

**EFFECT OF FOREIGN EXCHANGE RATE RISK ON FINANCIAL
PERFORMANCE OF LISTED FIRMS AT THE NAIROBI
SECURITIES EXCHANGE, KENYA**

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DECLARATION

This research project is my original work and has not been presented to any other institution for any award

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LIST OF ABBREVIATION AND ACRONYM

ANOVA	Analysis of Variance
ETF	Exchange Traded Funds
EV	Electrical Vehicle
GEMS	Growth Enterprise Market Segment
NSE	Nairobi Securities Exchange
OLS	Ordinary Least Squares
PPP	Public Private Partnership
REITs	Real Estate Investment Trust
ROA	Return on Assets
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
VaR	Value at Risk
VIF	Variance Inflation Factor

ABSTRACT

Fluctuations in exchange rates can affect various aspects of the company's financial performance, leading to implications for profitability, cash flows and overall financial stability. One key area where foreign exchange rate risk affects firms is through its impact on revenues and costs. If the foreign currency strengthens against the firm's home currency, the revenues earned from exports will be reduced when converted back to the home currency. This can lead to lower reported revenues and potentially impact the firm's profitability. This study investigated the effect of foreign exchange rate risk on the financial performance of cross-border listed firms at the Nairobi Securities Exchange (NSE), Kenya. The study draws on three key economic theories, namely Interest Rate Parity theory, Purchasing Power Parity theory, and the International Fisher Effect theory, to establish a theoretical framework. The research methodology involves a quantitative approach, utilizing secondary data collected from published financial statements of cross-border listed companies at the NSE. The data covered the period from 2018 to 2022, offering a comprehensive snapshot of the financial landscape of these firms. Descriptive statistics, correlation analysis, and regression analysis were employed to analyze the relationships among variables. The target population comprised the 14 cross-border listed companies at the NSE that trade their shares outside Kenya. From this population, a sample of 11 companies provided complete data, resulting in 55 observations for the analysis. The main variables included the dependent variable, Return on Assets (ROA), and independent variables, foreign exchange risk, financial leverage, firm liquidity, and firm size. The findings indicate that financial leverage and firm size significantly influence the financial performance of cross-border listed firms at the NSE. Financial leverage exhibits a negative correlation and regression coefficient, suggesting that higher debt levels are associated with lower ROA. Firm size, on the other hand, displays a positive and highly significant correlation and coefficient, indicating that larger firms tend to have higher financial performance. Foreign exchange risk and firm liquidity, while showing weaker correlations, do not exhibit statistically significant relationships with ROA. In conclusion, the study contributes to the understanding of the financial dynamics of cross-border listed firms in an emerging market context. It highlights the importance of managing financial leverage and achieving economies of scale for sustained financial performance. The study recommends the need for prudent financial management strategies, strategic growth initiatives to enhance firm size, and effective foreign exchange risk management. Future research should consider investigating the effectiveness of risk management strategies, considering macroeconomic factors, and conducting comparative studies across different emerging markets.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Foreign exchange rate risk poses a significant challenge for companies engaged in international trade and operations across borders (Frankel, 2019). The risk affects various aspects of the company's operations, including revenue, costs and overall profitability. Exchange rate movements can lead to gains or losses in revenue when sales are denominated in foreign currencies and later converted back to the home currency. Unpredictable changes in the international market have a direct influence on the productivity of companies regardless of the size and position they occupy in the market. Big companies have been identified to have an edge due to their negotiation and purchase power as compared to small companies which cannot maintain long term contracts with global suppliers. Furthermore, earnings and net income can be directly affected when converting foreign subsidiary financial statements into the reporting currency, leading to translation gains or losses, along with transactional gains or losses (Adams & Verdelhan, 2021).

The study was based on three theories; the 1930 Interest rate parity theory developed by John Maynard Keynes, serves as a foundational concept in international finance, aiming to elucidate the connection between exchange rates and interest rates (Hofmann, Shim & Shin, 2021); The purchasing power parity theory by Gustav Cassel in the early 20th century, it's based on an economic concept that seeks to explain the equilibrium exchange rate between two countries' currencies based on the relative price levels of identical goods and services (Chen, Du & Hu, 2020). The study also adopted

international fisher effect theory developed by Fisher in 1930 based on economic principles that explain the interaction of various economic factors such as nominal interest rates, inflation rates and exchange rates in different countries (Moyo & Tursoy, 2020). The theories adopted provide the study with structured explanations of complex phenomena, causal relationships, and formulation of meaningful research questions.

Listed firms participate in the active buying and selling of stocks or shares. At the Nairobi Securities Exchange, there are several listed firms spanning different sectors who actively participate in the buying and selling of stocks. The listed firms at NSE include financial and non-financial companies. Listed financial companies include banking, insurance and investment firms. Non-financial firms comprise Construction and Allied, Manufacturing and Allied, Automobiles and Accessories, Commercial and Services, Agriculture, Energy and Petroleum, Real Estate Investment and Telecommunication and Technology and Trust (NSE, 2022). In addition, listed companies comprise both local and foreign companies. As such, buying and selling of shares at NSE occur largely in Kenyan local currency (shillings). However, there exist foreign investors and companies at NSE that will require conversions of the traded shares into foreign currencies like United States Dollar, Great Britain Sterling Pound, Euro among other foreign currencies (NSE, 2022). Because trading of securities at the Nairobi Securities Exchange is done using local Kenyan Shilling (KES), foreign exchange risks as a result to local currency fluctuation threaten the profitability of share trading not only for local listed firms but also for foreign listed companies (Nzioka & Maseki, 2017). The foreign exchange risks scare foreign investors in investing at the NSE. The weakening Kenyan shilling will likely impact the performance of listed companies at NSE.

