularly during periods of economic uncertainty and market volatility (Newton, 2017).

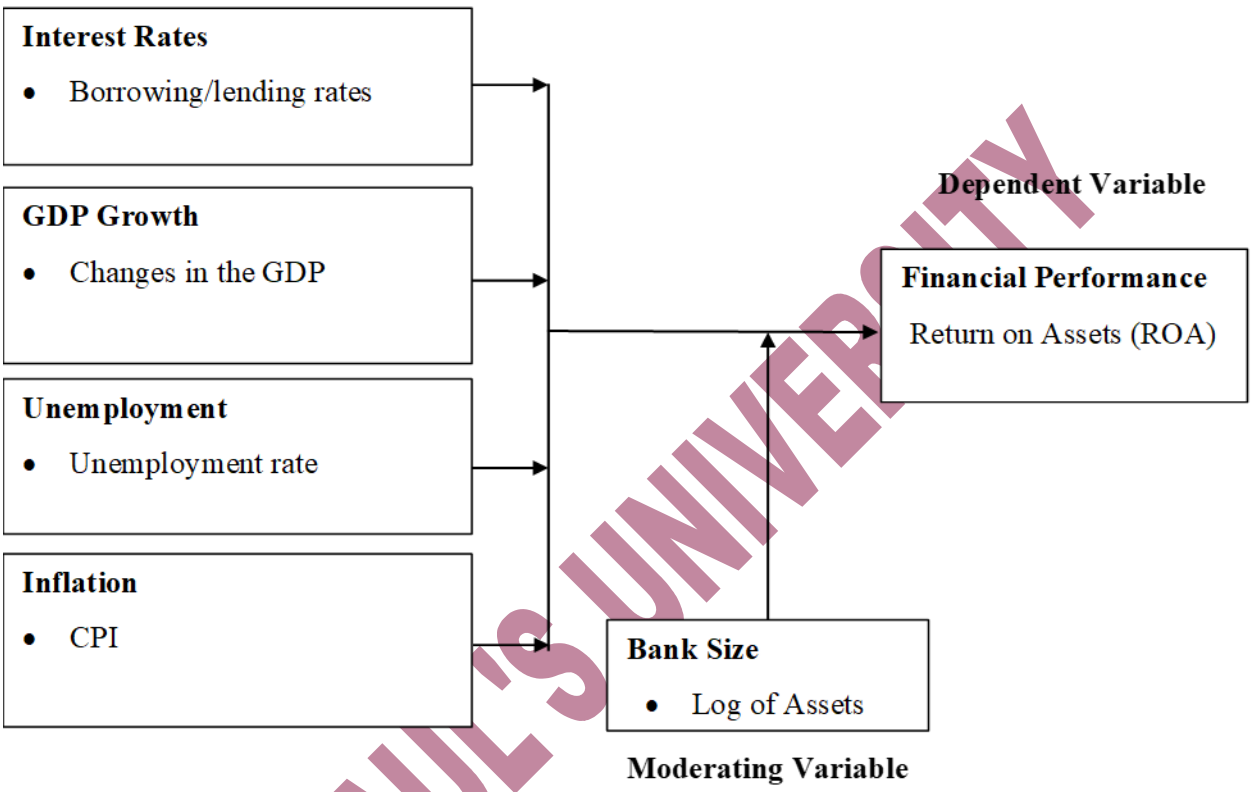
Regulatory dynamics also come into play, with larger banks subject to more stringent scrutiny and higher capital reserve requirements (Hosseini, 2018). Although these regulatory constraints may potentially limit short-term profitability, they undeniably bolster the overall stability and resilience of larger banks, especially during economic downturns. Moreover, the formidable market power employed by larger banks empowers them to negotiate more favorable terms with borrowers and suppliers, thereby bolstering their financial performance, particularly amidst robust economic expansion and heightened lending activity.

Furthermore, the sophisticated risk management frameworks inherent to larger banks play a pivotal role in identifying and mitigating risks effectively (Kimberly, 2020). This strategic advantage not only safeguards against potential threats but also enhances the ability of larger banks to navigate through challenging economic conditions with minimal disruptions to their financial performance. In essence, while larger banks undoubtedly benefit from economies of scale and extensive diversification, the intricacies of their financial performance remain intricately attached with prevailing macroeconomic variables, albeit moderated by their size and operational prowess.

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2.3 Conceptual Framework

Figure 2.1: Conceptual Framework



Source: Researcher (2024)

Figure 1 presents a conceptual framework that explores how various macroeconomic factors influence the financial performance of Kenyan commercial banks. The study examines interest rates, GDP growth, unemployment, and inflation rate as independent variables. Bank size acts as a moderating variable, potentially affecting the relationship between the independent and dependent variables. The dependent variable itself is the successful financial performance of commercial banks.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers design used for the study, sampling design and techniques, sample size, data collection technique, data analysis and presentation, ethical considerations, and expected outcomes.

3.2 Research Design

It is a structured framework or blueprint for conducting a research study (Sam, 2018). It outlines the procedures for collecting, analyzing, and interpreting data. This study will utilize a panel data approach to quantitative analysis, drawing from secondary data sourced from credible institutions for the years 2012 to 2022. This study examines how financial performance of Kenyan commercial banks is connected to both their size and the broader economic climate. To achieve this, reliable data was gathered from trusted sources: The Central Bank of Kenya (CBK) for interest rates and bank size figures, and the Kenya National Bureau of Statistics (KNBS) for factors like unemployment, economic growth, and inflation rate. By using established data from these respected institutions, the analysis is guaranteed to be accurate and well-founded. The main goal is to uncover how these economic trends influence the profitability of Kenyan commercial banks.

3.3 Target Population

The target population comprised all the registered 42 commercial banks that were operational in Kenya between the years 2013 and 2022. Within this population, 24 banks were domestically owned, indicating that their controlling shareholders are residents of Kenya. These locally owned banks likely operate within a unique set of regulatory, economic, and cultural contexts, potentially influencing their strategies, risk management practices, and market behavior. Additionally, 15 banks were foreign-owned, suggesting a different set of influences stemming from their parent companies and global economic conditions.

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3.4 Data Collection Instrument

Data collection involved extracting relevant macroeconomic indicators and financial performance metrics directly from reports published by bodies such as the Central Bank of Kenya. These reports served as the primary source of quantitative data on key economic variables such as GDP growth rates, inflation rate rates, interest rates, and Unemployment, as well as financial performance metrics of commercial banks including asset quality, liquidity ratios, and profitability indicators. Supplementary data was sourced from other reputable sources such as the Kenya National Bureau of Statistics, international organizations like the World Bank and the International Monetary Fund, as well as scholarly articles from reputable academic journals and reports from financial institutions.

3.5. Validity and Reliability of Data Collection Instrument

Reliability and validity is important to any research design, and an important consideration with secondary data is the extent to which it relates to the research question, in other words how reliably it can answer. Creswell and Creswell (2017) explain validity to be the degree in which obtained outcomes from the test of an instrument in fact denote the reality under research study. Validity additionally describes the degree to which a tool establishes what it purports to determine (Creswell & Creswell, 2017).

To ensure validity of the data in this study, the researcher only collected reliable data from the website of Central Bank of Kenya. Additionally, testing for validity of secondary data involved assessing the source, checking for consistency and completeness, verifying accuracy, and checking for bias. By taking these steps, the researcher ensured that the secondary data was valid and appropriate for the research question. Reliability of the instrument was determined by ensuring the data to be collected cover the time frame and variable in which this study was interested.

3.6 Data Collection Techniques

Data on interest rates was collected from the CBK financial reports for the years 2013 to 2022. Conversely, the national performance of each bank on other macroeconomic variables were obtained from individual published financial reports from each bank. The macroeconomic

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variables were also found from the Kenya Bureau of Statistics for the same period through authorized access.

3.7 Data Analysis

This study analyzed data from year 2013 to 2022. To achieve this, quantitative methods aligned with the research goals were used. Descriptive statistics like mean, standard deviation, and minimum, and maximum values was employed to summarize the data. These were presented visually using tables and graphs. Panel regression model was used to analyze the effcet of macroeconomic factors on financial performance of commercial banks in Kenya. The relationship will incorporate the moderating variable which is Bank Size (BS). The study employed a significance level of 5% to determine whether the alternative or null hypothesis are accepted. Regression model takes the following form and extends to include multiple independent variables:

$$Y = \beta_0 + \beta_1 IR_{it} + \beta_2 GD_{it} + \beta_3 UC_{it} + \beta_4 IF_{it} + \varepsilon$$

Where;

Y= Financial performance of commercial banks.

IR_{it}= Interest rate at time *t* for entity *i*.

GDP_{it}= GDP at time *t* for entity *i*.

UR_{it}= Unemployment at time *t* for entity *i*.

