

**EFFECT OF FINANCIAL LEVERAGE ON THE FINANCIAL PERFORMANCE OF
KENYAN BANKS**

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DECLARATION

This thesis is my original work and has not been presented for examination in any other university.

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DEDICATION

The foundation of my journey has been my dear family and friends, whose unfaltering support, encouragement, and love; to them, I devote this project. You have been my rock, my family. Your unwavering faith in me has helped me overcome every obstacle. Your company and empathy have given me the strength to keep going, my friends. You two have been my driving forces and sources of inspiration throughout my life, and I will be forever thankful.

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LIST OF ABBREVIATIONS AND ACRONYMS

LLC	Levi Lechun
MFIs	Microfinance Institutions
SRBs	Shariah Rural Banks
VIF	Variance Inflation Factor

ABSTRACT

Financial leverage plays a critical role in shaping the profitability and long-term viability of banks. This study examined how leverage affects the financial performance of commercial banks in Kenya, covering a five-year timeframe from 2019 to 2023 across all 40 licensed institutions. Using a correlational research approach, the analysis relied on panel data regression methods, supported by essential diagnostics such as unit root assessments, fixed versus random effects estimations, and the Hausman test to determine the most appropriate model. The findings, displayed using tables and visual aids, revealed that the four leverage indicators examined debt-to-equity, debt-to-total assets, long-term debt ratio, and short-term debt ratio collectively accounted for 47.28% of the variation in return on assets. This suggests that more than half of the performance differences remain influenced by other, unexamined factors. The results showed that higher levels of debt relative to equity, total assets, and long-term commitments had a statistically significant and negative impact on profitability. In contrast, short-term debt appeared to have a slight positive influence on performance, though this effect was not statistically meaningful. Overall, the study emphasizes that the way banks manage their leverage significantly affects financial outcomes. It recommends that bank leaders adopt more cautious approaches to financing particularly by limiting overreliance on long-term debt and equity-based structures in order to safeguard profitability and support sustainable operations.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial performance of banks is an important measure of their stability, influencing both their ability to attract investment and their capacity to lend to businesses and individuals. Strong financial performance indicates effective management, efficient operations, and effective risk management practices, which are essential for maintaining trust among depositors and stakeholders. Financial performance reflects a company's capacity to generate profits and effectively utilize and manage its resources. In the banking sector, maintaining strong financial performance is vital for ensuring the stability and sustainability of the financial industry, which serves as a cornerstone for economic growth and development (Ongore & Kusa, 2013). In addition to providing assistance to development projects by directing funds towards productive uses, facilitating the flow of funds from those who have excess to those who are in need, and providing support for the financial and economic policies of the government Efionayi (2024) and Nambie et al. (2024) the banking sector is an essential component of the financial services sector.

Over the last two decades, the global banking sector has experienced substantial shifts in its operational landscape, particularly concerning its structure and financial performance (Duc, 2025). Although bank disintermediation has been on the rise, efficiently channeling funds from depositors to investors or productive ventures remains a critical factor in fostering a country's economic growth (Abu, 2024). Amira et al. (2023) assert that robust financial performance of commercial banks enhances a stable and lucrative banking industry, hence fortifying a financial system capable of withstanding adverse shocks. Conversely, inadequate performance precipitates bank runs, banking crises, and culminates in a significant financial crisis. It is possible, according to Chivuyi and Abuga (2023), to evaluate the financial performance of banks by analyzing a number of measures, such as total assets and total shareholder equity, in connection to the profits these institutions generate.

A company's management can be defined as the people and teams working within the company to achieve its financial goals, which is why measuring their performance is crucial (Dave & Thaker, 2024). Strong financial performance strengthens a bank's capital base, ensuring compliance with regulatory requirements and enhancing resilience against economic downturns and financial crises.

Moreover, good financial performance enhances investor confidence and attracts more investments, which can be used to support further development and innovation. Additionally, improved financial performance enables banks to offer competitive interest rates and better terms to borrowers and savers, thereby attracting more customers. There are a number of measures that can be utilized in order to analyze a company's financial performance (Mujianto & Hariyanto, 2024). Some of these ratios are ROE, ROA, and net interest margin, amongst others (Anton et al., 2023). The ROA metric, which measures how effectively a bank put its assets to work in order to earn profits, will be utilised in this investigation to evaluate the financial performance of the institution (Jigeer & Koroleva, 2023).

In an effort to improve financial performance, banks strategically use leverage to improve their potential returns on investment (Olulu-Briggs, 2024). Financial leverage involves borrowing funds, which comes from various sources such as customer deposits, interbank loans, or issuing debt securities, to finance a greater volume of lending and investment activities than would be possible with their equity alone (Nwulu & Okereke, 2024). By doing so, banks earn more from the interest on loans and investments compared to the cost of borrowing, thus enhancing their profitability and key financial metrics such as ROE and ROA (Jigeer & Koroleva, 2023). However, excessive borrowing is likely to lead to increased debt servicing costs and vulnerability to financial distress, particularly if the bank's investments do not generate the expected returns or if there is an economic downturn (Kasal, 2023). Research shows that when managed properly, leverage has the ability to enhance profitability then leads to improved financial metrics such ROE and ROA, which are key indicators of a bank's performance. Therefore, the optimal level of leverage must balance the pursuit of higher returns with the need to maintain financial stability and manage risk effectively (Arhinful & Radmehr, 2023).

Effective risk management is essential when using financial leverage (Kalash, 2023). Banks must implement robust risk assessment frameworks to monitor and mitigate the risks associated with borrowing. Regulatory bodies also play a critical role in overseeing leverage levels within banks. According to Oguejiofor et al. (2023), regulations such as the Basel III framework establish capital requirements in order to guarantee that financial institutions keep an adequate amount of equity to compensate for any prospective losses. For the purpose of preventing undue leverage, which could result in systemic hazards in the banking sector, certain restrictions have been issued. Adhering to these guidelines ensure that the leverage strategies do not compromise their financial health or the

stability of the financial system. Moreover, the key to leveraging successfully lies in achieving a balance that maximizes financial performance without compromising stability of the bank (Sitienei et al., 2023). This involves strategic decision-making regarding the mix of equity and debt financing, prudent management of loan portfolios, and continuous monitoring of market conditions.

According to Oketch et al. (2018), the debt-to-equity ratio of a bank is an essential indicator of the institution's overall health. This ratio indicates the amount of debt that the bank possesses in comparison to the amount of equity that its shareholders have invested. Similarly, the debt-to-total assets ratio provides more information on the overall leverage of a bank, indicating the proportion of assets financed through debt (Lomwai, 2024). Moreover, long-term and short-term debt ratios offer a clear picture of a bank's debt structure. Long-term debt provides stability but may increase interest expenses, while short-term debt provides flexibility but may expose banks to refinancing risks (Ongore & Kusa, 2013). Bank size has been identified as a potential moderating factor in the relationship between leverage and performance. Larger banks may benefit from economies of scale and better access to capital markets, potentially influencing how leverage affects their performance (Mwangi & Murigu, 2021). Furthermore, larger banks often have more diversified funding sources and greater capacity to manage debt, impacting their financial performance and stability.

1.1.1 Global Perspective of Financial Leverage and Financial Performance

In Singapore, banks typically maintain conservative leverage ratios due to strict regulatory oversight and a focus on stability (Dacanay et al., 2024). As of 2023, the average leverage ratio for Singaporean banks was around 7-8%, which is above the Basel III minimum requirement of 3%. DBS Bank, the largest in Singapore, reported a leverage ratio of 7.3% in Q4 2023 (Hukom & Lubis, 2023). This conservative approach has contributed to the resilience of Singapore's banking sector, with non-performing loan ratios remaining low at around 1.5% for major banks. In contrast, Brazilian banks tend to operate with higher leverage due to the country's volatile economic conditions and higher interest rates (da Rosa et al., 2024). The average leverage ratio for Brazilian banks was approximately 11-12% in 2023, with Itaú Unibanco, Brazil's largest private bank, reporting a leverage ratio of 10.8% in its latest financial report. Despite higher leverage, Brazilian banks have shown resilience, with the sector's overall capital adequacy ratio standing at 16.2% as of December 2023.

In the United States, the average leverage ratio for major banks stood at around 9% in 2023, well above the Basel III requirement, reflecting the country's strong regulatory stance post-2008 financial crisis. JPMorgan Chase, the largest bank in the U.S., reported a leverage ratio of 8.9% for Q4 2023, emphasizing its focus on maintaining sufficient capital to withstand economic fluctuations. Similarly, in the United Kingdom, the Bank of England's oversight has kept leverage ratios in major banks like HSBC at around 8.5%, also exceeding the Basel III minimum. These conservative leverage ratios in Western banks are indicative of a broader trend in the financial industry, where maintaining capital buffers is viewed as essential to sustaining long-term stability and avoiding systemic risk.

1.1.2 Regional Perspective of Financial Leverage and Financial Performance

Regionally, South Africa's banking sector is the most developed and advanced on the continent, with leverage ratios generally consistent with international standards (Lichaba, 2023). The average leverage ratio for South African banks was approximately 6-7% in 2023, exceeding the regulatory minimum. The "Big Four" banks in South Africa- Standard Bank, FirstRand, Absa, and Nedbank which dominate the market, reported leverage ratios ranging from 6.5% to 7.5% in their latest financial statements. South Africa's banking sector has shown resilience, maintaining a capital adequacy ratio of around 16% in 2023, well above the regulatory minimum of 10.5% (Oyetade et al.,2023). However, the sector faces challenges from the country's economic slowdown, with non-performing loans increasing slightly to 4.3% in 2023 from 3.9% in the previous year. In Ghana, banks have been grappling with high non-performing loan ratios and the aftermath of a sector-wide recapitalization effort (Essilfie, 2023).

Currently, the average leverage ratio for Ghanaian banks stands at average of 8-9%, with notable variations among institutions. The sector's capital adequacy ratio stood at 19.8% in December 2023, above the regulatory minimum of 13%, but non-performing loans remained high at 14.5%. In Nigeria, the banking sector displayed a higher leverage ratio, with the average standing at 9-10% in 2023, as banks relied more heavily on debt financing due to liquidity constraints (Abdullahi et al.,2023). The capital adequacy ratio in Nigeria's banking sector remained strong at 18.2%, with key players such as Access Bank and Zenith Bank reporting leverage ratios of 9.3% and 9.7%, respectively. Nonetheless, Nigeria's banks have faced rising non-performing loans, which spiked

to 6.8% in 2023, exacerbated by the country's volatile macroeconomic environment and inflationary pressures.

1.1.3 Local Perspective of Financial Leverage and Financial Performance

Kenyan banking sector has faced serious challenges in recent years, which have impacted leverage and overall financial performance. The introduction of interest rate caps in 2016 (although repealed in 2019) and the economic impact of the COVID-19 pandemic led to increased caution in lending practices (Kibe et al., 2023). This resulted in a slight decrease in leverage ratios for some banks as they sought to maintain stronger capital buffers. Non-performing loans have been a persistent issue, with the ratio reaching 13.3% in 2023, down from a peak of 14.5% in 2021 but still significantly higher than pre-pandemic levels. Despite these challenges, the banking sector in Kenya has shown resilience, with the CBK reporting that the banking sector's total assets grew by 9.8% year-on-year to KES 6.2 trillion (approximately USD 55 billion) in 2023 (CBK, 2022).

The regulator has also been implementing measures to strengthen the sector, including encouraging consolidation among smaller banks and enhancing risk management practices, which may influence future leverage trends in the Kenyan banking sector. The average leverage ratio for banks was reported at approximately 7-8% in 2023, aligning with international standards and reflecting a cautious approach to debt. The country's largest banks, including Equity Bank and KCB Group, reported leverage ratios between 7.2% and 7.9%. Kenya's banking sector maintained a capital adequacy ratio of 16.5% in 2023, comfortably above the regulatory minimum of 14.5%. However, the sector has faced pressure from rising non-performing loans, which increased to 5.1% in 2023, compared to 4.7% the previous year.

The largest banks in Kenya, such as KCB and Equity Bank, reported leverage ratios of 8.7% and 9.2% respectively in their 2023 financial statements. These figures are above the minimum regulatory requirement of 3% set by the CBK, consistent with international Basel III standards. The financial sector plays a pivotal role in economic stability, yet commercial banks face ongoing challenges related to declining financial performance (IMF, 2020). Factors such as increasing non-performing loans, stringent regulatory frameworks, and heightened competition have been identified as key contributors to this issue (Barde et al., 2023; Šipilova et al., 2023).

1.1.4 Banking Sector in Kenya

Kenya's banking sector has demonstrated some level of resilience and growth, significantly contributing to the nation's economic stability. In 2023, the sector's total assets expanded by KES 1.2 trillion, marking a 17.6% increase. This growth was largely fueled by a 15.1% rise in banking deposits, attributed to the widespread adoption of mobile and online banking platforms (Kenya Bankers Association, 2024). Despite a 21.0% increase in operating income, the sector experienced a 9.1% decline in pre-tax profits, highlighting challenges in cost management and operational efficiency. Additionally, the Central Bank of Kenya reported that the ratio of non-performing loans (NPLs) to gross loans increased to 13.8% in July 2024, up from 13.2% in the previous quarter, indicating rising credit risks within the industry (CBK, 2023).

The sector is also dealing with a dynamic regulatory and economic environment. In response to a deceleration in economic growth and controlled inflation, the Central Bank of Kenya reduced the benchmark lending rate by 75 basis points to 11.25% in December 2024, aiming to stimulate private sector credit growth (Business Radar, 2024). Moreover, the adoption of sustainable finance practices is gaining momentum, with 93% of Kenyan banks committed to advancing Sustainable Development Goals, reflecting a shift towards environmentally and socially responsible banking. However, the sector faces ongoing challenges, including the need to manage rising NPLs and adapt to technological advancements, all while maintaining profitability and supporting economic growth.