1.1.1 Foreign Exchange Rate Risk

Foreign exchange rate risk is the potential detrimental effect on a firm's financial wellbeing and cash flows as a result of constant change in differentiations of currencies from one country to another (Korley & Giouvriss, 2021). As per the definition by Oxelheim (1984), it is the adverse risk emanating from a company loss because of changes in foreign exchange rates affecting company's financial wellbeing and economic value. Because different countries have different currencies with different value, in case of currency fluctuations, foreign exchange risks would arise. As such, foreign currency risk results to fluctuations in the investment income or the market value of firms when converted to another currency especially for cross border firms (Mesagan, Alimi & Vo, 2022). Thus, firms operating on cross border countries face eminent foreign exchange rate risks that is likely to impact their financial performance.

For companies operating on global market, foreign exchange rate risk is common. The volatility in currency values can lead to gains or losses when transactions are denominated in foreign currencies and settlement occurs at a different exchange rate (Adams & Verdelhan, 2021). This uncertainty can affect various aspects of a company's operations, including importing and exporting goods, pricing strategies, profitability and financial reporting (Pradita & Geraldina, 2019). As such, firms doing business in foreign countries use foreign currency other than their own local currency and thus more susceptible to foreign exchange risks which impact their financial performance.

A firm engaging in cross border business activities is vulnerable to foreign exchange risks and one being translation risk. Translation risk occurs when accounts held in foreign

currencies by a firm operating in foreign country/countries are to be translated to local currency of the firm. This type of exchange rate risk affects the value firm's assets, equities and liabilities. The risk happens at that point of time that the firm decides to denominate some of its assets, equities, income or liabilities. Pradita and Geraldina (2019) measured translation risk as ratio of translation gain or loss to total assets while Papaioannou (2006) measured it as the exposure of firm net assets (assets minus liabilities) to aggregate potential exchange rate value. Similarly, according to Allen (2003), translation risks indicates level of exposure to assets, equities and liabilities held in foreign denominations. In Sweden, Hagelin and Pramborg (2004) used the percentage of the firm's equity that held in foreign equity to measure translation risk. This study adopted translation risk as computed by Pradita and Geraldina (2019).

1.1.2 Financial Performance

Taouab and Issor (2019) and Tudose et al. (2022) defined organizational performance as the ability of an entity, organization to efficiently and effectively deploy its resources to make income for the organization. Thus, financial performance is a fundamental aspect of evaluating firms aggregate financial well-being and profitability over a specific period. It provides essential insights into how well the company is managing its resources, generating revenue and achieving its financial goals (Ozata, 2020). Common financial ratios encompass profitability ratios, efficiency ratios and market ratios: Profitability defined as the ability of a business or investment to generate profit or financial gain; It is a key metric employed to investigate the success and financial wellbeing of an enterprise. Company efficiency parameters are also financial indicators employed to evaluate the efficiency of a firm in using its resources to make sales or profits. On the other hand,

market parameters, termed also as market valuation parameters, are financial indicators used to evaluate a firm's stock or the overall market's performance (Njoroge, 2020).

Measuring financial performance entails the analysis of various financial statements and key financial ratios. Financial ratios are used to analyze and measure specific aspects of a company's financial performance (Ogundipe, Alabi, Asaleye & Ogundipe, 2019). One is Return on assets (ROA) operationalized as ratio of net income to totals assets (Tudose, 2012). ROA is useful in assessing the effectiveness of using resources to generate revenue (Cindiyaari, et al., 2022) and is less susceptible to financial engineering as compared to return on equity. Focusing at listed firms, Gacheru (2021) and Kelilume (2016) employed ROA while studying foreign exchange rate volatility and its effects on firm performance. In this study, return on assets was employed to measure financial performance of listed firms at the NSE.

1.1.3 Foreign Exchange Rate Risk and Financial Performance

Fluctuations in exchange rates can affect various aspects of the company's financial performance, leading to implications for profitability, cash flows and overall financial stability. One key area where foreign exchange rate risk affects firms is through its impact on revenues and costs (Ehikioya, 2019). If the foreign currency strengthens against the firm's home currency, the revenues earned from exports will be reduced when converted back to the home currency (Mose & Kaboro, 2019). This can lead to lower reported revenues and potentially impact the firm's profitability. Conversely, a weakening foreign currency can lead to higher revenues in the home currency, providing a boost to the company's financial performance.

Conversely, a strengthening of the home currency can reduce production costs for imported inputs, potentially improving profit margins. Currency translation impact is another significant factor related to foreign exchange rate risk for firms (Ahmed & Huo, 2020). Companies with subsidiaries or operations in foreign countries report their financial results in the local currencies. When consolidating these results into the firm's home currency for financial reporting purposes, exchange rate fluctuations can lead to translation gains or losses. While these gains or losses do not involve any actual cash flows, they can create volatility in the firm's reported financial statements and have implications for shareholders' equity and investor perceptions (Feng, Yang, Gong, & Chang, 2021).