IF_{it} =Inflation rate at time *t* for entity *i*.

$\beta_1, \beta_2, \beta_3, \beta_4$ =Regression coefficients.

ε =Error term.

Moderating model

$$Y = \alpha + \beta_0 + \beta_1 IR + \beta_2 GD + \beta_3 UC + \beta_4 IF + \beta_{11} (IR_{it} BS_t) + \beta_{22} (GD_{it} BS_t) + \beta_{33} (UC_{it} BS_t) + \beta_{44} (IF_{it} BS_t) + u_{it} + \varepsilon_{i,t}$$

Y represents the dependent variable.

α is the intercept term.

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β_0 is the coefficient of the constant term.

IR, GD, UC, and *IF* are independent variables.

$IR_{¿}, GD_{¿}, UC_{¿}$,and $IF_{¿}$ are the values of the independent variables at time *t* for entity *i*.

BS_t Is the moderating variable (*BS*) at time *t*.

$\beta_{11}, \beta_{22}, \beta_{33} \wedge \beta_{44,}$,Are the coefficients of the interaction terms between the independent variables and the moderating variable.

$U_{¿}$ Represents the individual-specific error term.

$\epsilon_{i,t}$Represents the error term.

The moderating effect occurs when the effect of one independent variable on the dependent variable is dependent on the level of the moderating variable. In this model, the moderating variable is BS_t .

For instance:

β_{11} Measures how the effect of *IR,* on *Y* changes as *BS* changes.

β_{22} Measures how the effect of *GD* on *Y* changes as *BS* changes.

β_{33} Measures how the effect of *UR* on *Y* changes as *BS* changes.

β_{44} Measures how the effect of *IF* on *Y* changes as *BS* changes.

If these coefficients are statistically significant and positive, it suggests that the moderating variable strengthens the relationship between the independent variable and the dependent variable.

3.8 Diagnostic Tests

Diagnostic tests are crucial in regression analysis to assess the validity of the underlying assumptions and the appropriateness of the chosen model (Pesaran, 2021). They help ensure the accuracy, reliability, and robustness of regression results. The following diagnostic tests were conducted:

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3.8.1 Normality test

Linear regression assumes the errors (differences between predicted and actual values) follow a normal distribution, like a bell curve. The present study applied the Jarque-Bera test for normality as it is the best suited for panel data and has its basis on the skewness and kurtosis of the data (Shaik & Gulhane, 2023). The test compares the distribution of residuals to a normal distribution where a probability value of less than 0.05 ($p<0.05$) indicate departure from normality.

3.8.2 Multi-collinearity Test

In statistics, multicollinearity is a situation that arises when two or more independent variables in a regression model are strongly linked to each other (Shrestha, 2020). This can make it difficult to isolate the unique effect of each variable on the dependent variable. Variance Inflation rate Factor (VIF) values were calculated for each independent variable (Kyriazos & Poga, 2023). A VIF value greater than 10 typically indicates high multicollinearity. If multi-collinearity is detected, steps such as removing or combining correlated variables or using techniques like principal component analysis may be employed.

3.8.3 Heteroscedasticity Test

Heteroscedasticity describes a situation where the spread of errors (how much they vary from zero) isn't constant across different data points (Rosopa, Schaffer & Schroeder, 2013). To check for this, the study used the Breusch-Pagan test. Homoscedasticity refers to the constancy of error variance across all levels of the independent variables. In other words, the spread of the residuals should be roughly consistent across the range of predicted values.

3.8.4 Stationarity Test

Time series analysis relies heavily on stationarity. This means the data's statistical properties, like mean and variance, stay consistent over time (Loretan & Phillips, 1994). The study will utilize the Levin-Lin-Chu (LLC) test as a panel data stationarity detection approach to establish if the obtained panel data was stationarity (Tanaka, 2017). The null hypothesis of the LLC test is that each individual time series in the panel contains a unit root, that is, it is non-stationary, while the alternative hypothesis is that all series are stationary.

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3.8.5 Model specification Test

The model specification ensures that the selected model accurately represents the underlying relationships between variables (Greenland, 1989). This test will examine if the variables included in the model are appropriate and if the functional form of the model is correctly specified. The Panel data is analyzed using two heterogeneous models, which ordinarily assess the random effects or the fixed effects of the observed units (Bell & Jones, 2015). The study will utilize the Hausman test as a model specification test to determine whether to use a fixed effects model or a random effects model.

3.9 Ethical Considerations

To ensure proper usage, the research relied on secondary data sources. All data will be anonymized and handled according to ethical research standards to maintain confidentiality. Upon receiving permission, a letter will be obtained from the university to be presented to the National Commission for Science, Technology and Innovation (NACOSTI) for final approval.

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CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.0 Introduction

This chapter of the study focuses on data analysis, findings, and interpretation of results on the relationship between macroeconomic factors and financial performance of commercial banks in Kenya. Specifically, both descriptive and inferential statistics have been undertaken in this chapter as well as the diagnostic tests, which offer guidance on the required assumptions for panel regression analysis. Moreover, testing of the hypotheses based on the results of the statistical model as well as the discussion of the findings are conducted in this chapter of the study. Tables and graphs aided in the presentation of the study's findings.

4.1 Descriptive Analysis

The rationale of this study was to examine the relationship between macroeconomic factors and financial performance of commercial banks in Kenya. While the relationship between the predictor and response variables were carried out using panel regression, it was crucial to describe and summarize the collected secondary data using descriptive statistics, which included utilization of measures of dispersion, in particular the standard deviation, and the mean as a measure of central tendency. The minimum and maximum values of the data were presented to demonstrate, for example, commercial banks with the highest return on investment alongside those that recorded lowest financial performance.

The explanatory variables of the study included interest rate, GDP growth, unemployment, and inflation rate whereas financial performance was the outcome variable of this research work. Return on assets was adopted as the proxy measure for financial performance whereas inflation rate utilized consumer price index as its metric. Bank size, as an internal attribute in the banking sector, used log of risk weighted assets as a measurement to moderate the relationship between macroeconomic variables and financial performance of commercial banks in Kenya. The sub-sections below contain the descriptive statistics for each of the regressor, moderator, and response variables of the study.

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4.1.1 Financial Performance

The overall rationale for this study was to investigate the relationship between macroeconomic factors and financial performance of commercial banks in Kenya. In this study, Return on Assets, (ROA), was utilized as the measurement for financial performance. ROA is a financial ratio in the banking industry that measures profitability of banks relative to their assets, thus the metric offers insights into the efficiency with which commercial banks utilize assets to generate profits. Table 4.1 collates the banking industry's return on asset ratio across the period between 2013 and 2022.

Table 4.1: Return on Asset (ROA)

Year	Mean	Sd	Min	Max
2013	0.0292	0.0278	-0.0749	0.0766
2014	0.0249	0.0293	-0.0697	0.0789
2015	0.0224	0.0265	-0.0453	0.0656
2016	0.0159	0.0333	-0.0701	0.0600
2017	0.0121	0.0372	-0.1414	0.0649
2018	0.0140	0.0301	-0.0809	0.0659
2019	0.0045	0.0490	-0.1353	0.0740
2020	-0.0051	0.0400	-0.1406	0.0382
2021	0.0011	0.0405	-0.1293	0.0533
2022	0.0059	0.0306	-0.1389	0.0418
Total	**0.0125**	**0.0362**	**-0.1414**	**0.0789**

Source: Research Data (2024)