1.2 Statement of the Problem

The Kenyan banking sector, an important component of the country's financial system, has been facing serious financial challenges in recent years, with financial performance showing a consistent downward trend. This decline has been particularly evident in key performance indicators such as profitability, asset quality, and overall stability. According to the Central Bank of the sector's return on assets (ROA) decreased from 3.8% in 2019 to 2.9% in 2023, ROE decreased from 21.1% to 17.3% within that same period (CBK, 2023). The deterioration in financial performance has been accompanied by a rise in non-performing loans (NPLs), which reached 13.3% in 2023, up from 12.0% in 2019. This increase in NPLs has put pressure on banks' balance sheets and raised concerns about the overall financial standing of the sector. The persistent

high level of NPLs points to issues in credit risk management and the broader economic environment affecting borrowers' ability to repay loans.

Furthermore, the banking sector in Kenya has experienced a decline in net interest margins (NIM), a key measure of profitability from core banking activities. The average NIM for Kenyan banks decreased from 7.2% in 2019 to 6.1% in 2023 (Kenya Bankers Association, [KBA] 2024). This compression in margins has been attributed to increased competition, regulatory changes, and the lingering effects of the interest rate cap that was in place from 2016 to 2019. The challenging operating environment has also affected the sector's efficiency. The cost-to-income ratio for Kenyan banks increased from 54.3% in 2019 to 58.7% in 2023, indicating declining operational efficiency. This rise in costs relative to income has put additional pressure on banks' profitability.

While some years have seen growth and profitability, others have seen a decline in financial performance. Although the banking sector has seen growth in assets, profitability has been declining in recent years (CBK, 2023). According to the Kenya Bankers Association, the industry's pre-tax profits fell by 6.2% in 2021, with net profits declining by 4.7%. This decline was attributed to increased loan loss provisions, higher operating expenses, and reduced interest income. A trend analysis of financial performance of commercial banks indicate unfavorable/declining trajectory in view of profitability indicators over the period 2010 to 2021 (CBK, 2022). The profit before tax of commercial banks stood at 20.1 percent as at 2012 which declined to 16 percent in 2013. The lowest return on equity for the banks in Kenya was 14.1% in 2018 and the highest performance was in the year 2022 when the commercial banks realized an average return on equity of 25.6%. However, there was a drop in performance in 2022 when the banks registered an average ROE of 13.9%. The overall performance in terms of return on equity shows that the financial performance was fluctuating over the period 2018 to 2023(CBK, 2023).

In response to these challenges, Kenyan banks have been exploring various strategies to improve their financial performance, with financial leverage being a key area of focus. Financial leverage, has the potential to enhance returns but also carries inherent risks. The average leverage ratio for Kenyan banks stood at 8.9% in 2023, higher than many of their African counterparts (CBK, 2023). However, the relationship between financial leverage and bank performance in Kenya remains complex and not fully understood area. While some studies suggest that higher leverage can lead to improved profitability through increased lending capacity and economies of scale, others argue

that excessive leverage can increase financial risk and vulnerability to economic shocks (Lomwai, 2024; Onyango & Olweny, 2022).

The heterogeneity of the Kenyan banking system, which includes major differences in size, business models, and risk appetites among banks, further complicates the ongoing discussion regarding the optimal degree of financial leverage for Kenyan banks. For example, larger banks have a tendency to have higher leverage ratios in comparison to smaller banks; nevertheless, the influence of this difference on financial performance is not quite clear-cut (Oketch et al., 2018). Given the significant part that the banking sector plays in the development of Kenya's economy and the issues that it is currently facing, there is an immediate and pressing need to gain a more thorough understanding of the relationship between financial leverage and bank performance.

The association between bank performance and financial leverage has been the subject of several research conducted in Kenya and elsewhere in Africa. A notable inverse relationship between financial leverage and the performance of the corresponding institutions was found by Thiong'o, et al. (2024) when studying the financial performance of Kenyan commercial banks. However, AlFadhli and AlAli (2021) discovered that among Kenyan commercial banks listed on stock exchanges, leverage correlates positively with financial success. Similarly, Olulu-Briggs (2024) discovered that financial leverage and the performance of Nigerian banks are positively correlated. Olulu-Briggs (2024) found that listed banks' financial performance is significantly affected by financial leverage. There are contextual, methodological, and conceptual gaps because the studies were performed at different eras, used different procedures, and looked at different variables, notwithstanding these results. This study sought to address these gaps by analyzing how financial leverage impacts the bottom lines of Kenyan banks.

1.3 Research Objectives

1.3.1 General Objective

To analyze the effect of financial leverage on the financial performance of Kenyan banks.

1.3.2 Specific Objectives

- i. To determine the effect of debt-to-equity ratio on the financial performance of Kenyan banks.

- ii. To assess the effect of debt-to-total assets ratio on the financial performance of Kenyan banks.
- iii. To examine the effect of long-term debt ratio on the financial performance of Kenyan banks.
- iv. To investigate the effect of short-term debt ratio on the financial performance of Kenyan banks.

1.4 Research Hypotheses

- H₀₁:** Debt-to-equity ratio has no statistically significant effect on the financial performance of Kenyan banks.
- H₀₂:** Debt-to-total assets ratio has no statistically significant effect on the financial performance of Kenyan banks.
- H₀₃:** Long-term debt ratio has no statistically significant effect on the financial performance of Kenyan banks.
- H₀₄:** Short-term debt ratio has no statistically significant effect on the financial performance of Kenyan banks.

1.5 Significance of the Study

Regulatory entities, in particular CBK and the Capital Markets Authority (CMA), would consider the findings of this study to be extremely important for the design of policies and the supervision of regulatory agencies. These authorities will be able to establish regulatory frameworks that are more effective and targeted as a result of the research since it will provide empirical information on the impact of various leverage ratios on bank performance. It is quite probable that this will result in enhanced stability and performance throughout the whole banking sector in Kenya, which will eventually contribute to the general health of the financial system.

Furthermore, investors and shareholders in Kenyan banks will get a deeper comprehension of how financial leverage impacts bank performance, allowing them to make more educated investment choices. The study's results will offer valuable insight into the correlation between different leverage ratios and key performance metrics for financial institutions. In order to weigh the potential benefits and drawbacks of investing in the banking sector, they will conduct this analysis.

The better use of money that comes from this data might mean higher returns for individual investors in the long run.

Furthermore, the academic community as well as future researchers will gain a substantial amount of value from this study. This will make a significant contribution to the existing body of research about financial leverage and bank performance, particularly with regard to developing markets such as Kenya. The complete strategy taken in this study, which included the examination of numerous leverage ratios and the consideration of the moderating effect of bank size, will provide a solid platform for future research being conducted in this area. Furthermore, any methodological breakthroughs or findings that are out of the ordinary are anticipated to inspire new lines of inquiry in the field of banking and finance research respectively.

Finally, this study will have broader implications for Kenya's economic development. The findings of this study are expected to indirectly contribute to enhanced financial intermediation and economic growth. Improved bank performance will lead to better credit availability for businesses and individuals, fostering economic activity. Moreover, the study's findings will inform discussions on financial sector development strategies, potentially influencing policies aimed at strengthening Kenya's banking sector and its role in the country's economic progress.

1.6 Scope of the Study

The scope of this study encompassed an analysis of all commercial banks operating in Kenya over a 5-year period from 2019 to 2023. This timeframe is particularly significant as it captures a period of strategic changes and developments in the Kenyan banking sector, including regulatory reforms, technological developments, and economic fluctuations. The study focused on four key aspects of financial leverage. This approach allowed for a thorough examination of the banking sector as a whole, capturing the diversity in bank sizes, business models, and risk appetites. Data from annual reports, regulatory filings, and other reliable sources were made use of to ensure accuracy and consistency in the analysis. The study was conducted between August 2024 and June 2025.

1.7 Limitations of the Study

This study anticipated to face several limitations. Firstly, the availability and quality of financial data over the entire 5-year period (2019-2023) for all commercial banks would be inconsistent or incomplete, particularly for smaller or newly established banks. This was expected to potentially

lead to an unbalanced panel dataset. While the study covered a significant timeframe, it was anticipated that it would not fully account for long-term effects of leverage decisions that extend beyond the study period. Additionally, the focus on quantitative financial measures may not capture qualitative factors that influence bank performance, such as management quality or market reputation. Lastly, the study's findings were specific to the Kenyan context and may not be fully generalizable to other countries or regions with different regulatory environments and economic conditions. To mitigate these limitations, the study employed robust statistical techniques to handle missing data where applicable, use multiple sources to cross-verify information where possible, and clearly acknowledge these constraints in the interpretation and presentation of results.

1.8 Assumptions

This study assumed that; the financial data reported by the banks and collected from regulatory sources are accurate, reliable, and representative of their true financial positions. The study also assumed that the chosen financial ratios and performance indicators would adequately capture the concepts of financial leverage and bank performance. Another assumption is that the 5-year period (2019-2023) provides a sufficient timeframe to observe meaningful relationships between leverage and performance, accounting for economic cycles and regulatory changes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presents theoretical and empirical literature review. The theories that inform the study are outlined in the chapter. The chapter also covers empirical review which is carried out as per the study objective, followed by the conceptual framework of the research study and finally this section presents summary of research gaps.

2.2 Theoretical Framework of the Research Study

Through linking the research to existing knowledge, it places the study within the broader context of the field. The theories chosen for this study were selected based on their relevance, practicality, and ability to explain the subject matter effectively.

2.2.1 Pecking Order Theory

The Pecking Order Theory was introduced by Myers and Majluf (1984). This theory reflects the principle of minimizing effort or resistance in capital-raising, with equity financing being the least desirable option due to its higher costs and complexities (Brealey et al., 2011). The theory highlights the impact of information asymmetry, where managers, possessing more knowledge about the firm's prospects, prefer financing options that minimize the need to share sensitive information with external investors. This framework has become a cornerstone in corporate finance, providing insights into how companies make financing decisions, and has been extensively examined in empirical research (Fama & French, 2002).

Internal financing, which mostly consists of retained earnings, is at the top of the hierarchy since it is advantageous in terms of cost and has a low level of risk. It is possible for businesses to minimize the costs that are associated with external financing by utilizing their own internal capital. These costs include interest payments on debt and underwriting fees on shares. Additionally, relying on internal funds helps maintain ownership control and avoids the dilution of existing shareholders' equity (Myers, 1984; Jensen, 1986; Fama & French, 2002; Leary & Roberts, 2010). The use of internal funds also signals management's confidence in the firm's future cash flows and financial stability, which can positively impact investor perception and firm valuation (Myers, 1984; Alfarizzi & Sasongko 2024; Fama & French, 2005; Shyam-Sunder &

Myers, 1999). Debt does not dilute ownership and allows existing shareholders to retain control. However, excessive debt can lead to financial distress and increase bankruptcy risk, which firms aim to avoid (Myers, 1984; Jensen, 1986; Fama & French, 2002; Leary & Roberts, 2010). The decision to issue debt also sends a positive signal to the market, suggesting that management believes in the firm's ability to generate sufficient future cash flows to service the debt (Ross, 1977; Myers, 1984; Alfarizzi & Sasongko 2024; Fama & French, 2005).

Moreover, equity financing is considered the least preferred option in the pecking order due to its high costs and negative signaling effects. Issuing new equity can be expensive because of underwriting fees, legal costs, and the potential for underpricing (Myers, 1984; Alfarizzi & Sasongko 2024; Fama & French, 2005; Shyam-Sunder & Myers, 1999). Furthermore, issuing equity can signal to the market that management believes the firm's stock is overvalued, leading to a potential decline in stock price (Myers & Majluf, 1984; Myers, 1984; Frank & Goyal, 2003; Fama & French, 2005). This adverse selection problem makes firms hesitant to issue equity unless absolutely necessary (Myers & Majluf, 1984; Myers, 1984; Alfarizzi & Sasongko 2024; Fama & French, 2005).

Empirical studies provide mixed evidence on the validity of the Pecking Order Theory. Some studies support the theory; however, other studies suggest that firms do not strictly follow the pecking order, particularly small and high-growth firms, which may rely more on equity financing due to limited internal funds and high debt capacity (Fama & French, 2005; Myers, 1984; Frank & Goyal, 2003; Leary & Roberts, 2010). Critics also argue that the theory does not account for factors such as market timing, agency costs, and the dynamic nature of financing decisions (Baker & Wurgler, 2002; Mursalini et al (2024); Myers, 2001; Fama & French, 2005).

The Market Timing Theory argues that firms strategically issue equity when stock prices are favorable and repurchase shares during periods of undervaluation, leveraging market fluctuations to optimize financing outcomes (Baker & Wurgler, 2002; Mursalini et al (2024); Myers, 2001; Alfarizzi & Sasongko 2024). These contrasting theories provide complementary insights into the factors influencing capital structure decisions. These theories provide alternative perspectives on capital structure decisions, highlighting the complexity and multifaceted nature of corporate financing (Myers, 1984; Mursalini et al (2024); Baker & Wurgler, 2002; Fama & French, 2005).

In practice, the Pecking Order Theory has been observed in various industries and firm sizes. Large, established firms with stable cash flows and substantial retained earnings tend to follow the pecking order more closely, relying heavily on internal funds and conservative debt levels (Myers, 1984; Alfarizzi & Sasongko 2024; Fama & French, 2002; Leary & Roberts, 2010). In contrast, smaller, high-growth firms may deviate from the pecking order due to their need for external financing and limited access to internal funds (Fama & French, 2005; Myers, 1984; Alfarizzi & Sasongko 2024; Leary & Roberts, 2010). Myers (1984), Mursalini et al (2024) Fama and French (2002), and Baker and Wurgler (2002) all agree that a better understanding of the subtleties of the Pecking Order Theory is helpful in explaining the diversity of capital structure decisions that are made across companies and industries.

2.2.2 Modigliani and Miller Theory

Modigliani-Miller Theory was initially presented by Modigliani and Miller in the year 1958. According to this theory, the value of a company is entirely unaffected by its capital structure in a market that is perfect in every way, including the absence of taxes, expenses associated with bankruptcy, and information asymmetry. According to Modigliani and Miller (1958), this indicates that the overall market value of a company that uses debt (also known as leveraged) is the same as the value of a company that relies only on equity (in other words, unleveraged firms). This idea presents a challenge to the conventional viewpoint, which maintains that the value of a company can be raised by modifying the ratio of its debt to its equity. For example, Modigliani and Miller (1958), Myers (1984), Fama and French (2002), and Graham (2000).