1.1.4 Firms Listed at Nairobi Securities Exchange

There are 64 firms listed participating in the buying and selling of stocks at the NSE (NSE, 2022). The NSE listed firms are drawn from different sectors, grouped into non-financial and financial listed firms (NSE, 2022). Listed financial firms include banking, insurance and investment firms. Listed financial companies include banking, insurance and investment firms. Non-financial firms comprise Construction and Allied, Manufacturing and Allied, Automobiles and Accessories, Commercial and Services, Agriculture, Energy and Petroleum, Real Estate Investment and Telecommunication and Technology and Trust (NSE, 2022). However, there are 14 listed cross border firms that forms this study's focus since they are more susceptible to foreign exchange rate risks compared to firms not listed across one or several cross border countries. The listed multinational companies are affected by forex changes. Because trading of securities at the NSE is done using local Kenyan Shilling, foreign exchange risks as a result to local

currency fluctuation threaten the profitability of share trading not only for local listed firms but also for foreign listed companies (Nzioka & Maseki, 2017). The foreign exchange risks scare foreign investors in investing at the NSE. Further, the weakening Kenyan shilling will likely exacerbate the foreign exchange rate risk threatening the financial health of the listed firms. The volatility in the financial health of the listed firms because of foreign exchange risks may instill fears to investors threatening the economy of the country.

1.2 Research problem

The nexus between foreign exchange rates risk and financial performance is two edged phenomena (Socrates, Moyo and Gathiaka, 2020). A high exchange rate may depict a healthy economy and positive financial performance for a country's businesses. However, a high exchange rate, may also make a country's exports more expensive for foreign buyers, potentially reducing international sales for businesses reliant on exports. Conversely, a low exchange rate may boost exports but can lead to increased costs for imported materials and inflationary pressures (Bor & Ochieng, 2019). Additionally, exchange rate fluctuations can affect financial performance differently for various industries and companies, making it crucial for organizations to employ hedging strategies and adapt to the dynamic nature of currency markets to mitigate risks and optimize financial outcomes.

Cross border NSE listed firms face likelihood of foreign exchange risk as they engage in international trade or have foreign subsidiaries, as fluctuations in exchange rates affect their financial performance and profitability (Socrates, Moyo & Gathiaka, 2020). An

adverse movement in exchange rates, such as a depreciation of the Kenyan Shilling against major foreign currencies, has led to increased costs for firms that import goods or services from abroad, impacting their profit margins. Moreover, firms with foreign-denominated debt face higher repayment obligations in local currency terms, leading to financial strain. Additionally, the translation of foreign earnings into Kenyan Shillings has resulted in lower reported profits as the exchange rate is unfavorable, affecting shareholder value (Evans, Kariuki & Wafula, 2022). To mitigate these risks, firms listed at NSE often engage in hedging strategies or diversify their operations, but foreign exchange risk remains a key challenge in the increasingly globalized business environment.

Listed cross border firms face unique challenges related to foreign exchange rate risks that emanates from time-to-time fluctuation in the value of the local currency against those of cross border in the countries they operate. This results to instability and volatility of stock prices that scares investors while threatening the capital market economy. However, this has received little attention in scholarly studies. The area of study has attracted the attention of various scholars. For instance, Atuhaire (2022) analyzed how the impact of foreign exchange rate risks on the percentage of small and medium-sized NSE listed firms in Kenya engaging in international trade can be mitigated by foreign risk management strategies. According to the findings, NSE listed SMEs involved in global trading have a higher chance of exposure to risks associated with foreign exchange compared to those involved in local operations. Similarly, Mugi and Okiro (2021) examined how the way Kenyan commercial banks handled foreign exchange rate risk affected their financial performance. The study's findings demonstrated the effect of

exchange rate risk on financial performance within the Kenyan financial sector. In a different context, Dae (2022) explored how managing foreign exchange rate risk affected the financial success of Kenya's horticultural industry. According to the study, controlling foreign exchange rate risk influences the financial performance of horticultural enterprises in Kenya. Additionally, Pradita and Geraldina (2019) delved into the potential implications of currency risk on the operation of Indonesian banks. The research revealed the various factors influencing bank performance, including capital risk and bank size. However, looked at the commercial banks in Indonesia contrasting the current study that focuses at cross border listed firms in Kenya presenting contextual gap.

The study by Mbubi (2013) on foreign exchange rates and financial performance of NSE listed firms but did not interrogate foreign exchange rate risks in terms of fluctuations of local currency against currencies of the firms listed on cross board countries indicating both the conceptual and contextual gap. A study by Muiro et al. (2018) focused at foreign exchange risk hedging techniques and performance of listed firms in Kenya but not how foreign exchange rate risks and how it impacts performance of listed firms an indication of methodological gap. Similarly, Ogato et al. (2018) on the impact of foreign exchange exposure on performance of listed companies in Rwanda did not include control variables that affect performance of listed firms like firm leverage, firm liquidity and firm size presenting conceptual gap.

To summarize the research gaps, while previous research has explored the effect of foreign exchange rate risk on various sectors, including SMEs, commercial banks, and the horticultural industry, this study provides unique insights into the NSE cross border

listed firms. By focusing on all the cross border listed firms, the study shall contribute to a deeper understanding of the implications of foreign exchange rate risk on the financial performance of cross border listed firms in the context of NSE. The identified information gap was filled by providing an answer to this question, what is the effect of foreign exchange rate risk on financial performance of cross border listed firms in Nairobi Securities Exchange, Kenya?

1.3 Research Objective

To establish the effect of foreign exchange rate risk on financial performance of firms listed at the Nairobi Securities Exchange, Kenya.

1.4 Value of the Study

Findings will provide insights to policy makers on best strategies to improve the overall risk management environment, promote economic stability, and support the growth of domestic industries in the face of currency volatility. Lastly, the study will guide in the creation of a conducive regulatory framework that encourages responsible risk management practices among businesses and financial institutions.