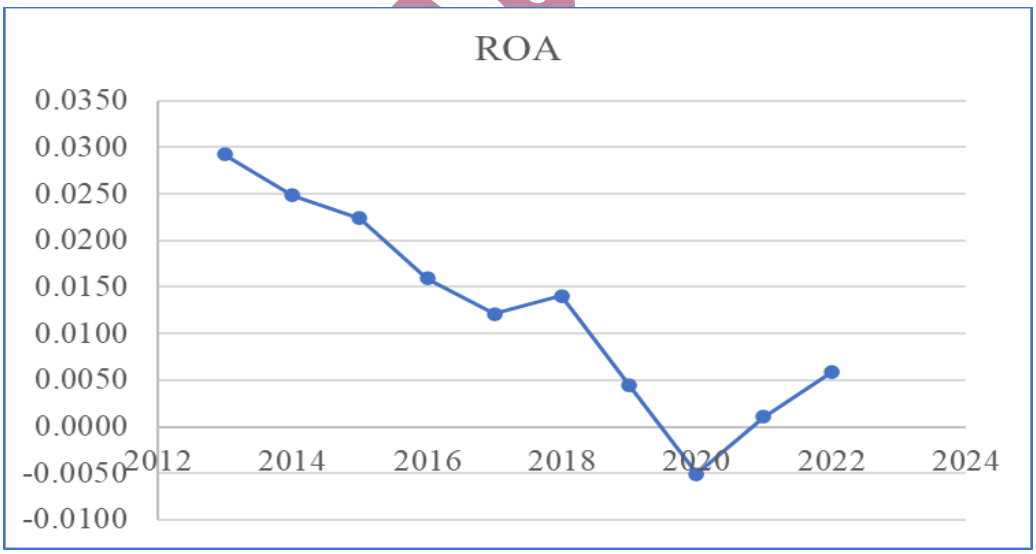
Based on the results of the study shown in table 4.1 above, return on assets in the banking industry was highest in 2013 where it stood at 3%, a ratio of 0.0292, after which the sector experienced back-to-back dip in profitability for the subsequent years for the period between 2014 and 2017, followed by a marginal increase in 2018. For the period covering 2019 through 2020, commercial banks exhibited a decreasing trend overtime in profitability recording the lowest mean of -0.0051 in the year 2020. Despite the declining financial performance, the Kenyan banking industry showed signs of resurgence for the years 2021 and 2022 where the average return on assets was 0.0011 and 0.0059 respectively. Even though the analyzed data revealed positive profitability for commercial banks in Kenya for the period 2013 through 2022, it is worth nothing that there are banks, which recorded negative performance as demonstrated by the negative minimum values. The overall standard deviation value of 0.0362 relative to the

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general mean of 0.0125 exemplify greater variability in profitability, signaling that there are banks that operated below the mean while others functioned above it.

The minimum negative profitability ratios of more than 10% for the years 2020 through 2022 espouse unsatisfactory performance for selected commercial banks in Kenya. In fact, evidence in form of the analyzed data indicate that there is a commercial bank in Kenya that recorded a negative return on assets of -0.1406 in the year 2020. The year 2020 was characterized by low profitability for the banking sector globally and this was mainly attributed to the COVID-19 pandemic, which, among other consequences, caused a rise in loan defaults. Country Central Banks implemented low-interest-rate policies to stimulate growth of their economies. In Kenya, CBK offered a moratorium on loan repayments for borrowers who had been impacted by the pandemic and provided banks with more liquidity. Figure 4.1 below provides a visualization to show the trend in profitability of commercial banks in Kenya for the period covering 2013 through 2022.

Figure 4.1: Return on Assets



Source: Research Data (2024)

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4.1.2 Interest Rate

The first objective of the study was to investigate the relationship between interest rates and the financial performance of commercial banks in Kenya. Within the context of the banking industry, interest rate denotes the cost of borrowing money from banks or the return on investments or savings that customers gain from such entities. The study took into consideration the percentage charged by Kenya's commercial banks to lend money to its borrowers. Interest rates charged by banks drive their profitability position whereby the rise of this macroeconomic variable means that they will earn more on loans while at the same time paying more on deposits (Kamweru, 2019). Table 4.2 below contains the average yearly interest rates among commercial banks.

Table 4.2: Interest Rate

Year	Mean	Sd	Min	Max
2013	17.31	0	17.31	17.31
2014	16.51	0	16.51	16.51
2015	16.16	0	16.16	16.16
2016	16.58	0	16.58	16.58
2017	13.67	0	13.67	13.67
2018	13.06	0	13.06	13.06
2019	12.44	0	12.44	12.44
2020	12.00	0	12.00	12.00
2021	12.08	0	12.08	12.08
2022	12.34	0	12.34	12.34
Total	**14.22**	**2.05**	**12.00**	**17.31**

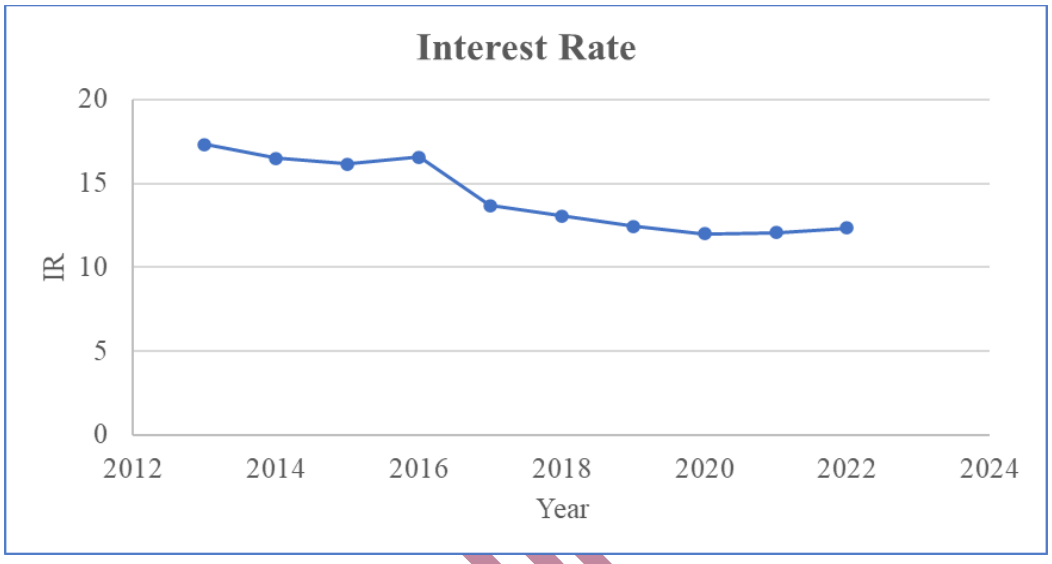
Source: Research Data (2024)

Findings of the study summarized in table 4.2 above indicate that the year 2013 recorded the highest average interest rate compared to other periods under study. Despite the higher interest rate of 17.31 in 2013, the industry experienced a decline in interest rate for two consecutive years (2014-15) after which there was a slight increase in 2016, followed by back-to-back decrease up to 2020. Interest rate capping was introduced in the year 2016 to reduce the cost of borrowing where banks were required to charge a maximum interest rate on loans. The years 2021 and 2022 were characterized by gradual increase in interest rate even though the growth was somewhat meagre. The overall mean of 14.22 and standard deviation of 2.05 is a sharp pointer to the fact that there were variations in interest rates charged by commercial banks, evidence further reinforced by the overall minimum value and maximum value of 12.00 and 17.31 respectively.

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Given that this variable of the study is a macroeconomic factor, the minimum and maximum values are similar across the banking sector for individual years across the period under consideration. Figure 4.2 shows interest rate patterns for the period considered in this research work.

Figure 4.2: Interest Rate



Source: Research Data (2024)

4.1.3 GDP Growth

The second objective of the study was to assess the relationship between GDP growth and financial performance of commercial banks in Kenya. In this sub-section, the study utilized descriptive summary to examine GDP growth in the Kenyan economy for the period covering 2013 through 2022. GDP refers to the sum of total monetary value of all final goods and services produced within borders of a country in a defined time, typically within a year (Felice, 2024). This macroeconomic construct measures the economic growth of countries wherein economic expansion or contraction is contributed by its positive and negative changes respectively (Hu & Yao, 2022).

Growth in gross domestic product creates opportunities for loan demand in commercial banks and helps to improve asset quality of these institutions because of the decreased default rate. Moreover, GDP growth implies that people and businesses have more disposable income that encourages savings and deposits in banks, which ultimately leads to improved funding base

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(Brunnermeier et al., 2021). Table 4.3 below summarizes the yearly GDP growth for the period between 2013 and 2022.

Table 4.3: GDP Growth

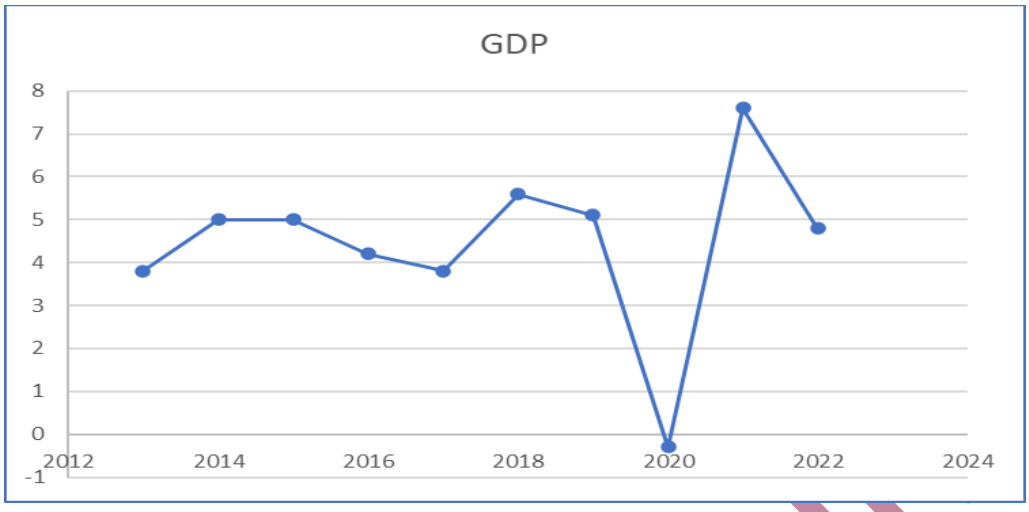
Year	Mean	Min	Max
2013	3.8	3.8	3.8
2014	5	5	5
2015	5	5	5
2016	4.2	4.2	4.2
2017	3.8	3.8	3.8
2018	5.6	5.6	5.6
2019	5.1	5.1	5.1
2020	-0.3	-0.3	-0.3
2021	7.6	7.6	7.6
2022	4.8	4.8	4.8
Total	**4.46**	**-0.3**	**7.6**