Despite the fact that the initial M&M propositions were founded on the idea of a perfect market, the conditions that exist in the real world include elements such as taxes, fees associated with bankruptcy, and agency charges. When corporate taxes are present, this adjustment indicates that the value of a leveraged firm is greater than that of an unleveraged firm by the present value of the tax shield on debt (Vo, 2021; Myers, 1984; Fama & French, 2002; Mursalini et al., 2024). This is the case because leveraged firms are able to take advantage of the tax shield on debt. Because of the tax benefits associated with debt, businesses tend to make decisions regarding their capital structure that are more favourable to debt financing.

Despite its theoretical elegance, the Modigliani and Miller Theory has faced criticism and has been refined over time to address practical considerations. One significant critique is that it does not

account for bankruptcy costs. As firms increase their leverage, the risk of financial distress and bankruptcy rises, leading to potential costs such as legal fees, asset liquidation losses, and impaired business operations (Baxter, 1967; Myers, 1977; Warner, 1977; Altman, 1984). When management have more information about the underlying value of the company, Myers and Majluf (1984) indicate that they may only issue equity when they believe that the stock of the company is overvalued, which can lead to adverse selection problems. This information asymmetry can cause equity issuance to be viewed negatively by the market, resulting in a lower stock price (Myers & Majluf, 1984; Ross, 1977; Myers, 1984; Fama & French, 2002). Consequently, firms may prefer debt over equity to avoid these negative signals, consistent with the pecking order theory.

Empirical evidence on the Modigliani and Miller Theory is mixed, reflecting the complexity of real-world financing decisions. Studies support the presence of tax benefits from debt (Mackie-Mason, 1990; Mursalini et al (2024), but also highlight the importance of bankruptcy and agency costs in determining optimal leverage (Warner, 1977; Altman, 1984; Jensen, 1986; Leary & Roberts, 2005). Furthermore, market imperfections such as information asymmetry and managerial incentives play crucial roles in shaping capital structure choices (Myers & Majluf, 1984; Ross, 1977; Myers, 1984; Fama & French, 2002).

This theory advances the researcher's understanding of capital structure and corporate finance. It provides a foundational framework for analyzing the impact of leverage on financial performance of banks in Kenya focusing on value and cost of capital, while subsequent refinements and critiques have incorporated practical considerations and market imperfections (Modigliani & Miller, 1958; Myers, 1984; Fama & French, 2002; Mursalini et al., 2024). Despite its limitations, the theory remains a cornerstone in this study because it guides both academic research and practical financial decision-making (Modigliani & Miller, 1958; Myers, 1984; Fama & French, 2002; West et al. 2024).

2.2.3 Trade-Off Theory

The Trade-Off Theory, which was first presented by Modigliani and Miller in 1963, explains how businesses determine the most effective capital structure by analysing the advantages of debt in comparison to the costs that are connected with it. This tax shield incentivizes firms to utilize debt, as it enhances firm value by increasing after-tax cash flows (Candradewi 2020; West et al. 2024; Myers, 1984). The tax benefits grow with increased debt usage, but only up to a certain limit. This

element of the Trade-Off Theory emphasizes the significance of accounting for tax advantages in financing decisions, as effectively leveraging these benefits can substantially influence a firm's financial performance (West et al. 2024; Myers, 1984; Alfarizzi & Sasongko 2024; Candradewi 2020)

However, the use of debt is not without its drawbacks. As firms increase their reliance on debt, the likelihood and costs associated with financial distress and bankruptcy also rise. These costs can be categorized into direct costs, such as legal and administrative expenses, and indirect costs, including the loss of customers, strained supplier relationships, and reduced employee morale (Baxter, 1967; Warner, 1977; Alfarizzi & Sasongko 2024; Andrade & Kaplan, 2013). Such expenses can diminish the advantages of the tax shield, discouraging firms from adopting excessively high levels of leverage. This balance ensures that firms maximize their value while managing the risks associated with their financing decisions.

The dynamic character of the Trade-Off Theory places an emphasis on the fact that businesses continually modify their capital structures in response to shifting market conditions, factors that are special to the company, and decisions made by managerial personnel. The empirical research conducted by Alfarizzi and Sasongko (2024), Satoto et al (2023) and Hovakimian, Opler, and Titman (2001) demonstrates that over the course of time, companies increasingly align themselves with their goal leverage ratios. These modifications are influenced by a variety of factors, including profitability, asset tangibility, development possibilities, and market conditions, all of which play a significant role in determining the best capital structure for a company (Fama & French, 2002; Leary & Roberts, 2005; Satoto et al.,2023)

Critics contend that other factors, such as market timing, pecking order preferences, and behavioral considerations, also significantly influence financing decisions (Baker & Wurgler, 2002; Myers, 1984; Alfarizzi & Sasongko 2024; West et al. 2024). Although the Trade-Off Theory has been subject to debate, it continues to serve as a valuable lens for examining how firms determine their capital structure. The theory emphasizes the need for organizations to weigh the advantages of debt, such as tax benefits, against the potential downsides, like financial distress. It offers a clear rationale for why companies adjust their mix of debt and equity over time in pursuit of an optimal balance. Even with the emergence of competing perspectives, this theory remains central to understanding the financial strategies firms adopt to manage risk and sustain performance. It

underscores the dynamic nature of capital structure decisions as essential to long-term financial planning. The concept suggests that finding the ideal capital structure involves balancing the benefits of debt-related tax savings with the potential risks of financial instability. Incorporating bank size as a moderating factor helps clarify how leverage influences performance within different banking contexts. This broader understanding can ultimately support strategies that enhance investor returns.

2.3 Empirical Literature Review

An empirical literature review is a summary and discusses of previous publications on a topic. Empirical review explores past research and their strengths and weaknesses as compared to the current topic of study, it is used to validate the target and methods that has been chosen for the current proposed research.

2.3.1 Debt-To-Equity Ratio and Financial Performance

A study by Maringka (2024) assessed the influence of return on assets (ROA) and debt-equity ratio (DER) on stock prices, with financial performance, represented by return on equity (ROE), as a moderating variable. The analysis revealed that improved asset profitability was associated with rising stock values, whereas a heavier reliance on debt financing corresponded with declines in share prices. When return on equity (ROE) was applied as a moderating factor, it was found to dampen the influence of asset-based profitability on market valuation. On the other hand, ROE appeared to enhance the effect of financial leverage, making the relationship between debt levels and stock prices both positive and significant under its influence. The study concluded that appropriate financial asset allocation enhances market expectations, leading to higher stock prices. However, asset management in the mining industry did not show an increase in company value as reflected by ROE, which negatively impacted stock prices. The findings suggested that effective management of ROE strengthens the influence of DER on stock prices, highlighting the importance of accurate financial performance assessment in the mining industry.

Kalash (2023) assessed the relationship between financial leverage and financial performance was investigated using data from 45 publicly listed Brazilian firms across various industries. The research utilized a multiple regression model to explore the effect of DER on profitability, measured through Return on Assets (ROA) and Return on Equity (ROE). The study found that higher levels of debt financing, reflected by a higher debt-to-equity ratio, had a significant negative

effect on both ROA and ROE. This negative relationship was attributed to the increasing financial distress costs that arise with high levels of debt, which constrains the firms' ability to generate profits. Additionally, the study suggested that firms with higher leverage faced difficulties in achieving optimal profitability due to higher interest expenses and the pressure of debt repayment obligations. The results also aligned with the trade-off theory, which posits that while debt can be beneficial in tax shields, excessive debt can harm profitability by increasing financial risk. The researchers concluded that Brazilian firms, particularly those in capital-intensive industries, must carefully manage their debt levels to avoid diminishing returns on equity.

A study by Zaidi et al. (2024) examined the relationship between financial leverage and firm performance in the Malaysian context by analyzing 100 publicly listed companies from various sectors on Bursa Malaysia between 2015 and 2020. The study employed a dynamic panel data model to assess the effects of DER on profitability and firm value. The results indicated a statistically significant negative relationship between DER and firm performance, specifically in terms of ROA and Tobin's Q. The study highlighted that companies with high leverage faced increased financial risk, which adversely affected their profitability. This was particularly evident in the manufacturing and service sectors, where debt servicing costs significantly outweighed the benefits of leverage. The authors argued that while debt could potentially increase firm value under optimal conditions, excessive leverage, as reflected by a high DER, led to reduced financial flexibility and efficiency, which, in turn, negatively impacted firm performance. Their findings supported the agency theory, which suggests that the interests of debt holders and shareholders often diverge, leading to inefficient management when debt levels are too high.

A study by Arhinful et al. (2023) explored the impact of capital structure, specifically DER, on the financial performance of 20 Ghanaian financial institutions from 2018 to 2022. Using fixed-effects regression analysis, the study found a significant inverse relationship between DER and ROA, suggesting that as financial institutions increased their reliance on debt financing, their profitability decreased. The authors explained that higher debt levels increased the financial risk for the banks, leading to greater vulnerability in times of economic instability. Furthermore, the study noted that the high cost of servicing debt limited the ability of these institutions to invest in long-term growth opportunities, as significant portions of their earnings were directed towards interest payments. The researchers concluded that financial institutions in Ghana should adopt more conservative capital structures, particularly in times of economic uncertainty, to enhance their long-term

profitability and financial stability. The study provided evidence that excessive leverage undermines profitability, especially in developing economies with volatile financial environments. Mwiti and Gitagia (2024) investigated the effect of long-term debt on the financial performance of manufacturing firms listed on the Nairobi Securities Exchange (NSE) from 2015 to 2020. The study used a combination of correlation and regression analysis to assess how DER influenced profitability indicators such as ROA, ROE, and net profit margin. The results showed a statistically significant negative relationship between DER and both ROA and net profit margin, indicating that firms with higher leverage experienced lower profitability. The authors argued that while debt financing can be a useful tool for financing growth, firms in Kenya's manufacturing sector faced substantial challenges in managing high debt levels. The increased interest payments associated with higher DER limited the firms' capacity to reinvest earnings into business expansion and operational improvements. Moreover, the study found that the relationship between DER and financial performance was particularly strong during periods of high interest rates, highlighting the sensitivity of leveraged firms to macroeconomic conditions. The study supported the Pecking Order Theory, which emphasizes that firms prefer to use internal financing before resorting to external debt, and suggested that a more balanced approach to capital structure could help enhance the profitability of Kenyan manufacturing firms.

In Malaysia, Su et al. (2024) examined the relationship between financial ratios and firm efficiency among 30 publicly listed companies across the energy, plantation, and consumer sectors on Bursa Malaysia. The study utilized financial data from recent fiscal years to construct regression models testing the impact of DER, current ratio, total asset turnover, and debt ratio on financial efficiency. The findings revealed that the debt-to-equity ratio had a statistically significant negative influence on firm efficiency. This indicated that firms with higher levels of leverage tended to perform less efficiently, as increased debt servicing obligations constrained their operational agility and resource utilization. While the total debt ratio (debt-to-total assets) showed a positive but statistically insignificant relationship with efficiency, the study emphasized that the negative implications of a high DER were consistent with the predictions of both agency theory and the resource-based view. The researchers concluded that overly leveraged firms in Malaysia faced challenges in sustaining efficient operations, potentially due to heightened financial risk and limited flexibility in responding to market dynamics.

2.3.2Debt-to-Total Assets Ratio and Financial Performance

Sari and Rochmatullah (2024) collected data from food and beverage companies listed on the Indonesia Stock Exchange from 2019 to 2022 with the intention of studying how various financial ratios affected their stock prices. Secondary data were gathered from a group of 43 publicly listed food and beverage firms for this investigation. It was discovered that the Return on Equity of these companies had a considerable impact on the stock prices of these industries. The study concluded that while liquidity and leverage ratios may not be strong determinants of stock prices in the food and beverage sector, profitability measures, particularly Return on Equity, play a crucial role in influencing investor perceptions and stock valuations. The study recommended that companies focus on improving their return on equity to enhance stock market performance and attract potential investors.

In Brazil, Rocha and Camargos (2024) conducted a study to empirically test the relationship between financing choices of companies and the abnormal returns obtained by their shareholders. The study introduced an innovative approach by incorporating controls on how this relationship is influenced by the capabilities of each funding source at different return levels using quantile regression. The model was estimated using a sample of Brazilian companies. The results indicated no significant relationship between abnormal returns and debt issuance or equity issuance, except in cases where there is a deficit of internal financing that exceeds the available safe debt and the abnormal returns are at least median. In these specific instances, the relationship becomes significant and positive. The findings suggested that companies are indifferent to the sources of funds they use.

In a study by Farah et al. (2021) the relationship between the Debt-to-Total Assets Ratio (DAR) and the financial performance of Brazilian retail firms was explored using data from 40 publicly listed companies between 2017 and 2021. Using a dynamic panel regression model, the study found a significant negative correlation between DAR and Return on Assets (ROA). The study suggested that as firms increased their reliance on debt financing, they encountered higher financial risks, which reduced their ability to generate profits. This finding was particularly evident in the retail sector, where high debt servicing costs took precedence over investments in inventory and growth initiatives. The authors concluded that firms in Brazil's retail sector must balance their

debt-to-assets ratio carefully to maintain profitability, especially amidst economic fluctuations and increasing interest rates.

A study by Yugi and Wekesa (2023) investigated the effect of debt-to-total assets ratio on the financial performance of 50 companies listed on the Singapore Exchange from 2016 to 2021. The research used multiple regression analysis and found a statistically significant negative relationship between DAR and Return on Equity. The authors explained that companies with higher debt levels faced increased financial pressure, reducing their ability to maximize shareholder returns. Despite the short-term advantages of debt financing, the study concluded that firms in Singapore's highly competitive market should consider reducing their leverage to avoid the long-term detrimental effects on profitability, including heightened interest payment obligations and reduced financial flexibility. The study suggested a more conservative debt policy to enhance long-term sustainability.