For managers, understanding and managing foreign exchange rate risk is crucial for several reasons: Foreign exchange rate risk can impact a company's financial performance, profitability, and cash flows. Managers will also have the capability to evaluate how the exchange rate fluctuations may affect the company's operations,

expenditures and income. This capability allows them to make informed decisions regarding pricing, sourcing and investment choices.

Findings will deepen the knowledge how exchange rate exposures impact firms' financial health and overall economic stability. Academicians will be in a position of developing new models and theories to explain and predict currency risk behaviors. Lastly, scholars can analyze the effectiveness of various risk management strategies and identify best practices for firms to manage foreign exchange rate risk efficiently.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers theoretical review comprising of the interest rate parity theory, International Fisher effect theory and the purchasing power parity theory; Empirical review, determinants of financial performance which comprise foreign exchange rate risk, leverage, liquidity and firm size. The chapter ends with research gaps and conceptual framework.

2.2 Theoretical Review

The study theoretical review comprised of the; Interest rate parity theory, The purchasing power parity theory and the International Fisher effect theory.

2.2.1 Interest Rate Parity Theory

The theory was developed in 1930 by a renowned British economist, John Maynard Keynes who discussed interest rate differentials and their impact on exchange rates in his seminal work "A Treatise on Money". The concepts of interest rate parity were later developed by well-known economists like Irving Fisher and Robert Mundell in the 1960s and 1970s, with Fisher's work on uncovered interest rate parity being particularly significant (Aslam, Aziz, Nguyen, Mughal & Khan, 2020). The theory highlights the significance of interest rates in international transactions that are in most cases done using more than one currency with different values. Key indicator for parity is that currency value should not hinder business transactions as parties should find mechanism that ensure both business parties do not suffer a loss as a result of the currency they use.

Nonetheless, there is limitation with Interest Rate Parity Theory. According to interest rate parity, investors in two separate nations cannot take advantage of interest rate arbitrage. However, this necessitates unrestricted capital movement and flawless substitutability. Opportunities for arbitrage arise occasionally.

The theory was of significant importance in the global financial landscape. It provides a framework for understanding and predicting exchange rate movements and serves as a guide for investors and policymakers in their decision-making processes (Ha, Stocker & Yilmazkuday, 2020). Despite its importance, it has limitations in practice due to the existence of factors that can cause deviations from the predicted outcomes (Hofmann, Shim & Shin, 2021). One such factor is the risk premium, which is the additional compensation investors may require for holding assets denominated in a foreign currency due to uncertainty or potential losses from exchange rate fluctuations. The theory assumes that risk premia are absent or negligible, but in reality, they can significantly influence exchange rates (Sun, Wang & Wei, 2020).

2.2.2 The Purchasing Power Parity Theory

The theory was first formally introduced by Gustav Cassel, a Swedish economist, in the early 20th century, it's based on an economic concept that seeks to explain the equilibrium exchange rate between two countries' currencies based on the relative price levels of identical goods and services (Chen, Du & Hu, 2020). The key assumptions of the theory include the existence of perfect competition, absence of trade barriers and absence of transportation costs. It assumes that goods and services are freely tradable between countries without any impediments or restrictions. Additionally, the theory

assumes that markets are efficient, information is readily available, and there are no costs associated with moving goods or capital across borders (Adler, Lisack & Mano, 2019). However, the weakness with Purchasing Power Parity Theory lies within its problem in measuring it compared to market-based rates.

The importance of the theory lies in its implications for exchange rate determination and international trade. It offers a theoretical framework for comprehending the adjustment of exchange rates in reaction to shifts in relative price levels among different countries (Jiang, Krishnamurthy & Lustig, 2021). However, the theory has several limitations in practice. In the short run, exchange rates can deviate significantly from their PPP values due to various factors, such as speculative trading, market sentiment and government interventions. Additionally, the theory assumes that all goods and services are perfectly identical across countries, which is often not the case due to variations in quality, branding, and consumer preferences. Furthermore, the theory does not account for non-tradable goods and services, which can significantly impact the cost of living and standard of living in different countries (Moyo & Tursoy, 2020).

2.2.3 International Fisher Effect Theory

Fisher developed the theory in 1930s, which is grounded in the notion of a connection between exchange rates, nominal interest rates and inflation rates in various countries. The theory contends that changes in expected inflation rates eventually more than offset changes in nominal interest rates, resulting in constant real interest rates across all countries (Ahmed & Huo, 2020). This suggests that the adjustment of the exchange rate between two currencies should take into account the difference in nominal interest rates.

The Fisher Effect, which was first put forth by American economist Irving Fisher in the early 20th century, is an extension of the theory. Perfect capital mobility, efficient markets, and rational expectations are among the theory's main tenets (Korley & Giouvriss, 2021).

The theoretical assumptions are important because it clarifies how interest rates and currency rates relate to one another and has application for global investors and enterprises. However, the theory has several drawbacks. In the short run, a number of factors, such as capital controls, governmental interventions, and speculative activities in the foreign exchange market, can lead to departures from the theory's predictions (Mose & Kaboro, 2019). The theory also assumes that real interest rates remain constant across countries, which may not hold true in practice due to differences in economic conditions, productivity and risk factors. In reality, market participants may not always have perfect foresight, leading to uncertainty and potential inaccuracies in the theory's predictions (Bor & Ochieng, 2019).

2.3 Determinants of Financial Performance of Listed Firms

In order to comprehensively evaluate the impact of foreign exchange rate risk on the financial performance of NSE-listed firms in Kenya, it was essential to consider the various determinants that can influence financial outcomes. These determinants represent critical factors that shape a company's overall financial health and are instrumental in understanding how foreign exchange rate risk affects their performance.