Source: Research Data (2024)

Table 4.3 above revealed that the overall mean of gross domestic product for the period between 2013 and 2022 stood at 4.46% with the highest being 7.6 in 2021. The sequence of growth rate indicate that GDP was lower in 2013 followed by an upsurge in 2014, a rate that remained uniform in the year 2015, after which it experienced a gradual decline in the year 2016 through 2017. GDP expanded rapidly in 2018 to reach the higher of 5.6% before a relatively small dip in 2019 (5.1%) and shrinking further to the lowest rate of -0.0003 in 2020. However, Kenya's economy grew sharply in 2021 to attain the highest rate of 7.6% after which it declined by a small margin in 2022. The graph below (figure 4.3) presents the trend in GDP growth in Kenya.

Figure 4.3: GDP Growth

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Source: Research Data (2024)

4.1.4 Unemployment

There is close association between high rate of unemployment and economic underperformance or recession where firms tend to cut down their workforce because of diminished demand for either service or goods, or both (Janoski, 2024). Accordingly, a rise in unemployment will lead to firms failing to meet their financial obligations and increased likelihood for loan defaults. The rate of unemployment for the period covering 2013 through 2022 is summarized in table 4.4 below.

Table 4.4: Unemployment

Year	Mean	Min	Max
2013	2.78	2.78	2.78
2014	2.78	2.78	2.78
2015	2.77	2.77	2.77
2016	2.76	2.76	2.76
2017	3.56	3.56	3.56
2018	4.3	4.3	4.3
2019	5.01	5.01	5.01
2020	5.63	5.63	5.63
2021	5.69	5.69	5.69
2022	5.64	5.64	5.64
Total	**4.092**	**2.76**	**5.69**

Source: Research Data (2024)

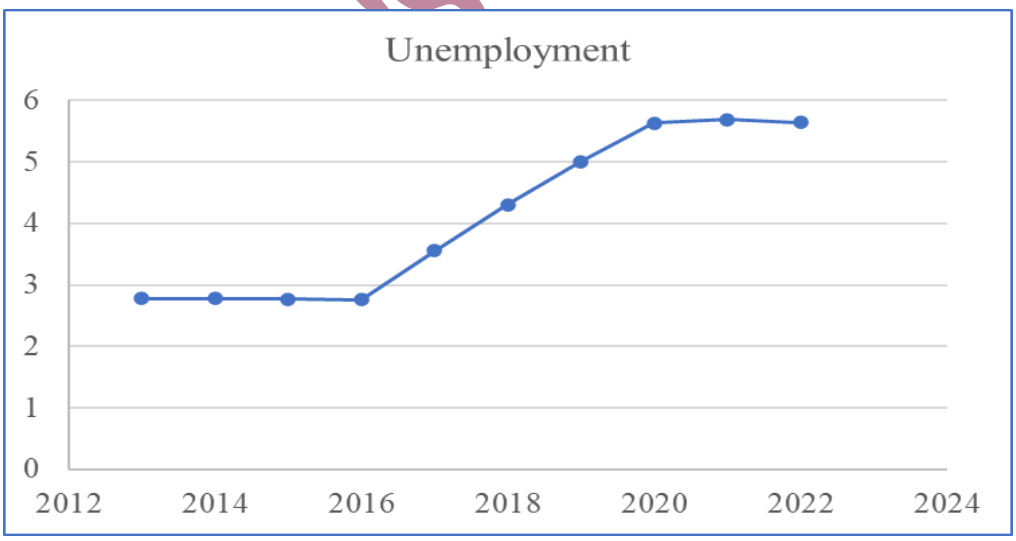
The results of this research work contained in table 4.4 above reveal that the rate of unemployment remained relatively stable and uniform for the period 2013 through 2016 where it

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averaged at about 2.7%. Nonetheless, evidence from the analysis of the collected data depict that the unemployment rose sharply from 2.76% in the year 2016 to the highest of 5.69% in 2021 thereafter easing slightly to 5.64% in 2022. The highest rate of unemployment of 5.69% in 2021 has further been supported by the corresponding similar overall maximum value.

Several factors have been attributed to the increasing rate of unemployment in Kenya after the year 2016, major among them being slowed down economic activity in the country contributed by prolonged droughts, which mainly reduce the agricultural outputs (Wepukhulu & Otieno, 2019). Moreover, the political uncertainty following the 2017 and 2022 general elections in the country acted as a catalyst for reduced economic stability and affected investor confidence. Ultimately, these factors caused a reduction in job creation, investments, and business activity. As visualized in figure 4.4 below, the rate of unemployment in Kenya was low and steady for the period 2013 through 2016, followed by an increase in the 2017, possibly because of the general election, and tipped to the highest in 2021 and 2022 perhaps on account of reduced job creation occasioned by the aftermath of Covid-19 pandemic (Coibion et al., 2020).

Figure 4.4: Unemployment



Source: Research Data (2024)

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4.1.5 Inflation

The study examined the impact of inflation rate on the financial performance of commercial banks in Kenya and produced descriptive summaries to show the average rate of this macroeconomic factor, after which modelling was carried out to determine the nature of the relationship between these variables. Table 4.5 below contains the mean, minimum, and maximum values for inflation rate, which appear to be of similar value the individual years.

Table 4.5: Inflation Rate

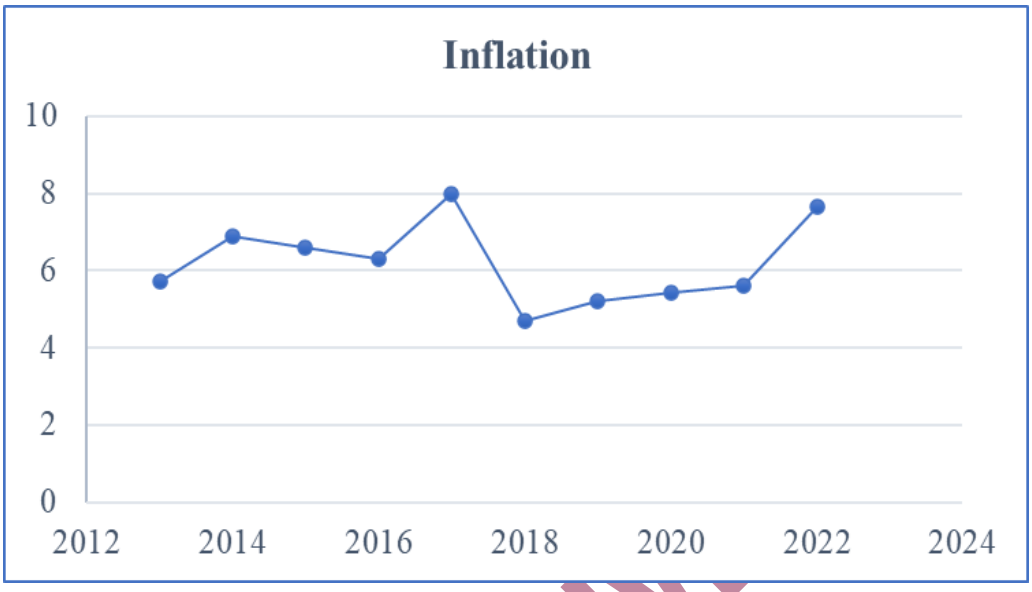
Year	Mean	Min	Max
2013	5.72	5.72	5.72
2014	6.88	6.88	6.88
2015	6.58	6.58	6.58
2016	6.3	6.3	6.3
2017	7.98	7.98	7.98
2018	4.69	4.69	4.69
2019	5.2	5.2	5.2
2020	5.41	5.41	5.41
2021	5.62	5.62	5.62
2022	7.66	7.66	7.66
Total	**6.204**	**4.69**	**7.98**

Source: Research Data (2024)

The outcome of the analyzed data indicated in table 4.5 above revealed that the rate of inflation rate has been varying above 4.5% and less than 8%. In fact, it appeared to fluctuate for the years 2013 through 2018 where it stood at 5.72%, 6.88%, 6.58, and 6.3% in 2013, 2014, 2015, and 2016 respectively before increasing rapidly to the highest of 7.98 in 2017. Nonetheless, inflation rate appeared to ease in 2018 after which it went up gradually for the successive period covering between 2019 and 2022. Results further depict that Kenya has experienced an average/mean inflation rate of 6.2% as evidenced by the total mean of 6.204 whereas the country's lowest and highest rate of inflation rate has been 4.69% and 7.98% respectively.