In a study by Al-Manaseer (2024) the impact of debt-to-total assets ratio on the financial performance of South African banks was analyzed, using data from 12 major banks from 2017 to 2022. The study used a fixed-effects regression model to assess the relationship between DAR and profitability indicators such as Return on Assets (ROA) and Return on Equity (ROE). The findings revealed a negative correlation between high leverage and both ROA and ROE, suggesting that banks with higher debt levels faced reduced profitability. The study attributed this to increased financial costs and risk exposure associated with higher debt ratios, which constrained the banks' ability to efficiently allocate resources. The authors recommended that South African banks adopt a more cautious approach to debt financing, particularly in light of the country's volatile economic conditions, which can exacerbate the risks associated with high leverage.

A study by West et al. (2024) examined the effect of capital structure, specifically the Debt-to-Total Assets Ratio (DAR), on the financial performance of Australian agricultural firms over the period 2015 to 2020. The researchers used regression analysis to investigate the relationship between DAR and profitability measures such as Return on Assets (ROA) and operating profit margin. The results indicated a positive relationship between DAR and financial performance, suggesting that agricultural firms in Australia benefited from higher debt levels by using borrowed capital to invest in equipment and infrastructure that led to higher operational returns. However, the study noted that the positive effect of leverage was contingent on the industry's stable market

conditions, and excessive debt could lead to financial instability in times of economic downturns. The authors suggested that Australian agricultural firms should maintain an optimal balance of debt to enhance operational efficiency while mitigating financial risks.

Kibunja and Fatoki (2020) conducted a study on the financial performance of non-financial firms listed on the Nairobi Securities Exchange (NSE) between 2013 and 2017, specifically examining the impact of debt financing on business performance. The study found that relying on short- and medium-term borrowing tended to reduce return on equity (ROE), implying a negative effect on financial outcomes. Although long-term debt appeared to have a favorable link with ROE, the connection lacked statistical strength, meaning its influence was not definitive. Based on these findings, the researchers advise non-banking firms to carefully manage their debt mix, as different types of borrowing have varying implications for financial performance. Future research is encouraged to explore additional factors that may influence profitability among Kenya's non-financial companies.

2.3.3 Long-Term Debt Ratio and Financial Performance

While evaluating the influence of capital structure on financial performance, Anozie et al. (2023) examined oil and gas firms in Nigeria to determine how different financing approaches impact return on assets (ROA). The study considered elements such as total debt, equity, and the ratio of short-term debt to total assets. The results indicated a mildly positive association between ROA and both the debt-to-equity ratio and short-term debt levels, suggesting that short-term borrowing may offer some financial advantage. In contrast, a higher proportion of long-term debt was linked to lower ROA, signaling that excessive long-term liabilities could hinder firm profitability. Based on these insights, the researchers recommended that industry players manage their capital mix carefully, particularly by limiting long-term borrowing. They further emphasized the need for future research to explore other determinants of financial success in the sector (Abdullahi et al., 2023).

The study by Shikumo et al. (2020) looked at how non-financial companies listed on the NSE fared financially when they took out long-term loans. Because many non-financial businesses that are listed on the NSE have been facing a drop in their financial performance, which discourages investors and lenders, the study attempted to uncover conservative financing solutions that may result in financial growth. This was driven by the fact that more and more non-financial businesses

are experiencing this decline. The research was conducted using an explanatory research approach, and the decision was made not to include financial firms due to the distinctive characteristics of the sector and the stringent regulatory environment. It was discovered in the study that non-financial companies that are listed on the NSE had to make use of various funding methods in order to increase their market capitalisation and earnings per share. The value of the company to its stakeholders will increase as a result of this. For the purpose of achieving the greatest possible financial growth in the industry, the researchers recommended conducting additional research into various funding methods.

In a study by Lidovolo and Atieno (2023) the impact of Long-Term Debt Ratio on the financial performance of German manufacturing firms was explored using data from 60 publicly listed companies over the period 2017 to 2021. The researchers applied panel data regression analysis to examine the relationship between long-term debt ratio and profitability, measured through Return on Assets (ROA) and Return on Equity (ROE). The study found a significant positive correlation between long-term debt ratio and both ROA and ROE. The authors argued that the use of long-term debt allowed firms to finance long-term growth projects, thereby enhancing their profitability in the long run. The positive impact of long-term debt was attributed to lower interest rates associated with longer borrowing periods, which reduced the financial burden compared to short-term debt. The researchers concluded that, for German manufacturing firms, long-term debt serves as an important tool for financing growth without compromising profitability.

A study by Tushabe et al. (2025) examined the effect of the long-term debt ratio on the financial performance of Ugandan commercial banks, using data from 15 banks between 2018 and 2022. The study employed a fixed-effects regression model to assess the relationship between long-term debt and profitability, focusing on return on assets and net profit margin. The results revealed a negative but statistically insignificant relationship between the long-term debt ratio and profitability. The authors suggested that although long-term debt could provide stability and access to capital for Ugandan banks, the negative effect on profitability was likely due to the high cost of long-term borrowing in Uganda's high-interest-rate environment. The study recommended that banks in Uganda focus on optimizing their capital structures by balancing debt and equity to mitigate the adverse effects of high leverage while ensuring financial stability.

In a study by Lidovolo and Atieno (2023) the impact of the long-term debt ratio on the financial performance of Tanzanian firms listed on the Dar es Salaam Stock Exchange was analyzed, covering 50 firms from 2016 to 2021. Using regression analysis, the study found a positive relationship between long-term debt ratio and Return on Assets. The researchers attributed the positive relationship to the fact that long-term debt provides firms with the ability to finance large capital-intensive projects, which could improve asset efficiency and overall profitability. However, the study also noted that firms with very high levels of long-term debt experienced diminishing returns due to rising interest costs and the risk of over-leverage. The authors concluded that while long-term debt could enhance firm performance, companies in Tanzania needed to carefully manage their leverage levels to avoid financial strain, particularly during periods of economic instability.

Wambua and Kamau (2024) investigated the relationship between the long-term debt ratio and the financial performance of Kenyan telecommunications firms over the period 2015 to 2020. Using a regression analysis, the study found a positive relationship between long-term debt ratio and profitability, as measured by Return on Assets (ROA) and Return on Equity (ROE). The authors highlighted that the ability of firms in Kenya's telecommunications sector to use long-term debt to finance infrastructure investments, such as network expansion, led to increased profitability. The study further found that the positive impact of long-term debt was more pronounced in firms with stable cash flows, as these firms were better able to meet their debt obligations. The researchers concluded that for Kenyan telecommunications firms, long-term debt is a crucial financing tool for expanding operations and improving performance, but it must be managed cautiously to avoid financial distress.

Pyoko (2024) looked at the long-term debt of NSE-listed companies and how it changed with company growth and profitability. The knowledge that interest on long-term debt is tax deductible, which influences a firm's spending and profitability, inspired the study. A company's market worth and investor appeal can be enhanced by increasing its firm size, which is measured by its assets. The study utilized panel data methods to evaluate secondary data from enterprises from 2007 to 2011. The data was based on trade-off theory and pecking order theory. According to the findings, long-term debt was significantly affected by profitability, but business size had no effect. Research shows that bigger companies should weigh the pros and cons of debt financing in order to get the best terms for long-term loans, taking advantage of their access to capital markets. In order to

minimize financial costs and dependency on external debt, it was also suggested that highly profitable enterprises should prioritize internal financing sources.

2.3.4 Short-Term Debt Ratio and Financial Performance

A study by Mugisha et al. (2020) aimed to address a gap in existing literature by providing empirical insights into this relationship. Adopting a descriptive cross-sectional design, the study sampled 453 SMEs through stratified random sampling, with one respondent per SME selected purposively. The study highlighted that reliance on short-term debt can undermine profitability and hinder growth. As a result, SMEs were advised to adopt more cost-effective operational strategies to enhance their financial efficiency and reduce dependence on external borrowing for investments. The study also recommended further qualitative research to explore the underlying factors contributing to the adverse effects of short-term debt on SME financial performance.

Musah (2020) examined the relationship between commercial banks in Ghana and their capital structure and profitability. A total of twenty-three banks' annual reports provided the data used in this analysis, which covers the years 2010–2015. Even though the minimum equity capital required by law has increased, 84% of total capital is funded by debt, with 77% of that being short-term debt. The numbers reveal that banks in Ghana are heavily indebted. The study's narrow emphasis on Ghanaian commercial banks also means it leaves out important background information. There can be differences in the capital structure of these banks compared to their Kenyan equivalents. Previous research used multiple regression models to assess the impact of capital structure on profitability of Kenyan commercial banks listed on public exchanges; however, the present study used a panel model.

In a study by O'Reilly and McGrath (2023), the effect of short-term debt-to-total assets on the financial performance of firms in Ireland was explored, focusing on 90 publicly listed companies from 2017 to 2021. Using panel regression models, the researchers found a negative correlation between STDA and profitability indicators such as return on assets and return on equity. The study showed that companies with higher short-term debt obligations relative to total assets faced liquidity challenges, leading to reduced profitability due to higher financial costs and tighter cash flows. The authors noted that the high reliance on short-term debt restricted firms' ability to invest in growth and development, making them more susceptible to economic fluctuations. They

concluded that firms in Ireland should minimize short-term debt reliance to ensure better financial performance and stability.

A study by Fonchamnyo et al. (2023) investigated the relationship between current liabilities-to-equity ratio and the financial performance of Cameroonian manufacturing firms listed on the Douala Stock Exchange between 2016 and 2021. The researchers used regression analysis and found that a higher CLER had a significant negative effect on both return on assets and net profit margin. The study indicated that firms with high short-term debt relative to equity struggled with debt servicing, which reduced their profitability and operational flexibility. The authors explained that the need for frequent debt repayments led to higher operational costs, limiting reinvestment opportunities. The study recommended that firms in Cameroon adopt more balanced capital structures, reducing the reliance on short-term debt to enhance long-term profitability.

In a study by Duc (2025) the impact of short-term debt-to-capital ratio on financial performance was analyzed in 40 Rwandan firms from the manufacturing sector between 2017 and 2022. The study applied fixed-effects regression analysis and found a statistically significant negative relationship between STDR and Return on Equity. The researchers suggested that firms in Rwanda with high short-term debt ratios relative to capital faced constraints in their ability to generate profits due to the pressure of frequent debt payments. The authors argued that firms with higher short-term debt struggled to maintain cash flow stability, which led to higher financial stress and reduced profitability. The study concluded that firms should seek to reduce short-term debt and focus on more stable forms of financing to enhance their financial performance and sustainability.

A study by Otieno and Mutiso (2024) examined the effect of short-term debt-to-total assets **Ratio** on the financial performance of Kenyan retail firms over the period 2015 to 2020. The study used regression analysis and found that higher STDTR was associated with lower return on assets and net profit margin. The researchers highlighted that while short-term debt helped firms meet immediate working capital needs, it also increased financial pressure due to the short repayment periods, limiting profitability. The study noted that retail firms with high short-term debt struggled to maintain stable cash flows, which hindered their ability to reinvest in expansion and innovation. The authors recommended that Kenyan retail firms adopt a more conservative approach to financing by reducing short-term debt and exploring more flexible, long-term financing options to improve profitability and reduce financial risks.

Amponsah (2022) looked at the financial performance of Ghanaian listed banks and how capital structure affected them. Listed banks in Ghana fared worse financially when inflation was considered positively related to their performance, whereas the currency rate was considered negatively related. The research concluded that bank management should set performance-enhancing credit policies, such as debt ceilings and -deficits, to cut down on financing expenses. In order to keep financing expenses from having a detrimental effect on financial performance, managers should keep a close eye on the debt-to-equity ratio.

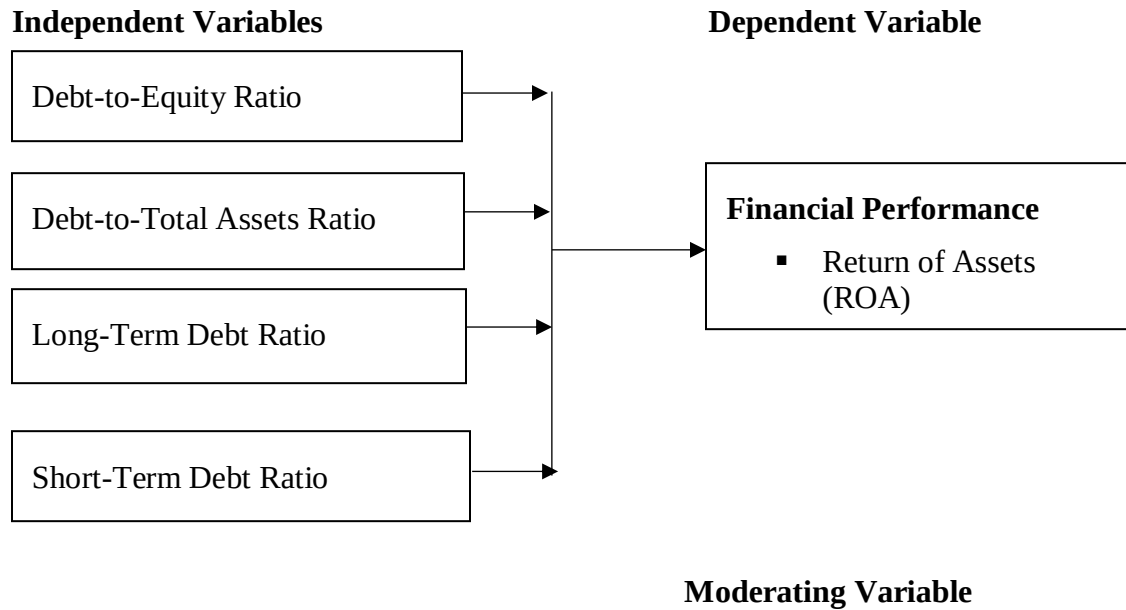
Study by Shikumo et al. (2020) was founded on the Agency Theory and the Theory of the Growth of the Firm, did not include financial institutions because of the unique qualities they possess and the rigorous regulatory environment in which they operate. Short-term debt was found to have a considerable influence on financial growth, as evidenced by the fact that it accounted for 45.99% of the variance in profits per share (EPS) growth and 25.6% of the variance in market capitalization growth. According to the findings of the study, management in non-financial organizations should use financing techniques that boost earnings per share and market capitalization in order to be able to maintain growth. In addition, it was advised that additional study be conducted in order to establish appropriate methods of funding methods in order to guarantee steady financial development within the industry.