2.3.1 Foreign Exchange Rate Risk

Foreign exchange rate risk is the potential detrimental effect on a firm's financial wellbeing and cash flows as a result of constant change in differentiations of currencies from one country to another (Korley & Giouvriss, 2021). Foreign currency risk results to foreign exchange rate fluctuations of the market value and investment income related to foreign currency denominated financial instruments (Mesagan et al.,2022). Thus, firms operating on cross border countries face eminent foreign exchange rate risks that are likely to impact their financial performance. As such, firms doing business in foreign countries use foreign currency other than their own local currency and thus more susceptible to foreign exchange risks which impact their financial performance. A firm engaging in cross border business activities is vulnerable to foreign exchange risks and one being translation risk.

Translation risk occurs when accounts held in foreign currencies by a firm operating in foreign country/countries are to be translated to local currency of the firm. This type of exchange rate risk affects the value firm's assets, equities and liabilities (Shapiro, 2013). Because of exchange rate fluctuations, translation losses or gains upon conversion of financial records in foreign currency to local currency. Translation risk may negatively or positively affect firm performance. For instance, a bank translation loss will lead to fall in banks equities hence negatively affecting performance.

Translation risks occurs when the parent company has to declare its financial reports in one single denomination for the whole company and its subsidiaries. This occurs where the company subsidiaries financial records are converted to parent's federal currency

(Adams & Verdelhan, 2021). Different exchange rates are employed during the subsidiary company translation of its consolidated financial reports that is; company equities are translated using the company historical rate, company liabilities and assets are translated using current exchange rate whereas revenues and expenses are converted using spot rate, the period each of the transaction was conducted. To summarize, historical exchange rate is used to translate company equities while current spot exchange rate are used to translate the rest of the company consolidated report.

In a research by Pradita and Geraldina (2019) on the potential impact of currency risk on bank performance, translation risk was operationalized as ratio of translation gain or loss to total assets. Papaioannou (2006) measured translation risk as the exposure of firm net assets (assets minus liabilities) to aggregate potential exchange rate value. According to Allen (2003), translation risks indicates level of exposure to assets, equities and liabilities held in foreign denominations. Studying translation exchange risk in Sweden, Hagelin and Pramborg (2004) used the percentage of the firm's equity that held in foreign equity to measure translation risk.

2.3.2 Firm Leverage

The level of debt held by a company in financing its operates is called leverage. Leverage directly pinpoint to the level of borrowed capital employed by the company (Le Thi Kim et al., 2021). Firm leverage remains on of firm indicators that influence firm performance both listed and non-listed firms, cross sector firms operating in in different sectors. However, the effect of firm leverage on financial performance of companies can either be positive, negative or no effect and this depends on the context a firm operates. As such,

there has never been conclusive assertion by scholars on the effect of firm leverage on firm performance.

Asimakopoulos et al. (2009) and Al-Jafari and Samman (2015) established that firm leverage has negative correlation with financial performance, citing that more debt in form of borrowed funds imply more debt to repay. On the other hand, Humera et al. (2011) and Burja (2011) proper use of debt result to positive firm performance hence positive effect of firm leverage on company performance. Among listed firms, firm leverage is a significant factor that likely to affect performance, hence this study investigated. Leverage was measured as ratio of total debt to total assets.

2.3.3 Firm Liquidity

Firm liquidity is another key element of firm financial performance. Liquidity entails the firm's capability to convert its assets to cash or easily acquire cash either through money or loan in the bank to meet its short-term obligations. Studies have indicated that more liquid company is desirable by creditors as they are seen to be able to repay back their debt obligations on time (Reschiwati et al., 2020). However, this relationship has not been fully established. One of the basic considerations of the company investments is the liquidity ratios. High liquidity firm may also signify of a good shape of the company and will certainly increase the demand for stocks thus raising the stock price and ultimately the firm performance.

In the context of listed firms, stock prices will fall if the firm is seen to be more illiquid compared to a firm that has more liquid assets (Tahu & Susilo, 2017). A research by Sudiyatno and Suwarti (2022) indicated that firm liquidity has negative effect on firm

financial performance. However, Chiadamrong and Wattanawarangkoon (2023) indicated positive effect of firm liquidity on firm performance, however, a shift in the liquidity position of the firm, very liquidity or very low liquidity results to weak or negative effect on performance. Liquidity was measured as ratio of current liabilities to current assets which was adopted in this study.

2.3.4 Firm Size

Large firms often have advantages in terms of economies of scale. These economies of scale can lead to cost efficiencies in production, distribution, and other operations. Larger firms may have more negotiating power with suppliers and customers, enabling them to secure better terms and pricing (Aslam, Aziz, Nguyen, Mughal & Khan, 2020). As a result, their operating costs relative to revenue can be lower, potentially leading to higher profit margins. Moreover, larger firms may have access to more extensive financial resources, allowing them to invest in research and development, marketing, and expansion, which can foster innovation and growth (Evans, Kariuki & Wafula, 2022). All these factors can positively impact the financial performance of larger firms.

Contrary, larger firms may also face challenges. They can become more bureaucratic and less nimble, which can hinder decision-making and responsiveness to market changes (Chen, Du & Hu, 2020). Additionally, their sheer size may limit their ability to identify and adapt to niche or emerging market opportunities, potentially constraining revenue growth. In some cases, the cost structure of large firms may become rigid, making it harder to reduce expenses during economic downturns. Consequently, the financial performance of larger firms may be constrained by these factors (Ehikioya, 2019).