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Figure 4.5: Inflation Rate



Source: Research Data (2024)

4.1.6 Bank Size

The study examined the moderating effect of bank size on the relationship between macroeconomic variables and financial performance of commercial banks in Kenya Macroeconomic factors, as the concept suggests, are variables that commercial banks have no control over whereas bank-specific attributes, such as bank size, constitute internal banking characteristics and qualities that are unique and distinguish one financial institution to another. The concept of bank size has been operationalized and measured using different metrics, which typically include log total risk weighted assets, number of branches, number of employees, and total deposits. This study adopted the log of total risk weighted assets as the proxy measure for bank size. The descriptive statistics for this variable are contained in table 4.6.

Table 4.6: Bank Size

Year	Mean	Sd	Min	Max
2013	7.4022	0.7159	5.85	8.62
2014	7.4124	0.6407	5.93	8.53
2015	7.4784	0.6523	5.87	8.6
2016	7.3646	0.6363	6.16	8.63
2017	7.3705	0.6911	5.87	8.68

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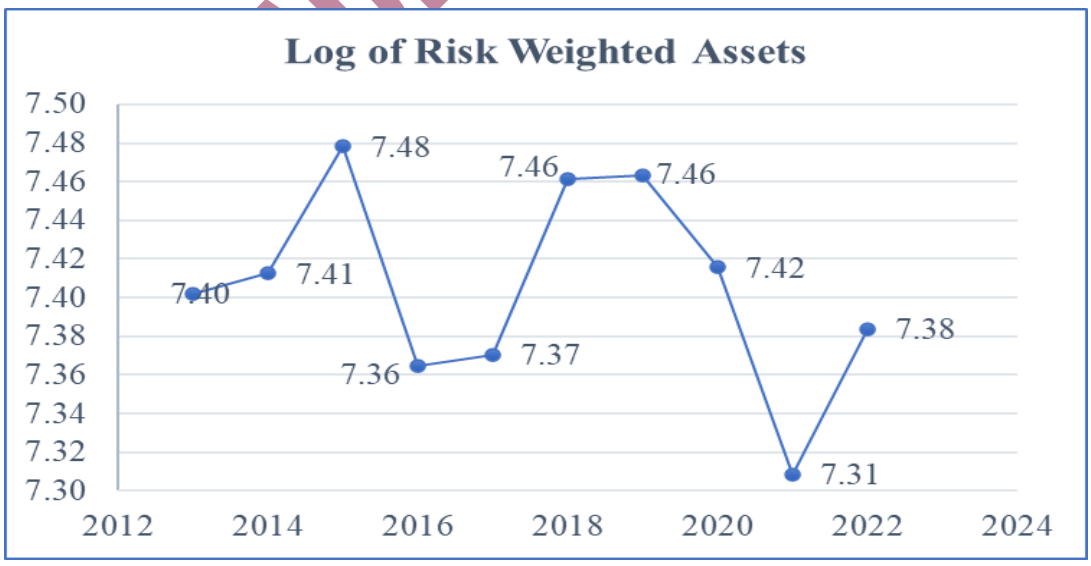
2018	7.4616	0.6399	6.46	8.73
2019	7.4630	0.6696	6.02	8.76
2020	7.4157	0.6971	6.22	8.72
2021	7.3086	0.6636	5.92	8.55
2022	7.3838	0.6965	5.84	8.57
Total	**7.4061**	**0.6645**	**5.84**	**8.76**

Source: Research Data (2024)

Figure 4.5: Inflation Rate

The total risk weighted assets for the entire Kenyan banking sector as transformed into natural logarithms show that they are almost similar in their values across the period under consideration where they range between 7.3 and 7.4 with extremely minimal variations. The graph captured in figure 4.6 should be interpreted with a lot of caution since it accentuates the differences in the distance between the decimal points of the yearly log of total risk weighted assets. The standard deviation value of 0.6645 exemplifies that majority of the commercial banks' total risk weighted assets as transformed into a natural logarithm was varied from the mean of 7.4061. To further substantiate this, the overall maximum value of 8.76 and the total minimum value of 5.84 is proof of variability in the total assets owned by commercial banks in Kenya when adjusted for their riskiness. Figure 4.6 shows trends in the log of total risk weighted assets of the Kenyan banking sector for the period 2013 through 2022.

Figure 4.6: Bank Size



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Source: Research Data (2024)

4.2 Diagnostics Tests

Diagnostic tests were undertaken in this study to verify the validity and reliability of the assumptions underlying panel regression analysis. Specifically, the tests helped to detect issues like multicollinearity, heteroscedasticity, normality, and model specification errors, which would generate biases and lead to defective estimates. Each of the diagnostic test was executed and relevant corrective measures carried out as the basis of ensuring that the adopted panel model accurately represented the date and produced trustworthy results.

4.2.1 Normality test

Normality test is crucial in studies requiring application of statistical methods, such as panel and linear regressions, since it gauges their validity (Liu et al., 2021). The diagnostic test assesses if the error terms of a regression model follow a normal distribution, which is a key assumption for panel regression, particularly in hypothesis testing. Table 4.7 shows the test of normality results.

Table 4.7: Normality Test

Variable	Chi (2)	Sig.
Interest Rate	49.55	0.000
GDP	124.0	0.000
Unemployment	46.48	0.000
Inflation rate	23.38	0.000
ROA	444.7	0.000

Source: Research Data (2024)

In light of the findings of the study indicated in the above table, there is a significant Jarque-Bera test result (a p-value less than 0.05), which leads to the rejection of the null hypothesis, meaning that the residuals do not follow a normal distribution. Accordingly, the study applied a robust regression approach in the estimation of the relationship between macroeconomic factors and financial performance of commercial banks in Kenya. It shall be noted in another subsection below that the data failed to meet the homoscedastic test of constant error variance, thus application of standard robust errors was proposed to correct the said anomaly.

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4.2.2 Multi-collinearity Test

This study used the Variance Inflation rate Factor (VIF) and the tolerance value as tests for detecting presence of multicollinearity among the explanatory variables. A VIF value above 10 or a tolerance value below 0.2 typically indicates multicollinearity, signaling high correlation in the predictors. The results of the study indicated in table 4.8 espouse that all the predictors (exchange rate, GDP, unemployment, and inflation rate) had scores of variance inflation rate factor of less than 10 while the values of tolerance were more than 0.1. In this regard, multicollinearity was absent, implying that there was no correlation among the explanatory variables of the study.

Table 4.8: Multicollinearity Test

Variable	VIF	1/VIF
Unemployment	9.894	.101
Interest Rate	9.674	.103
Inflation rate	1.073	.932
GDP	1.004	.996

Source: Research Data (2024)

4.2.3 Heteroscedasticity Test

The study used Breusch-Pagan test to establish presence of heteroscedasticity where the assumption of constant error variance was set as the null hypothesis with a probability value of greater than 0.05 signaling homoscedasticity. As per the findings contained in table 4.9, the p-value of 0.0130 was less than 0.05, thereby rejecting the null hypothesis that points to data being homoscedastic. Accordingly, the model appears to be heteroscedastic, thus requiring necessary correction because of the presence of heteroscedasticity. To rectify lack of constant error variance, the study used robust standard errors in addition to either the random effects model or the fixed effects as usage of any of the two is usually based on the model specification test.

Table 4.9: Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of ROA

chi2(1) = 6.18

Prob > chi2 = 0.0130

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Source: Research Data (2024)

4.2.4 Stationarity Test

The study utilized Levin-Lin-Chu (LLC) test as a panel data stationarity detection approach to establish if the obtained panel data was stationarity. The null hypothesis of the LLC test is that each individual time series in the panel contains a unit root, that is, it is non-stationary, while the alternative hypothesis is that all series are stationary. The adjusted t statistic values for all the variables of the study are significant at 0.05 level of significance ($p<0.05$), leading to rejection of the null hypothesis and concluding that the panel data series meets the stationarity criteria.