2.5 Conceptual Framework

This study adopts the conceptual framework illustrated in Figure 2.1.

Figure 2.1:

Conceptual Framework



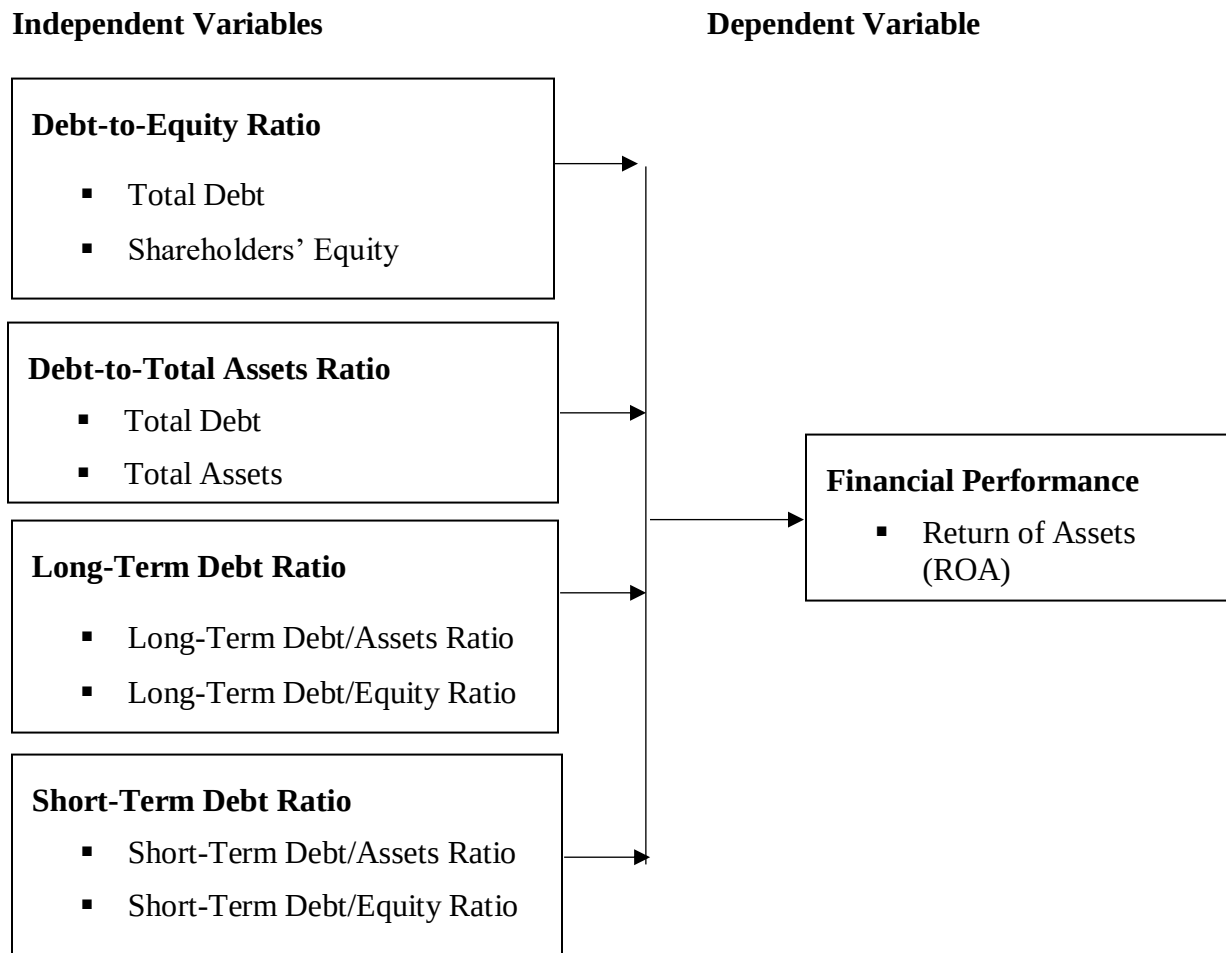
Source: Researcher (2025)

2.5.1 Operational Framework

The operational framework in Table Figure 2.2 outlines how key study variables were defined, measured, and analyzed to assess the relationship between financial leverage and financial performance. It specifies the type of variables, measurement scales, data sources, and applicable analytical methods. This structured approach ensures clarity, consistency, and empirical alignment throughout the research process.

Figure 2.2:

Operational Framework



Financial leverage was operationalized using four key ratios to evaluate its effect on the financial performance of Kenyan banks. The debt-to-equity ratio was computed by dividing total debt by shareholders' equity, reflecting the extent to which banks use borrowed funds relative to owners' capital. A higher ratio suggests greater reliance on external financing. The debt-to-total assets ratio was derived by dividing total debt by total assets, indicating the proportion of a bank's assets financed through debt, with higher values denoting increased financial risk exposure.

In addition, the long-term debt ratio was measured using two metrics: the long-term debt to total assets ratio and the long-term debt to equity ratio. These measures provide details on the bank's long-term financing structure and stability, showing how much of the long-term capital structure

is supported by debt. Similarly, the short-term debt ratio was assessed using short-term debt to assets and short-term debt to equity ratios, which reflect the bank's dependency on short-term liabilities. Financial performance was measured using Return on Assets (ROA), calculated as net income divided by total assets, representing the efficiency of asset utilization in generating profits.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used in undertaking the study. The chapter covers the research design that was adopted; according to Ritchie et al. (2013) a central part of research is to develop an efficient research design.

3.2 Research Philosophy

Important assumptions regarding researchers' worldviews are contained in research philosophy, which is concerned with the growth and character of knowledge (Saunders, et al.,2007). When it comes to philosophical debates about truth and knowledge, there are two competing extremes. Two of these schools of thought are phenomenology and positivism, which are alternative names for the same branch of study: induction and deduction, respectively. Focusing on the here and now, phenomenology is a scientific philosophical tradition. In phenomenology, the researcher is open, trusts experience, and begins with the unknown. It presents facts without bias, detailing situations as they actually are. The phenomenological approach is more comprehensive and less reductionist. Rather than dissecting events, they observe them in their natural state.

The positivist worldview guided this investigation. The rationale behind opting for positivism was that it relies on the testing and generalization of hypotheses to establish the links between variables through empirical means. Under this positivist paradigm, researchers used scientific methods to test their hypotheses regarding the relationship between the study variables by first postulating basic laws and then drawing conclusions from the data. Consequently, the study's overarching goal is to conduct empirical tests that validate the hypotheses by making the conceptual framework's variables measurable through operationalization.

3.3 Research Design

A panel research design was utilized for this investigation. In light of the fact that panel data was utilized, the panel study design is the most appropriate. This approach was considered the most suitable for this research in providing information on the operational influence that the variables have. Because it is able to successfully shed light on a perceived problem at any given moment, the panel research design is an appropriate choice for this particular study. This necessitates

revealing the relationship between the problem and the solution, which is why it is recommended to appreciate a problem before attempting to find a solution (Saunders et al., 2009).

3.4 Target Population

This study examined all 40 licensed commercial banks operating in Kenya between 2019 and 2023, including 28 locally owned and 12 foreign-owned institutions. These banks, regulated by the Central Bank of Kenya, play a central role in maintaining financial discipline and oversight within the sector. The research concentrated on this group due to their critical role in driving Kenya's economic development through services such as lending, mobilizing deposits, and supporting investments. Understanding their financial leverage was key, as it influences their profitability, resilience, and capacity to navigate financial risks effectively.

3.5 Sample and Sampling Technique

The study performed a census of all 40 commercial banks in Kenya, as the population's manageable size obviates the necessity for sampling. Employing a census methodology guarantees an elevated degree of statistical confidence in the results by collecting data from the complete population. This method allows for a thorough and detailed analysis of the subject, offering enhanced precision in the results. Given the small size and heterogeneity of the population, the census method is the most suitable and accurate approach for this study.

3.6 Data Collection Procedure

Information about the dependent and independent variables was gathered using the document review guide. Panel data was a part of the secondary data. Data quality and quantity can be significantly improved by combining time series and cross-sections, surpassing what would be achievable with only one of these dimensions alone (Gujarati & Porter, 2003). Since the data for the years 2019–2023, which are current and readily available, constituted the panel data, while the enterprises constituted the cross-sectional data. All of the study's variables had their data pulled from the 2019–2023 annual reports of Kenyan commercial banks.

The sample data covered the years 2019 through 2023. In order to guarantee that the data collected is accurate, certain filters will be used, as per Abdullahi et al. (2023). All items from the financial statements that exhibited indications of not conforming to reasonable expectations were removed. Each year was considered as having 1% of the observations missing in each tail of the distribution

for each variable, due to the numerous influential observations and data mistakes in the panel data that has to be studied. Such findings are in line with those of earlier research

3.7 Data Analysis

According to Duxbury (2021) panel data consists of observations on multiple entities over several time periods, making it ideal for examining changes at the individual commercial bank level. This approach provides the ability to establish the time sequence of variables and explore the development of relationships (Bonhomme et al., 2021). Panel regression analysis is particularly advantageous as it accounts for individual heterogeneity, reducing biases associated with entity-specific effects (Hsiao, 2007). The use of panel data thus ensures more robust results and meaningful insights. Finally, panel data regression enables a comprehensive understanding of the relationships between variables by accounting for temporal and individual-specific factors. The results will be summarized and presented in tabular form to provide a clear and organized depiction of the findings.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + e_{it} \dots \dots \dots 3.1$$

Where;

Y_{it} = Financial Performance

X_{1it} = Debt-to-Equity Ratio

X_{2it} = Debt-to-Total Assets Ratio

X_{3it} = Long-Term Debt Ratio

X_{4it} = Short-Term Debt Ratio

3.8 Panel Diagnostic Tests

3.8.1 Panel Unit Root Test

The study employed the LLC test to assess the stationarity of the variables and determine whether they exhibit unit roots. Conducting this test is crucial to prevent spurious regression results that can arise from using non-stationary data series. If the test reveals that any variable is non-stationary, the researcher addresses this issue by differencing the variable. The equations are then

re-estimated using the differenced data to ensure the validity and reliability of the regression results.

3.8.2 Test for Fixed or Random Effects

Fixed effects models assume firm-specific intercepts to capture time-invariant effects, while random effects models assume a common intercept that varies randomly across firms. Random effects are efficient; otherwise, fixed effects are preferred. If fixed effects are chosen, an F-test is used to determine the inclusion of time-fixed effects by testing whether yearly dummy variables are significant.

3.8.3 Normality Tests

When conducting single or joint hypothesis tests on the parameters of the model, it is crucial to make the assumption of normalcy ($u_t \sim N(0, \sigma^2)$) in order to ensure reliability and accuracy. For the purpose of determining whether or not the data adhere to a normal distribution, the Skewness and Kurtosis tests were utilized in this investigation.

3.8.4 Multicollinearity

Multicollinearity refers to the potential for collinearity among independent variables. In regression analysis, a critical assumption is that the regression model must not encounter issues of multicollinearity. Correlation is a problem since an independent variable must remain truly independent. This study assessed collinearity using the VIF approach, with a VIF value below 10 indicating the absence of multicollinearity in the data. If the test identifies two or more highly associated components, one will be excluded from the study model.

3.8.5 Autocorrelation

Combining time-series and cross-sectional data sets increases the likelihood of serial correlation, a problem with panel data analysis that can lead to regression assumptions being violated. Wooldridge (2002) explains that inefficient parameter estimates and biased standard errors can result from a panel model's idiosyncratic error term that is not properly addressed, which includes serial correlation. The Wooldridge test's null hypothesis states that serial correlation does not exist.

3.8.6 Heteroscedasticity

The error term should have constant variance, referred to as homoskedasticity. Any violation of this assumption results in heteroscedasticity, which, if unaddressed, may lead to inefficient parameter estimates in regression analysis. In order to identify heteroscedasticity, the Breusch-Pagan/Godfrey test was carried out, with the assumption of homoskedastic error variance serving as the null hypothesis underlying the test. If the test rejects the null hypothesis, confirming heteroscedasticity in the panel data, the FGLS model will be applied to correct for it and ensure reliable results.

3.9 Hypothesis Testing

The summary of the hypothesis testing is as shown in Table 3.2.

Table 3.2:*Summary of Statistical Test of Hypotheses*

Objective	Hypotheses	Method and Decision Rule
Objective 1		
To determine the effect of debt to equity ratio on the financial performance of Kenyan banks	H₀₁: Debt-to-equity ratio has no statistically significant effect on the financial performance of Kenyan	Regression P-value 0.05
Objective 2		
To assess the effect of debt to total asset ratio on the financial performance of Kenyan Banks	H₀₂: Debt-to-total assets ratio has no statistically significant effect on the financial performance of Kenyan	Regression P-value 0.05
Objective 3		
To examine the effect of long term debt ratio on the financial performance of Kenyan Banks	H₀₃: Long term debt ratio has no statistically significant effect on the financial performance of Kenyan	Regression P-value 0.05
Objective 4		
To investigate the effect of short-term debt ratio on the financial performance of Kenyan Banks	H₀₄: Short term debt ratio has no statistically significant effect on the financial performance of Kenyan	Regression P-value 0.05

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION OF FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents findings from the analysis. Trend analysis is also provided to show variations in leverage indicators over time. After trend analysis, correlation results are captured, followed by test of various diagnostic tests before conducting panel regression and hypotheses testing.

4.2 Descriptive Statistics

Descriptive statistics describes the quantitative summary measures that describe the basic features of a dataset, providing simple summaries about the sample and the variables involved. Descriptive statistics was necessary in giving overview of the financial leverage indicators and the financial performance of Kenyan banks before conducting further inferential analysis. Table 4.1 shows the descriptive statistics results.