Smaller firms, while lacking the economies of scale of their larger counterparts, often exhibit greater flexibility and agility. They can pivot quickly in response to market changes, identify and serve niche markets, and foster innovation (Evans, Kariuki & Wafula, 2022). However, smaller firms may face challenges related to resource constraints. Limited access to financing, lower negotiating power, and a narrower talent pool can make it more difficult for smaller firms to compete effectively. This can impact their financial performance, especially in highly competitive industries. The relationship between firm size and financial performance can also vary across industries. In some sectors, such as technology, manufacturing or pharmaceuticals, smaller innovative firms may outperform larger competitors by introducing disruptive technologies or foreign exchange rate risk hedging practices like swap contracts. In contrast, in capital-intensive industries like manufacturing, larger firms with economies of scale may have a more significant advantage (Chen, Du & Hu, 2020).

2.4 Empirical Review

Focusing on 29 banks that were listed at Indonesia Stock Exchange from 2014 to 2018 Pradita and Geraldina (2019) investigated the effect of currency risk on bank performance. The study employed translation loss or gain to total asset in measuring currency risk. From the panel data analysis, it was found that translation risk insignificantly affects financial bank in Indonesia. However, the Pradita and Geraldina (2019) looked at commercial banks in Indonesia in contrast to this study that looks at cross border NSE listed firms in Kenya.

Employing descriptive survey research design, Mugi and Okiro (2021) determined how foreign exchange risk management practices affect bank financial performance in Kenya.

secondary data covering the period 2009-2014 were adopted in the study. It was found that forward contracts and cross currency swaps have positive correlation with bank performance. However, the research did not show how translational risk affect firms returns.

Focusing on firms in US and Japan, Adams and Verdelhan (2021) did a study on foreign exchange transaction and translation risk. Employing financial information of the listed firms in Japan and US, the paper revisited the exchange rate risk puzzle among cross border firms. It was established that when Japanese currency gained, it resulted to decline investment and net income of Japanese firms whereas a gain the value of US dollar did not have effect on US firms.

Atuhaire (2022) studied how foreign risk management tactics affected the amount of participation of small and medium-sized businesses in international commerce in Kampala as a mediator of the impact of foreign exchange rate risks. Data were collected from a sample of 384 respondents using questionnaires and interviews. The study used both quantitative and qualitative methodologies. The study made use of SPSS (24.0)-supported quantitative and qualitative data analysis methods. From the analysis, the study concluded that contingency, transactional, and translation risks are the main foreign exchange rate risks that affect SMEs engaged in international trade, and that these risks have a considerable negative impact on the level of involvement of SMEs.

Mugi and Okiro (2021) studied how strategies for managing foreign exchange rate risk impacted the profitability of Kenyan commercial banks. The study relied on a descriptive approach to describe the relationship between variables under study. The study relied on questionnaires and surveys to collect data. The 43 commercial banks that were active in

Kenya between 2009 and 2014 were among the target group. The target population was manageable hence the study adopted a census and all banks were engaged. It was established that commercial banks strategies in managing risk exposure from foreign exchange was significant, however, the variables adopted by the study established varied impact. The study concluded that forward contracting was less significant as compared other strategies adopted by commercial banks.

Christian et al. (2018) investigated the effect of exchange rate risk firm profitability of a few publicly traded Nigerian conglomerates. The study adopted a descriptive approach and collected data from financial statements. Analysis of data was conducted using inferential tests. The study established that the effect of foreign exchange rate on listed firm's profitability was insignificant. According to the study's conclusions, it is suggested that Nigerian government should maintain its policy of restricting imports and actively promote the consumption of locally manufactured goods. To enhance the strength of local currency, the study further recommended that the authorities in Nigeria, should look for more foreign markets for Nigerian goods aimed at enhancing the local producers' source of revenues.

Tenoy (2021) carried out a study to compare the performance of South Sudan's commercial banks under fixed and floating exchange rates. The study used a comparative descriptive research methodology, with 30 banks operating in South Sudan between December 2019 and December 2020 constituting the study's population. Three banks from abroad and two local banks made up the sample. We acquired secondary data and performed an analysis using multiple linear regression. The study's outcomes indicate

that, during the era of fixed exchange rates influenced the performance of international banks significantly but had no discernible impact on local banks. The findings further highlight that under a floating exchange rate system, all financial institutions exhibited improved performance.

Dae (2022) examined how managing foreign exchange rate risk affected the financial success of Kenya's horticultural industry. The study employed an explanatory research approach to look at a variety of horticulture enterprises during a three-year period (2019–2021). In Nakuru County, there were 63 horticultural enterprises, which made up the study's target population. According to the study's findings, controlling foreign exchange rate risk affects how well horticulture enterprises in Kenya perform financially. Horticulture companies should use a variety of the available hedging strategies, not just one, in order to manage their foreign exchange rate risks successfully. The study's advice was to do this.

Pradita and Geraldina (2019) studied the effect of currency risk exposure to productivity of commercial banks in Indonesia. The final sample for the study consisted of 133 observations from 29 commercial banks that were listed on the Indonesia Stock Exchange between 2014 and 2018. The study relied on secondary data obtained from financial statements and websites related information from commercial banks. The study used panel data analysis in determining the relationship between study variables. The study established that currency risk exposure did not have a significant influence on the productivity of targeted banks in Indonesia.

Kush (2022) evaluated the impact of exchange rate fluctuations on Centenary Bank Uganda Limited's financial results. The research adopted a descriptive approach and primary data instruments in the collection of data. The study targeted 56 members of staff based at the headquarters of Centenary Bank of Uganda from which a sample of 56 members of staff was obtained. Obtained data was processed and coded prior to analysis. Correlation and regression analysis was adopted by the study to determine variable relationships. Furthermore, a multiple linear regression was adopted in assessing the relationship between the dependent variables and independent variables. The study concluded that fluctuations in interest rates had a significant impact on the profitability of Centenary bank in Uganda.