Table 4.10: Stationarity Test

Variable	Statistic	p-value
ROA	-6.9891	0.0000
Inflation rate	-2.2883	0.0111
Unemployment	-9.4957	0.0000
Interest Rate	-5.5077	0.0000
GDP	-24.2760	0.0000
Bank Size	-13.8456	0.0000

Source: Research Data (2024)

4.2.5 Model Specification Test

Panel data is analyzed using two heterogeneous models, which ordinarily assess the random effects or the fixed effects of the observed units. The study utilized the Hausman test as a model specification test to determine whether to use a fixed effects or random effects model in panel data analysis. The null hypothesis of the Hausman test is that the random effects model is appropriate whereas the alternative hypothesis assumes that the fixed effects model is more appropriate because the unobserved effects are correlated with the explanatory variables. In circumstances where $p<0.05$ the fixed effects model is applied while rejecting the random effects model.

In light of the results of the study captured in table 4.11, the Hausman model specification test generated a probability value of greater than the level of significance ($p>0.05$), interpreted to mean the non-rejection of the null hypothesis; hence, the random effects model was applied in the prediction of the relationship between macroeconomic factors and financial performance of

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commercial banks in Kenya as moderated by bank size. The model specification test results are shown in the table below, which was obtained as a screengrab from the Stata statistical software.

Table 4.11: Model Specification Test

```
. hausman fixed random

                 ---- Coefficients ----
                 (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                 fixed        random         Difference          S.E.
-------------------------------------------------------------------------
Interest_R~e     .0021097     .0021097        2.91e-17        8.79e-11
         GDP     .1474839     .1474839        1.50e-15        7.57e-09
Unemployment    -.0036899    -.0036899        3.08e-17        3.99e-11
   Inflation    -.1114578    -.1114578       -5.97e-16        4.51e-09
-------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         0.00
                Prob>chi2 =       1.0000
                (V_b-V_B is not positive definite)
```

Source: Research Data (2024)

4.3 Inferential Statistics

The study applied panel regression analysis to model the relationship between macroeconomic factors and financial performance of commercial banks in Kenya. The specific dimensions of macroeconomic factors considered in this study, as predictor variables, included interest rate, GDP growth, unemployment, and inflation rate. These factors were modelled against financial performance, which was measured in terms of return on assets. The linkage between the predictor and response variables was moderated by bank size whose proxy measure was log of total risk weighted assets. As noted in the section under diagnostic tests, the study adopted the random effects model alongside the robust standard errors in the execution of panel regression since the analyzed data failed the homoscedasticity test. The subsections below on inferential statistics comprise two levels of analysis where the first one analyses the relationship between the explanatory variable and outcome variable without the moderating construct while the second level takes into account the effect of bank size as a moderating factor.

4.3.1 Effect of Macroeconomic Factors on Financial Performance

To establish the underlying relationship between macroeconomic factors and financial performance (research objectives 1-4), a panel regression model was fitted to the data on the

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respective explanatory and dependent variables. A random effects model and robust standard errors were included in the panel regression model to generate an output shown below comprising of the model summary and regression coefficients, all of which summarized in a single table (4.12).

Table 4.12: Panel Regression Results

ROA	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Interest Rate	.002	.001	2.72	.007	.001	.004	***
GDP	.147	.074	1.98	.048	.002	.293	**
Unemployment	-.004	.001	-3.12	.002	-.006	-.001	***
Inflation rate	-.111	.048	-2.31	.021	-.206	-.017	**
Constant	.007	.011	0.62	.538	-.015	.03	

Mean dependent var	0.025	SD dependent var	0.027
Overall r-squared	0.0605	Number of obs	370
Chi-square	43.529	Prob > chi2	0.000
R-squared within	0.000	R-squared between	0.000

*** $p<.01$, ** $p<.05$, * $p<.1$

Source: Research Data (2024)

In light of the panel regression results capture in table 4.12, the overall R-square was 0.0605, indicating that about 6.05% of the variance in ROA is explained by the model's predictor variables. In this regard, 93.95% in the performance of commercial banks is attributable to factors outside the scope under consideration by this study. The Chi-square value of 43.529 and its corresponding p-value of 0.000 ($P<.05$) revealed that the model utilized in the prediction of the effect of macroeconomic factors on financial performance was statistically significant overall. The r-square within and between are both 0.000, suggesting no variation was explained within or between the groups. This is because the macro aspects of the economy are uniform across all the banking institutions and thus, it is not possible to have variations within and between these groups.

In terms of the panel regression coefficients of the study, holding other factors constant, one unit increase in the interest rate was associated with a 0.002 increase in return on assets. The relationship between exchange rate and ROA is highly significant ($p<.01$) as demonstrated by

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the p-value of 0.007. Moreover, the findings of the study indicated that one unit increase in GDP was associated with a 0.147 increase in ROA when other factors are held constant. The corresponding p-value was 0.048, which was less than 0.05, indicating the result was significant ($p<.05$). The regression coefficient for the modelled relationship between unemployment and return on assets was -0.004, meaning that one 1 unit increase in unemployment was associated with a 0.004 decrease in ROA, holding other factors constant. The linkage was highly statistically significant as depicted by the probability value of less than 0.05 and 0.01 ($p=.002$).

For the last variable, one unit increase in inflation rate was associated with a 0.111 decrease in ROA when other factors were kept constant, and this relationship was statistically significant as exemplified by the p-value of 0.021, which is less than 0.05. The constant term represents the expected value of ROA when all independent variables are zero. Nonetheless, the constant term had a p-value of 0.538 ($p>.05$), which was not significant, thus it was not significantly different from zero. The below stated panel regression model summarizes the effect of macroeconomic factors on financial performance of commercial banks in Kenya.

$$Y_{it} = .007 + .002\mathbf{X}_{1it} + .147\mathbf{X}_{2it} + -.004\mathbf{X}_{3it} + -.111\,\mathbf{X}_{4it} + \varepsilon_t$$

Where;

$\mathbf{X}_1$ = Interest Rate

$\mathbf{X}_2$ = GDP

$\mathbf{X}_3$ = Unemployment

$\mathbf{X}_4$ = Inflation rate

Є= Error term

it = Commercial bank *i* at time *t*

4.3.2 Moderating Effect of Bank Size on the Relationship between Macroeconomic Factors and Financial Performance

The fourth objective of the study was to examine the moderating effect of bank size on the relationship between macroeconomic variables and the financial performance of commercial banks in Kenya. To establish the nature of this relationship, a panel regression model was fitted

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on the data on the predictor, moderator, and response variables of the study. The random effects model and robust standard errors were part of the model since the former was informed by the model specification test while the latter addressed violation of the requirement of homoscedasticity. Table 4.13 captures the panel regression output for the relationship between macroeconomic factors and financial performance as moderated by bank size.

Table 4.13: Panel Regression Results for Moderation

ROA	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
Interest Rate	.003	.008	0.37	.713	-.013	.02	
GDP	-2.011	1.037	-1.94	.052	-4.042	.021	*
Unemployment	.002	.01	0.18	.857	-.018	.022	
Inflation rate	-.893	.608	-1.47	.142	-2.084	.298	
Log of assets	-.017	.015	-1.08	.279	-.047	.014	
Interest*Assets	-.0001	.001	-0.11	.911	-.002	.002	
GDP*Assets	.289	.143	2.02	.043	.009	.569	**
Unemployment* Assets	-.001	.001	-0.54	.587	-.003	.002	
Inflation rate*Assets	.104	.083	1.26	.209	-.058	.266	
Constant	.132	.11	1.20	.231	-.084	.349	
Mean dependent var		0.025	SD dependent var			0.027	
Overall r-squared		0.052	Number of obs			370	
Chi-square		61.898	Prob > chi2			0.000	
R-squared within		0.213	R-squared between			0.051	

*** *p<.01*, ** *p<.05*, * *p<.1*

Source: Research Data (2024)

Table 4.13 above shows the panel regression results of the study where the moderating variable has been included in the overall prediction model. The overall R-square was 0.052, implying that about 5.2% of the variance in ROA is explained by the model's predictor variables as moderated by bank size. Accordingly, 94.8% of possible commercial banks' performance was occasioned by other factors not included into the current research work. The Chi-square of 61.898 and its p-value of 0.000 (*P<.05*) meant that the model utilized in the prediction of the effect of macroeconomic factors on financial performance as moderated by bank size was statistically significant.

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The results of the study presented above show that the inclusion of all the predictor variables, moderating variable, and the interaction between each of the explanatory variables and the moderating variable yielded largely statistically insignificant relationship with financial performance of commercial banks. In fact, interest rate ($p=.713$), GDP ($p=.052$), unemployment ($p=.857$), inflation rate ($p=.142$), and log of total risk weighted assets ($p=.279$) generated p-values of greater than 0.05 before interaction. Nonetheless, assuming a significance level of 90% ($p=.1$), the relationship between GDP and return on assets was negative and statistically significant. At the interaction level of each of the predictor variables with the moderating variable, only the interaction between GDP and bank size generated a statistically significant relationship ($p=.043;\ p<.05$). The relationship was positive as supported by a regression coefficient of 0.289 ($r=.289$).