Table 4.1:

Descriptive Statistics

Variable	Minimum	Maximum	Mean	Std. Deviation
DER	5.527602	9.736155	7.293784	0.881083
DTAR	0.871077	0.939048	0.900397	0.012704
LTDR	0.130576	0.272696	0.18915	0.026873
STDR	0.670042	0.819747	0.739768	0.031834
ROA	-0.01079	0.031573	0.017599	0.007962

Table 4.1 shows that between 2019 and 2023, Kenyan commercial banks recorded varying levels of debt-to-equity ratios (DER), with the lowest observed value being 5.527602 and the highest at 9.736155. The average DER was 7.293784, indicating that banks generally depended more on debt than equity to support their operations. This points to a sector characterized by considerable financial leverage. The closeness of DER values across banks suggests a relatively uniform approach to leveraging within the industry. Similarly, the debt-to-total assets ratio (DTAR) ranged from 0.871077 to 0.939048, with an average of 0.900397. This indicates that approximately 90% of bank assets were funded through liabilities, underscoring a heavily debt-financed structure that

could amplify profitability but also raise vulnerability to financial risk. The standard deviation indicates that this trend was uniformly observed across the sample banks. These results agree with conclusions made by Marinka (2024) that improved asset profitability was associated with rising stock values, whereas a heavier reliance on debt financing corresponded with declines in share prices. When return on equity (ROE) was applied as a moderating factor, it was found to dampen the influence of asset-based profitability on market valuation. On the other hand, ROE appeared to enhance the effect of financial leverage, making the relationship between debt levels and stock prices both positive and significant under its influence. Moreover, appropriate financial asset allocation enhances market expectations, leading to higher stock prices. However, asset management in the mining industry did not show an increase in company value as reflected by ROE, which negatively impacted stock prices.

The long-term debt ratio (LTDR) had an average value of 0.189150, with values generally falling between 0.130576 and 0.272696. This suggests that, on average, long-term borrowing contributed a notable share to asset financing in Kenyan banks, though the figures indicate a tendency to rely more on short-term financing possibly due to economic uncertainty. The range of values shows moderate differences in how banks structure their long-term debt. On the other hand, the short-term debt ratio (STDR) averaged 0.739768, with most values clustered between 0.670042 and 0.819747. This highlights a strong inclination toward short-term borrowing across the banking sector. Although this approach may help manage immediate funding needs, it could increase exposure to liquidity and refinancing challenges. The narrow spread in values shows that this reliance on short-term debt is common across many institutions. These results agree with the observation made by Sari and Rochmatullah (2024) that the return on equity of these companies had a considerable impact on the stock prices of these industries. The study concluded that while liquidity and leverage ratios may not be strong determinants of stock prices in the food and beverage sector, profitability measures, particularly return on equity, play a crucial role in influencing investor perceptions and stock valuations. The study recommended that companies focus on improving their return on equity to enhance stock market performance and attract potential investors.

The study assessed financial performance using ROA, which averaged 0.017599. The values generally fell between -0.010794 and 0.031573, indicating that while some banks experienced slight losses, others recorded modest profitability. The relatively narrow spread around the average

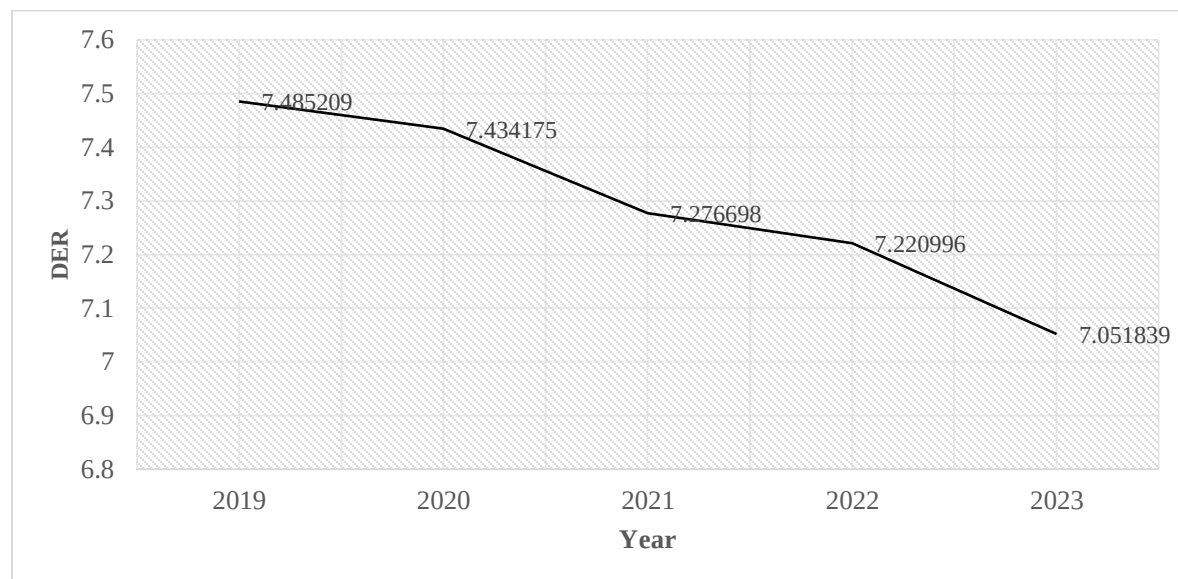
suggests limited variation in ROA among the banks, reflecting broadly similar performance levels across the sector. This positive average ROA implies that Kenyan banks were generally profitable over the study period, though the narrow range and standard deviation reflect moderate profitability levels and limited disparity in performance across institutions. The presence of a negative minimum ROA points to isolated instances of financial underperformance. These findings concurs with the findings of a study conducted by Shikumo et al. (2020) that non-financial companies that are listed on the NSE had to make use of various funding methods in order to increase their market capitalization and earnings per share. The value of the company to its stakeholders will increase as a result of this. For the purpose of achieving the greatest possible financial growth in the industry, the researchers recommended conducting additional research into various funding methods

4.3 Trend Analysis

The results of the trend analysis for the variables are shown in this section. The study used trend analysis to determine the variables' trend over time from 2019 to 2023. The trend analysis for DER is displayed in Figure 4.1.

Figure 4.1:

Trend Analysis for Debt-To-Equity Ratio

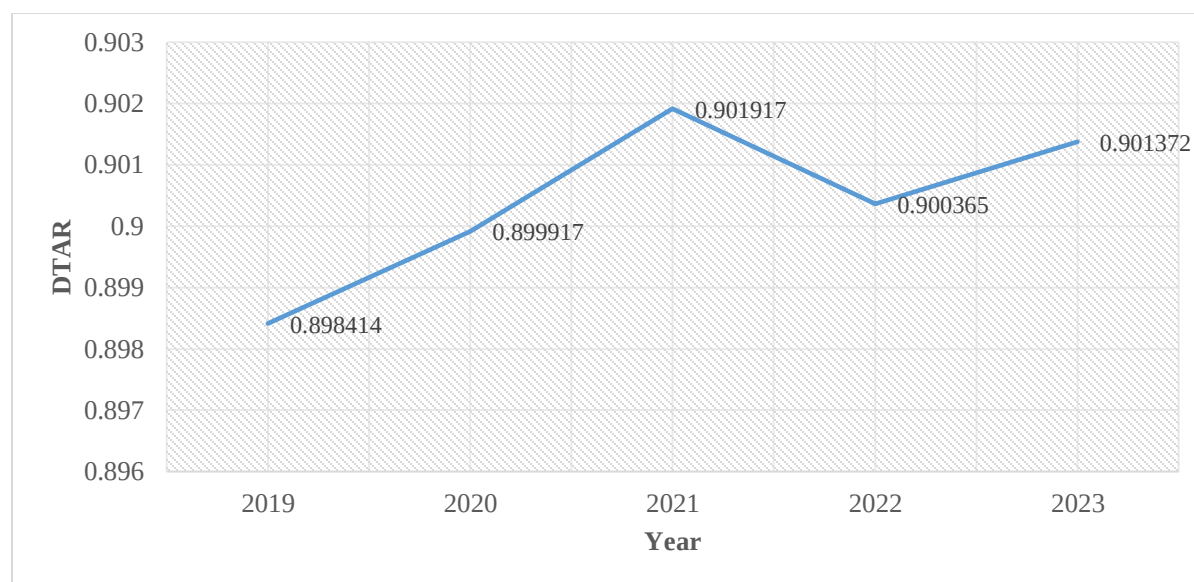


The trend line results in Figure 4.1 indicate that the average debt-to-equity ratio (DER) for Kenyan commercial banks was 7.4852 in 2019. It declined to 7.4342 in 2020, before experiencing a sharper drop to 7.2767 in 2021. The decline continued at a slower rate in 2022, where the average DER was 7.2210, and then declined further to 7.0518 in 2023. This downward trend suggests that banks gradually reduced their dependence on debt relative to equity over the five-year period. The consistent reduction in DER implies a change towards more equity-based financing or a controlled management of liabilities. This trend is consistent with financial prudence as it may indicate that banks were becoming more cautious with leverage, possibly in response to regulatory pressures, macroeconomic uncertainties, or strategic shifts towards stability. As supported by Lomwai (2024) optimal capital structure decisions influence risk-return trade-offs, where reducing leverage can safeguard firms from solvency-related volatility.

Figure 4.2 shows trend line results for debt-to-total assets ratio (DTAR).

Figure 4.2:

Trend Analysis for Debt-To-Total Assets Ratio



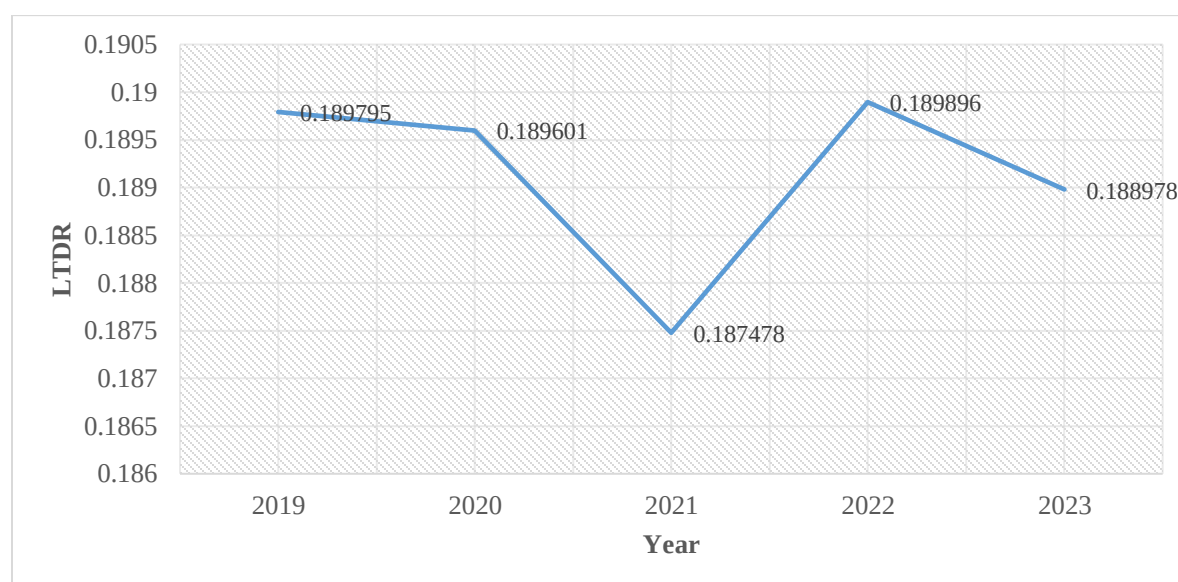
The trend analysis results show that in 2019, the average DTAR stood at 0.898414. It experienced a slight increase to 0.899917 in 2020 and rose further to a high of 0.901917 in 2021. In 2022, the ratio dropped slightly to 0.900365 before increasing again to 0.901372 in 2023. The trend reveals a relatively stable but erratic pattern, with minor fluctuations over the five-year period. These

variations suggest inconsistencies in how banks managed their total debt relative to total assets. The consistently high DTAR indicates a heavy reliance on debt financing in the sector, which is likely to expose the banks to higher financial risks if not well managed. According to Khan and Jain (2018), even though high debt-to-asset levels has the potential to improve return on equity during periods of strong performance, they also increase levels of vulnerability during economic shocks. The observed trend suggests that banks in Kenya maintained a largely leveraged asset base while making slight year-to-year adjustments, possibly in response to regulatory changes, market conditions, or internal restructuring initiatives.