2.5 Summary of Literature Review and Research Gaps

The chapter provides a comprehensive review of theories and its key assumptions relating to the phenomenon under study. It also provides a clear explanation of the key study determinants and their applications in the study case. Lastly, the chapter provides a thorough review of past studies that made varied findings. For instance, Dae (2022) found that managing foreign exchange rate risk affected how well horticulture enterprises in Kenya performed financially, contrasting the current study that focuses on listed cross border firms that are largely susceptible to foreign exchange rate risks. Pradita and Geraldine's (2019) showed that currency hedging enhanced financial results. In contrast to credit risk, operational risk, and interest rates, capital risk and bank size had a favorable effect on banks' performance. The study does not address the Kenyan context. Atuhaire (2022) concluded that contingency, transactional, and translation risks are the

main foreign exchange rate risks that affect SMEs engaged in international trade, and that these risks have a considerable negative impact on the level of involvement of SMEs. The study does not address the Kenyan context.

Mugi and Okiro (2021) studied how strategies for managing foreign exchange rate risk impacted the profitability of Kenyan commercial banks. The study established that commercial banks strategies in managing risk exposure from foreign exchange was significant, however, the variables adopted by the study established varied impact. The study was not done in the banking sector. Christian, Francis & Greg (2018) investigated the effect of exchange rate risk firm profitability of a few publicly traded Nigerian conglomerates. The study established that the effect of foreign exchange rate on listed firm's profitability was insignificant. The study does not address the Kenyan context. Tenoy (2021) carried out a study to compare the performance of South Sudan's commercial banks under fixed and floating exchange rates. The study established that during the era of fixed exchange rates influenced the performance of international banks significantly but had no discernible impact on local banks. The study did not address foreign exchange rate risk. From the reviews done, little research has been done on how foreign exchange rate risk impacts the financial performance of listed firms at NSE.

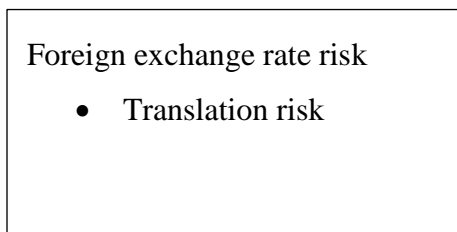
2.6 Conceptual Framework

According to Sekaran and Bougie (2016), a conceptual framework is a fundamental structure used to organize, describe, and comprehend complicated ideas or occurrences. The effect of foreign exchange rate risk on financial performance of listed firms was the

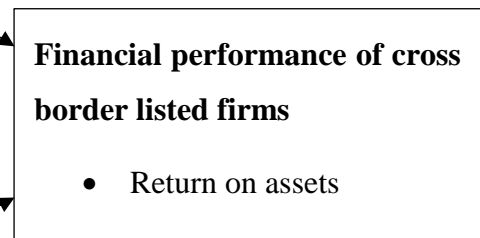
focus on cross border listed firms. The study also focused at other control variables that affect the performance of listed firms and include firm leverage, firm liquidity and firm size. It was postulated that foreign exchange rate risk, firm leverage, firm liquidity and firm size had a significant effect on the financial performance of cross border listed firms as illustrated in the figure 2.1.

Figure 2.1: Conceptual Framework

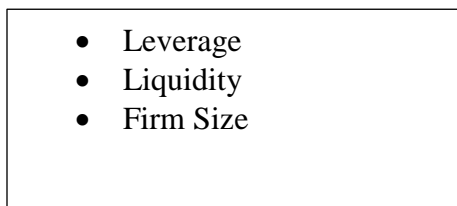
Independent variable



Dependent variable



Control variables



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter covers the study; research design, target population, data collection procedures, diagnostic tests, data analysis and presentation. The chapter ends with the operationalization of the study variables and tests for significance.

3.2 Research Design

A research design outlines the steps and procedures followed to test hypotheses, ensuring the study is well-structured, reliable and valid (Hervie & Winful, 2018). The research was undertaken by employing the descriptive research design. Descriptive research design, according to Kothari (2016), focuses on summarizing and reporting the results without adjusting any factors. This research strategy was chosen because it gave a clear image of what was happening and a thorough knowledge of the interactions between variables.

3.3 Target Population

A target population defines the specific group of individuals or entities that a researcher or surveyor aims to study (Mbokane, 2019). There were 64 listed firms at the NSE (NSE, 2022). However, this study only focused on listed firms at NSE trading internationally. There were 14 cross border listed companies at NSE that traded their shares outside Kenya (NSE, 2022). These were KCB Group, Nation Media Group, Standard Chartered, Diamond Trust Bank, Stanbic Bank, British American Tobacco, Kenya Airways, Jubilee Holdings, East African Breweries Limited, Equity Group, Umeme Ltd, Centum Investments, Bank of Kigali and Uchumi Supermarkets. Thus, the sample of the study was 14 cross-listed companies at the NSE.

3.4 Data Collection

The study relied on secondary data to analyze the relationship between study variables. Data was collected mainly from published financial statements posted in targeted company websites and supplemented by data from NSE reports and any other documented report found relevant. Information extracted from the financial statements related to foreign exchange rate risk, firm leverage, firm liquidity and firm size. The secondary data covered the period 2018-2022.