4.4 Hypothesis Testing

4.4.1 Interest Rate

The first objective of the study was to investigate the relationship between interest rate and the financial performance of commercial banks in Kenya. The null hypothesis underlying the objective of the study stated that there was no significant relationship between interest rates and the financial performance of commercial banks in Kenya. Based on either the critical value method (1.96) or the level of significant approach ($p=.05$), it is deducible that the calculated t-value of 2.72 was greater than the critical value of 1.96 or the p-value of .007 was less than 0.05, thus rejection of the null hypothesis and concluding that there is a significant relationship between interest rate and the financial performance of commercial banks in Kenya. Interest rate depicted a positive relationship with return on assets ($r=.002$), suggesting that as the rate of interest rate increases, the financial performance of banks tends to also go higher. These findings agrees with those of Wambari and Mwangi (2017) who found out that the ratio of the lending rate positively influenced financial performance of banks in Kenya. Moreover, the findings are consistent with those arrived by Chepkorir (2018) whose outcome showed that interest rate increase by CBK caused a direct increase in financial performance of commercial banks in Kenya.

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4.4.2 GDP

The second the objective of the study was to assess the relationship between GDP growth and the financial performance of commercial banks in Kenya. The null hypothesis reflecting this particular objective stated that there was no significant relationship between GDP growth and the financial performance of commercial banks in Kenya. As per the findings of the study, GDP exhibited a positive and statistically significant relationship with ROA (*r=.147; p=.048; p<.05*). In effect, the study concluded that there was a significant relationship between GDP growth and the financial performance of commercial banks in Kenya. This suggests that as Kenya's gross domestic products increases, the likelihood of commercial banks performing financially better increases. This result differs with a study undertaken among private banks within the Ethiopian banking industry by Amene and Alemu (2019), which established that expansion in the country's GDP positively and insignificantly influenced return on assets, a result further reinforced by Kiganda (2014) who established that real GDP did not have an effect on bank profitability. However, the results of a study by Klein and Weill (2022) documented positive relationship both on the long-run and short-run between economic growth and bank profitability among a panel of 132 countries observed for the period between 1999 and 2013.

4.4.3 Unemployment

The third objective of the study was to assess the influence of unemployment on financial performance of commercial banks in Kenya. The formulated null hypothesis with respect to this objective was specified as: *Unemployment has no significant influence on the financial performance of commercial banks in Kenya*. Based on the outcome of the study, unemployment showed a negative and highly statistically significant relationship with ROA (*r=-.004*; *p=.002).* Accordingly, the null hypothesis is rejected, affirming that unemployment has a significant influence on the financial performance of commercial banks in Kenya. The study by Baba and Nasieku (2016) carried out in Nigeria agrees with the findings of the present study where it found out that unemployment, as macroeconomic factor, exhibited a negative and statistically significant relationship with financial performance. On the other hand, Islam (2023) established a statistically insignificant interlinkage between financial performance and the rate of unemployment in the United Kingdom.

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4.4.4 Inflation Rate

The fourth objective of this research inquiry was to examine the impact of inflation rate on the financial performance of commercial banks in Kenya. The corresponding null hypothesis stated that there was no significant impact of inflation rate on the financial performance of commercial banks in Kenya. The findings of the study showed that inflation rate revealed a negative and statistically significant relationship with return on assets (*r=-.111; p=.021*), leading to the rejection of the null hypothesis. In this regard, the study concluded that there was a significant impact of inflation rate on the financial performance of commercial banks in Kenya. This can be interpreted to mean that as the rate of inflation rate goes up, financial performance among commercial banks is likely to dip. There is rich scientific research demonstrating similar findings to those of the present research work, one of them being by Moyo and Tursoy (2020) who established an inverse association between inflation rate and return on equity, one of the metrics of measuring financial performance within the banking sector. Contrarily, a study by Baba and Nasieku (2016) found out that the linkage between inflation rate and financial performance was statistically insignificant while a scientific inquiry by Jackson et al. (2021) revealed that inflation rate was positively associated with performance in the banking industry.

4.4.5 Macroeconomic Factors, Bank Size and Financial Performance

The fifth objective of this research work was to examine the moderating effect of bank size on the relationship between macroeconomic variables and financial performance of commercial banks in Kenya. The underlying null hypothesis for this research objective stated that bank size did not have a significant moderating effect on the relationship between macroeconomic variables and financial performance of commercial banks in Kenya. Only the interaction between GDP and bank size generated a statistically significant relationship (*p=.043; p<.05*). The relationship was positive as supported by a regression coefficient of 0.289 (*r=.289*). Interest rate, unemployment, and inflation rate, as macroeconomic factors, and their interaction with bank size, as a moderating variable, exhibited statistically insignificant relationship with return on assets. Much of the existing empirical literature both contradict and agree with the results of this research work. A study into the interplay between banks' profitability and macroeconomic factors in the United Kingdom by Islam (2023) showed that the rate of unemployment, inflation

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rate rate, and real interest rate failed to exhibit any significant effect on profitability as measured by ROA. Nonetheless, a negative significant effect was recorded in the link between GDP growth rate and return on assets.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter contains the summary, conclusions, and recommendations of the study. The relationship between macroeconomic factors and financial performance of commercial banks in Kenya, as the main research objective, provided the basis of making the summary of this research work. The outcome of the analyzed data in chapter four anchored the conclusions and recommendations of the study.

5.1 Summary of Findings

The rationale of this study was to determine the relationship between macroeconomic factors and financial performance of the commercial banks in Kenya. The economic theory and inflation rate uncertainty theory provided the theoretical foundation of the study. Macroeconomic factors constituting of interest rate, GDP growth, unemployment, and inflation rate made up the predictor variables of this research work whereas financial performance as measured by ROA comprised of the response variable. The relationship between the explanatory and outcome variables was moderated by bank size, a variable whose metric was log of total risk weighted assets. The analyzed data was sourced from Kenya National Bureau of Statistics, the Central Bank of Kenya, and audited financial statements of the financial institutions considered in this study. Stata statistical software (version 15) was utilized in the analysis of panel data. The subsections below summarize each of the variables of the study.

5.1.1 Interest Rate

The first objective of the study was to investigate the relationship between interest rate and the financial performance of commercial banks in Kenya. Interest rate depicted a statistically significant relationship with return on assets as a metric for measuring financial performance ($p=.007;\ p< .05$). This relationship was positive as demonstrated by the regression coefficient of .002.

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5.1.2 GDP

The second the objective of the study was to assess the relationship between GDP growth and the financial performance of commercial banks in Kenya. In light of the outcome of the study, GDP exhibited a positive and statistically significant relationship with ROA (*r=.147; p=.048; p<.05*).

5.1.3 Unemployment

The third objective of the study was to assess the influence of unemployment on financial performance of commercial banks in Kenya. As per the results of the study, unemployment showed a negative and highly statistically significant relationship with ROA (*r=-.004*; *p=.002; p<.05).*

5.1.4 Inflation Rate

The fourth objective of this research inquiry was to examine the impact of inflation rate on the financial performance of commercial banks in Kenya. The findings of the study showed that inflation rate revealed a negative and statistically significant relationship with return on assets at 5% level of significance (*r=-.111; p=.021; p<0.05*).

5.1.5 Bank Size

The fifth objective of this research work was to examine the moderating effect of bank size on the relationship between macroeconomic variables and financial performance of commercial banks in Kenya. The interaction between GDP and bank size generated a statistically significant relationship (*p=.043; p<.05*). The relationship was positive as supported by a regression coefficient of 0.289 (*r=.289*). Interest rate, unemployment, and inflation rate, as macroeconomic factors, and their interaction with bank size, as a moderating variable, exhibited statistically insignificant relationship with return on assets (*p>.05*).

5.2 Conclusion

As established by the results of this study, this research concluded that interest rate, GDP growth, unemployment, and inflation rate significantly affected the financial performance of commercial banks in Kenya. Specifically, the study concluded that interest rate and GDP growth positively and significantly affected the return on assets of commercial banks whereas unemployment and inflation rate rate negatively, but significantly influenced financial performance. Moreover, the

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study concluded that bank size positively moderated the relationship between GDP growth and financial performance whereas it exhibited an insignificant moderating effect on the relationship among Interest rate, unemployment, and inflation rate, as predictor variables, and financial performance.

According to the overall r-square value of 0.0605, the study concluded that the effect of macroeconomic factors on financial performance was low, thus the predictors have limited explanatory power for the return on asset metric. About 6.05% of the variance in ROA is explained by the model's predictor variables. In this regard, 93.95% in the performance of commercial banks is attributable to factors outside the scope under consideration by this study. The model utilized in the prediction of the effect of macroeconomic factors on financial performance was statistically significant overall as shown by p-value of 0.000 ($P<.05$).