The trend line results for long-term debt ratio (LTDR) is presented in Figure 4.3

Figure 4.3:

Trend Analysis for Long-Term Debt Ratio



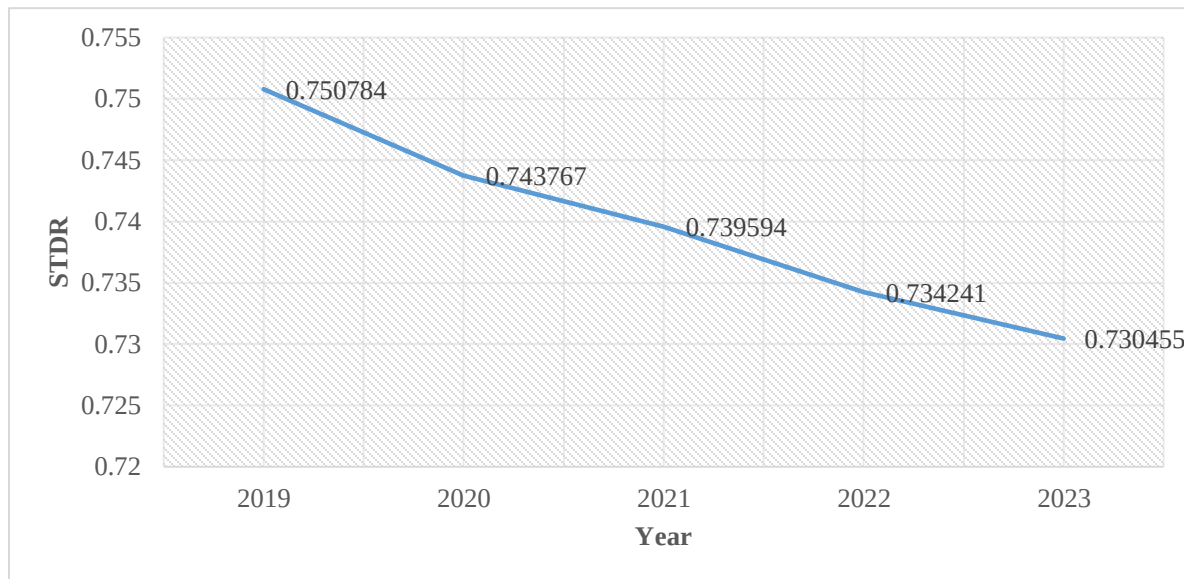
The average long-term debt obligations of Kenyan commercial banks as a proportion of total assets over the five-year period. The results show that in 2019, the average LTDR was 0.189795, which decreased slightly to 0.189601 in 2020. A further decline was recorded in 2021 to 0.187478, before increasing to 0.189896 in 2022. In 2023, the LTDR experienced a slight drop to 0.188978. The trend indicates minor fluctuations with an overall stable pattern, suggesting that the proportion of long-term debt in banks' capital structures remained relatively consistent over the period. While the changes are not drastic, the erratic pattern reflects strategic adjustments in long-term debt usage likely influenced by interest rate considerations, regulatory guidelines, and evolving market

conditions. According to Myers (2001), firms often balance between short-term and long-term debt based on cost, flexibility, and financial strategy.

The results on Figure 4.4 shows the trend lines for short-term debt ratio (STDR).

Figure 4.4:

Trend Analysis for Short-Term Debt Ratio



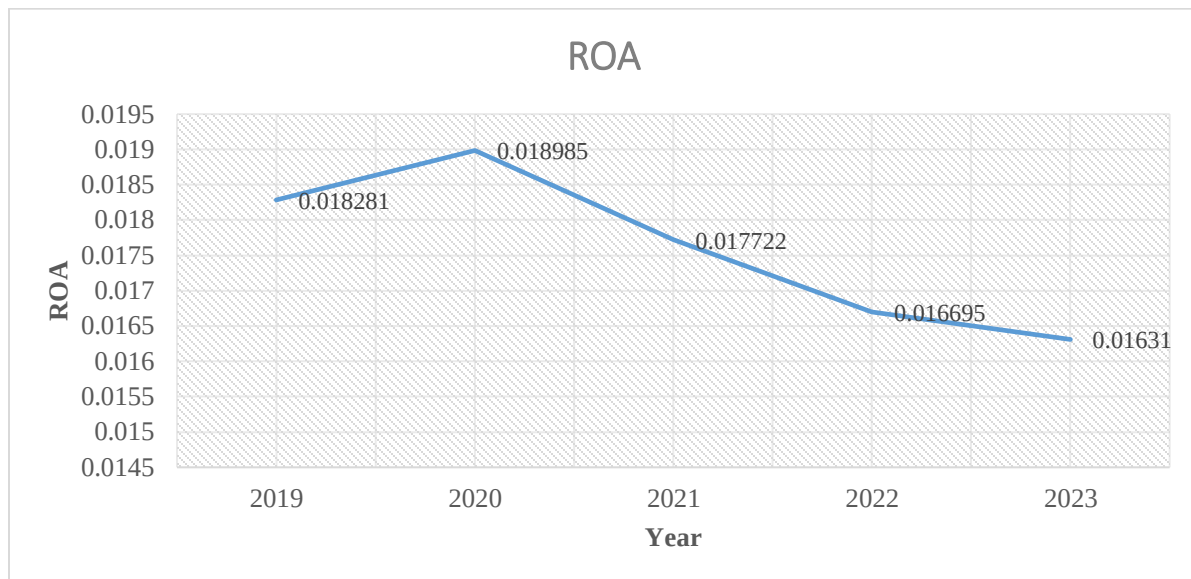
In 2019, the average STDR was 0.750784, which declined steadily to 0.743767 in 2020, and further to 0.739594 in 2021. The ratio continued to fall to 0.734241 in 2022 and reached its lowest point of 0.730455 in 2023. This trend depicts a consistent downward trajectory, indicating that banks gradually reduced their reliance on short-term debt as a proportion of total assets. Despite the downward movement, the values remain relatively high, confirming that short-term liabilities still made up a significant portion of total debt.

The declining pattern may reflect efforts by banks to reduce liquidity risk and align with more sustainable funding strategies. As noted by Diamond and Rajang (2001), excessive reliance on short-term debt can increase vulnerability to rollover risk, especially during periods of market uncertainty. The downward trend in STDR may, therefore, suggest a strategic change among Kenyan banks toward improved liability management and long-term financial health, even as short-term obligations remain dominant in their capital structures. Figure 4.5 shows trend line

results for financial performance (ROA) of these commercial banks over the period under study (2019-2023).

Figure 4.5:

Trend Analysis for Return on Assets



The trend line shows that in 2019, the average ROA was 0.018281, which increased slightly to 0.018985 in 2020 representing the highest value recorded during the period. In 2021, ROA declined to 0.017722, followed by a continued drop to 0.016695 in 2022 and further down to 0.016310 in 2023. The trend demonstrates a slightly erratic but overall downward movement in profitability across the banking sector. While there was a marginal improvement in 2020, the consistent decline from 2021 to 2023 suggests mounting challenges to bank profitability. These could be attributed to increased operating costs, narrowing interest margins, credit risk impacts, or external shocks such as economic slowdowns and regulatory tightening. According to Onyango and Olweny (2022) a bank's profitability is influenced by internal efficiency and macroeconomic stability. The observed decline in ROA implies a general gradual reduction in earnings from asset deployment.

4.4 Correlation Analysis

The study variables and the nature and magnitude of their association with ROA are displayed in Table 4.2, which also contains the correlation matrix.

Table 4.2:

Correlation Matrix

	ROA	DER	DTAR	LTDR	STDR
ROA	1.0000				
DER	-0.5632*	1.0000			
DTAR	-0.4726*	0.6213*	1.0000		
LTDR	-0.4018*	0.4779*	0.4521*	1.0000	
STDR	0.0867	-0.1834	-0.2216	-0.2942*	1.0000

There existed a negative and significant correlation between the debt-to-equity ratio (DER) and profitability (ROA), with a coefficient of -0.5632. An increase in DER, indicative of more financial leverage, results in diminished profitability. This finding is consistent with the findings of a study by Maringka (2024) who found that DER had a negative and significant effect on stock prices, implying poor investor perception of excessive leverage. Similarly, Mugun et al. (2019) observed a weak but negative correlation between DER and ROA in Kenyan microfinance institutions, emphasizing the importance of maintaining a balanced capital structure.

Similarly, the correlation between DTAR and ROA was negative and significant (-0.4726). This suggests that higher proportions of total debt relative to assets reduce bank profitability. The findings are contrary to those of Sari and Rochmatullah (2024), who found that DTAR had no significant influence on stock prices in the food and beverage sector, implying that leverage especially when excessive may not always drive market value or profitability. Rocha and Camargos (2024) also concluded that the source of financing had minimal impact unless internal financing was constrained, reinforcing the idea that debt must be used cautiously.

Moreover, long-term debt ratio (LTDR) showed a negative and significant correlation (-0.4018) with ROA, implying that increased use of long-term debt reduces financial performance, possibly due to the long-term cost burden and interest obligations. This agrees with the study by Anozie et al. (2023) on Nigerian oil and gas firms, where long-term debt negatively impacted ROA. Likewise, Pyoko (2024) argued that while long-term debt can support growth, it should be used strategically and complemented with internal financing. On the contrary, Shikumo et al. (2020) showed some positive influence of long-term debt on firm growth (measured via earnings per share), but even then, the sector-specific differences and regulatory frameworks must be considered.

Moreover, STDR exhibited a positive but insignificant correlation (0.0867) with ROA. This finding suggests that even though banks may rely on short-term liabilities for funding, it does not significantly influence their profitability. This is contrary to the findings of Musah (2020) and Amponsah (2022), who found that short-term debt negatively impacted profitability in Ghanaian banks although insignificantly in some cases. Similarly, Shikumo et al. (2020) found that short-term debt significantly improved earnings per share and market capitalization in non-financial NSE-listed firms, showing that industry-specific dynamics matter in assessing debt implications.

4.5 Diagnostics Tests

Diagnostic tests conducted by this study included both pre-estimation and post-estimation procedures to confirm that the model's underlying assumptions were not violated. The pre-estimation diagnostic involved testing for multicollinearity, while the post-estimation diagnostics included normality testing, heteroscedasticity testing, autocorrelation checks, and the Hausman specification test. These tests were essential in guiding the model selection and in preventing spurious outcomes that could arise from issues such as non-stationarity or model misspecification.

4.5.1 Stationarity Test

Table 4.3 presents the stationarity test results for the financial performance variable (ROA) and the four financial leverage indicators (DER, DTAR, LTDR, and STDR).

Table 4.3:*Stationarity Tests*

Variable	Adjusted t-statistic	P-value	Comments
ROA	-4.78003	0.001	Stationary
DER	-5.12485	0.000	Stationary
DTAR	-5.56998	0.000	Stationary
LTDR	-3.55793	0.007	Stationary
STDR	-4.66131	0.001	Stationary

The stationarity results in Table 4.3 shows that all the variables demonstrated stationarity at the 5% level of significance, with p-values less than 0.05 and negative t-statistics. This confirms that the series do not exhibit unit root behavior and can be used at levels without requiring differencing. Consequently, the regression results derived from these variables are considered valid and non-spurious allowing for panel regression analysis to be conducted on the data.

4.5.2 Normality Test

The normality assumption is necessary for conducting valid single or joint hypothesis tests regarding the regression model parameters. If the error terms are not normally distributed, the estimates may still be unbiased, but standard errors could be misleading, affecting inference accuracy. To examine whether the variables in this study conform to the normality assumption, the study applied skewness and kurtosis-based assessments using the D'Agostino-Pearson omnibus test. This test jointly evaluates skewness (asymmetry) and kurtosis (tailedness) of the distribution to determine whether it deviates significantly from normality. The results are presented in Table 4.4.

Table 4.4:*Normality Test*

Variable	Obs	Pr Skweness	Pr. Kurtosis	Adj.chi2 2	Prob>chi2
ROA	200	-0.10235	0.812345	1.126	0.5691
DER	200	0.084512	0.712589	0.984	0.6113
DTAR	200	0.025634	0.694321	0.772	0.6804
LTDR	200	-0.04329	0.763245	1.059	0.5897
STDR	200	0.018763	0.018763	0.861	0.6512

The normality results in Table 4.4 indicate that all five variables ROA, DER, DTAR, LTDR, and STDR conformed to the normality assumption, as evidenced by their respective p-values, all of which are greater than 0.05 significance level. ROA, with a skewness of -0.10235 and kurtosis of 0.812345, recorded an adjusted chi-square statistic of 1.126 and a p-value of 0.5691, suggesting a near-symmetric distribution with moderately light tails. Similarly, DER and DTAR displayed minimal skewness (0.084512 and 0.025634) and acceptable kurtosis values, with p-values of 0.6113 and 0.6804, respectively, indicating no significant deviation from normality. LTDR and STDR also maintained symmetry and tailedness within acceptable bounds, with p-values of 0.5897 and 0.6512, respectively, further confirming normality. These findings collectively imply that the variables are normally distributed, satisfying the assumption for panel regression analysis.

4.5.3 Multicollinearity

According to William et al. (2013), multicollinearity refers to the presence of high correlation among predictor variables, which can undermine the reliability of regression estimates. When predictor variables are highly correlated, it becomes difficult to isolate the individual effect of each variable, leading to inflated standard errors and potentially unstable coefficient estimates (Belsley et al., 1980; Field, 2009). To assess the extent of multicollinearity in the current study VIF was used. As a rule of thumb, VIF values above 10 signal prescience of multicollinearity (Field, 2009).

Table 4.5:*Multicollinearity Test Results*

Variable	VIF	1/VIF
DER	9.514953	0.105097732
STDR	9.47258	0.105567859
LTDR	4.102373	0.243761328
DTAR	3.262114	0.306549713

All predictor variables; DER, DTAR, LTDR, and STDR recorded VIF values less than 10 the critical threshold. DER and STDR had higher VIFs of 9.51 and 9.47 respectively, yet still within acceptable limits, while DTAR and LTDR recorded moderate VIFs of 3.26 and 4.10. These findings suggest that the predictor variables are sufficiently independent of one another, allowing for stable and interpretable panel regression estimates.

4.5.4 Homoscedasticity Test

The validity of this assumption is crucial in panel regression, as its breach may result in inefficient estimates and inaccurate statistical tests. The Breusch-Pagan test was utilized to assess homoscedasticity in this study.

Table 4.6:*Homoscedasticity Test*

Breusch-Pagan/Cook-Weisberg test for Homoscedasticity

H_0 : Constant variance

Variables: fitted value of Roa

Chi2(1) = 1.47

Prob>chi2 = 0.2254

A p-value of 0.2254 and a chi-square value of 1.47, as shown in Table 4.6, are both higher than the 5% significance level. That the error terms are homoscedastic means that we can't rule out the possibility that the variance is constant. This confirms the assumption of equal variance in residuals and supports the use of panel regression without the need for heteroscedasticity-robust corrections.

4.5.5 Autocorrelation

In panel regression modeling, one of the core assumptions is that residuals (error terms) are independent across observations. When this assumption is violated, particularly in panel or time-series data the model exhibits autocorrelation, where the current error is correlated with past errors. This can distort standard errors and undermine the reliability of inference. Making use of Wooldridge test, the findings were as shown in Table 4.7.