5.3 Recommendations

The overall results of the study showed that interest rate, GDP growth rate, unemployment, and inflation rate depicted statistically significant relationship with financial performance as measured by return on assets. In particular, interest rate and GDP growth exhibited positive association with financial performance whereas both unemployment and inflation rate revealed negative linkage with banks' performance. It is in light of this outcome that the study makes the following recommendations:

Since interest rate and financial performance were positively and significantly related, the study recommends that commercial banks should leverage interest rate increases to boost profitability through strategic adjustment of loan and deposit rates to maximize interest income while managing the cost of funds effectively. As noted in trends overtime on interest rate, it was evident that the rates have not remained stable over the years, thus commercial banks should strengthen their risk assessment and management processes through loan portfolio diversification to cushion against sectors, which are highly sensitive to changes in interest rate. For the regulator, CBK, it is important to adjust interest rates appropriately so that banks remain profitable while at the same time ensuring that borrowers are able to fulfil their obligations without increasing the risk of defaults.

GDP growth and financial performance were positively and significantly linked in this research work; thus, the study recommends that commercial banks should take advantage of periods of

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GDP growth to expand their lending activities, particularly to sectors that drive economic growth. Similarly, the government should support economic stability as this directly benefits the financial performance of banks. Policies that encourage investment, improve infrastructure, and enhance business environments can contribute to sustainable GDP growth.

There is need for commercial banks to closely follow their credit risk management practices to address the negative effects of rising unemployment as this was linked to reduced financial performance. Banks should endeavor to tighten their lending criteria and monitor the ability of the borrowers to pay loans. At the same time, there is need for banks to diversify into fee-based banking services, which do not rely on interest income so that they remain profitable even when the rate of unemployment rises.

5.4 Suggestions for Further Research

Given that interest rate, GDP growth, unemployment, and inflation rate caused 6.05% variation in financial performance of commercial banks in Kenya, it is critical to carry out another study to determine factors responsible for 93.95% variation in performance in the banking sector. Moreover, the ever-evolving economic conditions and financial sector developments call for inclusion of up-to-date data to determine whether the established relationships among the variables might shift in the future.

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APPENDIX I: DATA COLLECTION INSTRUMENT

Year	Financial Performance of Commercial Banks	Interest Rates	GDP Growth	Unemployment	Inflation rate
2013	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2014	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2015	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2016	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2017	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2018	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2019	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2020	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2021	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS
2022	CBK and Commercial Banks Financial Report	CBK Report	KNBS	KNBS	KNBS

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APPENDIX 2: APPROVAL LETTER

ST. PAUL'S UNIVERSITY

Private Bag 00217 LIMURU, KENYA
Email: office@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: +254 (0) 20-2020505/10
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(0) 736 - 424440

BOARD OF POSTGRADUATE STUDIES

28th June, 2024

National Commission for Science and Technology,
P.O. BOX 30623-00100,
Nairobi.

Dear Sir/Madam,

RE: RECOMMENDATION FOR ELIZABETH WAMBUI MWANGI – MBADIST422122 TO CONDUCT RESEARCH

This letter confirms the above-named person is a student in the Master of Business Administration Program at St. Paul's University.

The second year consists of a major research work leading to a Thesis. The student's selected topic is:

"Macroeconomic variables and financial performance of commercial banks in Kenya."

Kindly grant this student the required permit.

Yours faithfully,

01 JUL 2024

Dr. John Muhoho
Director Board of Postgraduate Studies

APPENDIX 3: LETTER FROM ISERC

ST. PAUL'S UNIVERSITY

Private Bag 00217 Limuru,
Kenya
Email: office@spu.ac.ke
Website: www.spu.ac.ke

Tel Office: +254 (0) 20-2020505/10
Mobile: +254 (0) 728-669000
(0) 736-424440

REF: SPU/194/2024 **Date: 27th June 2024**

TO: Elizabeth Mwangi
St. Paul's University

Dear Elizabeth,

==========

REF: Macroeconomic Variables and Financial Performance of Commercial Banks in Kenya

==========

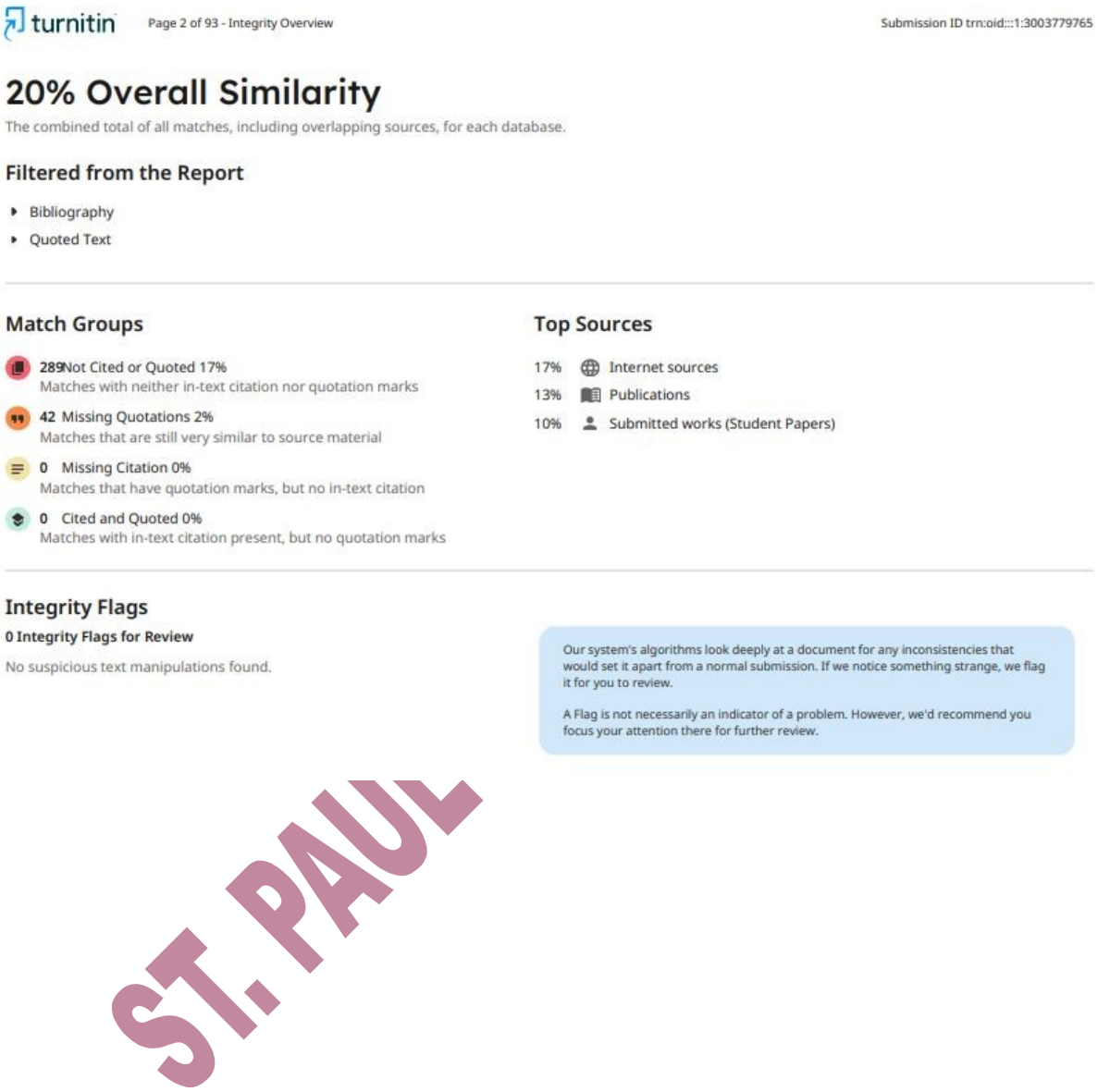
Greetings,

This is to inform you that SPU- Institutional Scientific Ethics Review Committee has reviewed the above-named research proposal. **Your ERB approval number is 203, for the period between 27th June 2024 – 27th June 2025 (1 year).**

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SPU- Institutional Scientific Ethics Review Committee.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SPU- Institutional Scientific Ethics Review Committee within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to *SPU- Institutional Scientific Ethics Review Committee* within 72 hours

APPENDIX 4: PLAGARISM REPORT



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ST. PAUL

APPENDIX 5: NACOSTI LICENSE

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 333476

Date of Issue: 17/July/2024

RESEARCH LICENSE



This is to Certify that Ms.. Elizabeth Wambui Mwangi of St. Paul's University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu on the topic: MACROECONOMIC VARIABLES AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA for the period ending : 17/July/2025.

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