Table 4.7:

Autocorrelation

Wooldridge test for autocorrelation in panel data

H_0 :no first-order autocorrelation

$F(1,30) = 2.684$

$Pr > F = 0.1117$

The test's results showed a p-value of 0.1117 and an F-statistic of 2.684. We cannot rule out the possibility of first-order autocorrelation because the p-value is larger than 0.05. This indicates that the residuals are not serially correlated over time, and the assumption of independence of errors holds. The absence of autocorrelation points to the regression model's temporal stability and ensures that standard inference procedures remain reliable.

4.5.6 Testing for Random and Fixed Effect using Hausman Test

Fixed effects models control for time-invariant heterogeneity across entities, while random effects models assume that such differences are uncorrelated with the explanatory variables (Baltagi, 2005). To select between these two models, the study used the Hausman specification test (Hausman, 1978), which compares the consistency of both estimators. The results are presented in Table 4.8.

Table 4.8:*Random and Fixed Effect Testing*

Variable	(b)	(B)	(b - B)
	Fixed	Random	Difference
DER	-0.019841	-0.004107	-0.015734
DTAR	0.013226	0.022948	-0.009722
LTDR	-0.008731	0.002345	-0.011076
STDR	0.017410	0.019988	-0.002578
chi2(4)			18.57
Prob > chi2			0.0010

Table 4.8 displays the results, which provide a p-value of 0.0010 and a chi-square statistic of 18.57. This suggests that, relative to the random effects model, the fixed effects model works better with this dataset. In order to take into consideration, the unobserved heterogeneity among banks, the study suggests using the fixed effects definition for regression analysis.

4.6 Panel Regression Analysis

Regression analysis, is a method for evaluating the influence of one or more independent variables on a dependent variable. The model was used to assess how variations in debt structure affect bank profitability across different commercial banks and time periods.

Table 4.10:*Panel Regression Analysis*

Variable	Coef. (β)	Std. Err.	z	P> z
DER	-0.019840	0.005728	-3.46	0.0010
DTAR	-0.014630	0.006394	-2.29	0.0220
LTDR	-0.011390	0.003218	-3.54	0.0000
STDR	0.004105	0.005211	0.79	0.4310
Constant	0.083216	0.017504	4.76	0.0000
R Squared	0.4728			
F statistic	210.57			
P-value	0.0000			

The revised model then became;

$$Y_{it} = 0.083216 - 0.019841X_{1it} - 0.014627X_{2it} - 0.011392X_{3it} + 0.004105X_{4it}$$

Where:

Table 4.10 shows an R-squared value of 0.4728 from the panel regression results, indicating that financial leverage explains approximately 47.28% of the variation in the return on assets (ROA) among commercial banks in Kenya. This suggests that nearly half of the changes in bank profitability can be attributed to differences in their financial leverage levels. Changes in the makeup of financial leverage explain, thus, almost half of the variation in bank profitability.

It is evident from the table that DER had a negative and statistically significant effect on ROA ($\beta = -0.019840$, $p = 0.001$), implying that higher reliance on equity-backed debt reduces profitability. This led to the rejection of H_{01} . This is consistent with the study by Marinka (2024), which showed a negative and significant effect of DER on stock prices, reinforcing the idea that excessive leverage erodes investor confidence and performance. Mugun et al. (2019) similarly observed a negative relationship between DER and ROA in Kenyan microfinance institutions, though their findings were not statistically significant. Nonetheless, both studies underscore the risks of disproportionate debt financing.

The results on DTAR and ROA were $\beta = -0.014630$, $p = 0.022$ suggesting that greater dependence on debt relative to total assets constrains profitability. Consequently, this study rejected H_{02} . These results align with Sari and Rochmatullah (2024), who found that leverage ratios including DTAR had little predictive value for stock prices in Indonesia's food and beverage sector. Rocha and Camargos (2024) added that debt issuance only influenced shareholder returns under conditions of internal financing deficits, showing that leverage may only benefit performance under constrained capital availability. Kibunja and Fatoki (2020) also observed that short- and medium-term debt negatively affected ROE, supporting the current findings that cautious management of total debt is vital for performance.

Similarly, the LTDR coefficient was negative and significant ($\beta = -0.011390$, $p = 0.000$). As such, H_{03} was rejected. This supports Anozie et al. (2023), who found that long-term debt to total assets had a significantly negative effect on ROA among Nigerian oil and gas firms. The findings echo the cautions in Shikumo et al. (2020), who reported that although long-term debt can drive growth, its overuse may contribute to financial strain. Similarly, Pyoko (2024) highlighted that although profitable firms attract long-term debt, they should rely more on internal funding to minimize interest burdens and maintain financial stability.

The results however show that STDR had a positive but statistically insignificant effect on ROA ($\beta = 0.004105$, $p = 0.431$). This implies that while short-term debt may provide temporary liquidity benefits, its influence on profitability is not definitive in the Kenyan banking context. This therefore meant that H_{04} could not be rejected. This result finds contrast with Musah (2020) and Amponsah (2022), who documented negative correlations between STDR and ROE in Ghanaian banks, citing excessive reliance on short-term borrowing as a profitability risk. However, Shikumo et al. (2020) reported that STDR positively and significantly influenced growth in non-financial firms, suggesting that the utility of short-term debt is likely sector-dependent. These regression results indicate the negative effects of DER, DTAR, and LTDR on bank financial performance, pointing to the need for careful leverage structuring in commercial banks. Although STDR showed a slight positive effect, its statistical insignificance suggests that short-term borrowing, while potentially useful, does not strongly drive profitability outcomes.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusions drawn from the results, and recommendations arising from the analysis, alongside suggestions for future research.

5.2 Summary of the Findings

The descriptive analysis revealed wide differences in financial leverage and performance levels across Kenyan commercial banks. The Debt-to-Equity Ratio showed considerable spread, with some institutions maintaining low reliance on debt while others operated with much higher levels of debt relative to equity. The average stood at 5.7209, pointing to a generally high dependence on borrowed funds. Similarly, the Debt-to-Total Assets Ratio demonstrated that liabilities finance a significant portion of bank assets, with most values clustering around an average of 0.8127498. This reflects a sector largely driven by debt-financed operations.

The Long-Term Debt Ratio showed broad differences in how banks approached long-term financing, with values spread across a wide spectrum and an average of 0.4021786, indicating varied reliance on long-term borrowing. In contrast, the Short-Term Debt Ratio averaged 0.2314972, reflecting a relatively cautious approach to managing short-term obligations, likely aimed at maintaining liquidity. Results on ROA displayed moderate profitability across the sample, with values ranging from slight losses to modest returns, and an overall average of 0.0213701.

The study in addition utilized a Pearson correlation matrix in addition to the descriptive statistical findings. The results showed that ROA was strongly and adversely linked with DER (-0.5632), DTAR (-0.4726), and LTDR (-0.4018), respectively. According to these findings, the return on assets decreases as different types of debt grow, indicating that relying too much on debt financing reduces profitability. On the other hand, a correlation coefficient of 0.0867 between STDR and ROA showed a weak positive association that was not statistically significant.

The results demonstrated that DER had a negative and statistically significant influence on ROA, with a coefficient of -0.019840 ($p = 0.001$). The coefficient for DTAR's negative impact on profitability was -0.014630 ($p = 0.022$), which was statistically significant. Similarly, LTDR's -

0.011390 coefficient ($p = 0.000$) indicates a negative and statistically significant effect on ROA. These results add weight to the argument that banks' reported returns on assets are lower when their leverage ratios are higher, whether that's relative to equity, total assets, or long-term obligations. This lends credence to the idea that banks' profitability can be eroded by increased financial risk and the interest burden period caused by excessive borrowing. However, STDR did show a positive correlation with ROA, although it was not statistically significant ($p = 0.431$), with a coefficient of 0.004105. Because of its manageable and flexible payback periods, short-term debt may offer liquidity without substantially impacting profitability.

5.3 Conclusions

The findings reveal that overall debt levels relative to banks' capital structures have a significant impact on their financial performance. When banks rely heavily on borrowed funds to finance operations, their profitability tends to decline, likely due to the increased cost of servicing debt and the heightened exposure to financial risk. This relationship highlights the delicate balance that institutions must strike between utilizing debt for growth and safeguarding their returns. Excessive dependence on leverage can strain earnings and reduce the flexibility needed to respond to market fluctuations or regulatory pressures. Therefore, the study emphasizes the importance of adopting prudent financial strategies that optimize leverage use without compromising long-term stability and performance. Ensuring a well-structured approach to debt management is crucial for maintaining resilience and achieving sustainable growth in the banking sector.

Commercial banks that depend heavily on long-term or total debt financing are likely to experience reduced profitability due to the rising cost of interest payments and financial obligations. Short-term borrowings may provide essential liquidity for operations without severely impairing profitability. This may point to the importance of managing short-term liabilities strategically to meet day-to-day cash flow demands without resorting to excessive long-term debt.

5.4 Recommendations

Commercial banks in Kenya should consider adopting prudent financial leverage strategies to enhance their financial performance. Bank management should avoid excessive reliance on long-term and equity-based debt structures due to their adverse impact on profitability. Instead, a balanced financing approach that optimizes debt utilization without compromising asset returns

should be emphasized. Additionally, banks should explore avenues for internal financing and revenue diversification to reduce dependence on external borrowings.

For regulatory authorities, it is recommended that guidelines be reviewed to promote optimal leverage thresholds that align with sustainable profitability. Financial managers should also strengthen their risk assessment frameworks when structuring debt portfolios to mitigate the downside effects of financial leverage. Furthermore, strategic use of short-term debt for operational liquidity should be encouraged, with close monitoring to ensure that it does not translate into rolling financial pressure.

5.5 Suggestions for Further Studies

This study focused solely on four dimensions of financial leverage and their influence on ROA among Kenyan commercial banks. Future research should consider extending the model by incorporating additional explanatory variables such as cost of capital, interest coverage ratios, or liquidity indicators to capture a broader spectrum of financial performance drivers. Moreover, comparative studies between Kenyan banks and those in other regions, especially within East Africa, would be useful in understanding regional leverage-performance dynamics. Lastly, future studies should incorporate moderating or mediating variables such as regulatory reforms, macroeconomic conditions, or digital transformation levels to enrich the explanatory power of the model and uncover deeper insights into how leverage interacts with institutional and external environments to shape bank performance.

This study established that the financial leverage measures assessed did not account for all the changes observed in the outcome variable, implying that more than half of the differences in return on assets can be attributed to other factors not captured within the current model. These results suggest that while leverage is important, a range of additional variables possibly including operational efficiency, market conditions, or governance practices also significantly influence bank profitability. Therefore, future studies should consider incorporating additional internal and external variables to build a more comprehensive model of bank profitability and find out the variables responsible for the remaining percentage in variation. These may include macroeconomic factors such as interest rates, inflation, and GDP growth; institutional variables such as corporate governance structures, board composition, and managerial competency; and

strategic variables such as income diversification, technological adoption, customer satisfaction, and digital banking efficiency.

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APPENDICES

Appendix I: Secondary Data Collection Template

Year	Bank	ROA	Debt-to-Equity Ratio	Debt-to-Total Assets Ratio	Long-Term Debt Ratio	Short-Term Debt Ratio
2019						
2020						
2021						
2022						
2023						

Source: Central Bank of Kenya (2025)

APPENDIX II: KEMU INTRODUCTION LETTER



KENYA METHODIST UNIVERSITY

P. O. Box 267 Meru - 60200, Kenya

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DIRECTORATE OF POSTGRADUATE STUDIES

Our Ref: KEMU/ISERC/BUS/09/2025

March 21, 2025

Commission Secretary
National Commission for Science, Technology and Innovations
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: MARIA MGHULO KAMBUCHU-BUS-3-1826-1/2023

This is to confirm that the above named is a bona fide student of Kenya Methodist University, in the Department of Business Administration, undertaking a Master's degree in Business Administration. She is conducting research on: *"Effect of Financial Leverage on the Financial Performance of Kenyan Banks"*.

We confirm that her research proposal has been defended and approved by the University.

In this regard, we are requesting your office to issue a research license to enable her collect data.

Any assistance accorded to her will be highly appreciated.

Yours sincerely,



Dr. Nancy Rintart (PhD)

Director, Board of Postgraduate Studies

Cc: Dean, School of Business

CoD, Business Administration

Postgraduate Coordinator - BA

Supervisors

APPENDIX III: ETHICAL APPROVAL



KENYA METHODIST UNIVERSITY
P. O. BOX 267 MERU - 60200, KENYA FAX: 254-64-30162
TEL: 254-064-30301/31229/30367/31171 EMAIL: info@kemu.ac.ke

Our Ref: KeMU/ISERC/BUS/09/2025

March 21, 2025

MARIA MGHULO KAMBUCHÉ
BUS-3-1826-1/2023

Dear Maria,

SUBJECT: EFFECT OF FINANCIAL LEVERAGE ON THE FINANCIAL PERFORMANCE OF KENYAN BANKS

This is to inform you that Kenya Methodist University Institutional Scientific Ethics and Review Committee has reviewed and approved your research proposal. Your application approval number is KeMU/ISERC/BUS/09/2025. The approval period is 21st March, 2025 – 21st March, 2026.

This approval is subject to compliance with the following requirements:-

- I. Only approved documents including (informed consents, study instruments, MTA) will be used.
- II. All changes including (amendments, deviations, and violations) are submitted for review and approval by Kenya Methodist University Institutional Scientific Ethics and 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 KeMU ISERC 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 KeMU ISERC within 72 hours.
- V. Clearance for export of biological specimens must be obtained from relevant institutions.

APPENDIX IV: NACOSTI PERMIT

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
RefNo: 172735	Date of Issue: 16/April/2025
RESEARCH LICENSE	
	
This is to Certify that Miss. MARIA MGHULO KAMBUCHU of Kenya Methodist University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: EFFECT OF FINANCIAL LEVERAGE ON THE FINANCIAL PERFORMANCE OF KENYAN BANKS for the period ending : 16/April/2026.	
LicenseNo: NACOSTI/P/25/4172552	
172735	
Applicant Identification Number	Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code
	
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