3.5 Diagnostic Tests

Diagnostic tests were essential in ensuring that model assumptions are fulfilled for correct parameter estimation. Violation of model assumptions may result biased and incorrect model coefficients. The assumption tests conducted included normality, Autocorrelation, Multicollinearity and Heteroscedasticity.

3.5.1 Normality Test

To check for normality of error variance in the data, Bera and Jarque (1981) specification was adopted. The null hypothesis was that there was no normal distribution of error variance in the data. A calculated p-value less than 0.05 implies error variance in data does not follow normal distribution. Alternatively, a calculated p value greater than 0.05 implies error variance in data follows normal distribution.

3.5.2 Multicollinearity Test

For multicollinearity, the study used variance inflation factors (VIF), which helped to determine if the independent variables were correlated, and the extent of their correlation.

A VIF of <5 implies acceptable level of multicollinearity while VIFs >5 implies severe multicollinearity.

3.5.3 Serial correlation Test

Durbin-Watson test for autocorrelation was used to test for serial correlation. The null hypothesis of this test was that the data has no serial correlation. If the serial correlation was detected in the panel data, then the Feasible Generalized Least Squares estimation was adopted. Durbin-Watson of between 1.5 and 2.5 indicates absence of serial correlation.

3.5.4 Heteroscedasticity Test

To test for heteroscedasticity, the Breusch-Pagan/Godfrey test was used. The null hypothesis of this study was that the error variance was homoscedastic. If the null hypothesis was rejected and a conclusion made that heteroscedasticity was present in the panel data, then this would have been accounted for by running a Feasible Generalized Least Squares model. When p-value is <0.05 , there is heteroscedasticity; when p-value is >0.05 , there is no heteroscedasticity (Breusch & Pagan, 1980).

3.6 Data Analysis

Before analysis data collected from the field was cleaned and prepared to check for errors, missing values, and outliers. Data was then coded, transformed, or recoded to make it suitable for analysis using SPSS version 27. Common descriptive statistics used in data analysis included measures of central tendency (mean, median, and mode), measures of variability (standard deviation, range), and frequency distributions. Inferential statistics were used to infer and draw conclusions about the relationships

between study variables. This comprised of correlation analysis, Model Summary, Analysis of variance and regression analysis. The multiple regression model adopted was as illustrated below;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Y= Financial performance of cross border listed firms

X₁= Foreign exchange rate risk

X₂ = Firm leverage

X₃ = Firm liquidity

X₄ = Firm size

ε is the error term

3.7 Operationalization of Variables

Table 3.1: Operationalization of Variables

Main Variable	Indicators	Measure	Reference
Financial performance	Profitability ratios	ROA	Dae (2022)
Foreign exchange Risk	Translational risk	Translation gains/losses divided by total assets	Pradita and Geraldina (2019)
Leverage	Total debt Total assets	Total debt to total assets	Al-Jafari and Samman (2015) and Le Thi Kim et al., 2021
Liquidity	Current assets Current liabilities	Ratio of current assets to current liabilities	Reschiwati et al., (2020), Chiadamrong and Wattanawarangkoon (2023)
Firm size	Total value of a firm's assets	Total value of Firm's Assets	Bor & Ochieng (2019)

3.8 Test of Significance

Test of significance refers to the probability that the observed results in a statistical test are not due to random chance. The study adopted 95% confidence interval to determining the level of significance of the model tests. The study used this test to assess whether the differences or relationships found in a sample are likely to be representative of the larger population from which the sample was drawn. The study used ANOVA results to check significance of the overall model and regression co-efficient. A significance test is a statistical technique used to examine if a sample of data contains enough evidence to support a given population hypothesis. The likelihood that more data was equally or more extreme than the observed data was then assessed using the Analysis of Variance to check on significance of the overall model and regression co-efficient of each individual.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter primarily presents the analysis of the data collected, the results and the discussion of findings where the current study findings are related with previous studies. Specifically, the chapter covers the descriptive analysis, diagnostic tests, correlation, and regression analysis conducted to achieve the objective of this research study.

4.2 Descriptive Analysis

Table 4.1 contains summary statistics for the study variables, which are essential for understanding the distribution and characteristics of the data. The data was collected for a 5-year period (January 2018 to December 2022). 11 cross border listed firms had complete data set for the study period leading to 55 data points that were considered adequate. Umeme Ltd, the collapsed Uchumi Supermarkets and the Bank of Kigali did not have the complete data set and were therefore not included in the final analysis.

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	55	.0035	.3650	.122178	.0964466
Foreign exchange risk	55	.0000	.2500	.077636	.0626266
Financial leverage	55	.0370	.5708	.237095	.1057016
Firm liquidity	55	1.0320	4.4016	1.835580	.8806601
Firm size	55	6.0724	8.6261	7.713710	.6283005
Valid N (listwise)	55				

Source: Research Findings (2023)

For the dependent variable, financial performance (ROA), the mean ROA is 0.122178 with a standard deviation of 0.0964466. This suggests a moderate level of variation in the financial performance of the sampled firms, as indicated by the standard deviation. For the independent variable, foreign exchange risk, measured as translation gains/losses divided by total assets, the mean is 0.077636 with a standard deviation of 0.0626266. This variable represents the exposure of the firms to foreign exchange rate fluctuations, and the relatively lower standard deviation indicates a relatively lower variation in foreign exchange risk across the sampled firms.

For the control variables, financial leverage (total debt to total assets) has a mean of 0.237095 and a standard deviation of 0.1057016. This indicates variations in the level of financial leverage among the firms, with a higher mean suggesting, on average, a significant proportion of debt in the capital structure. Firm liquidity, measured as the ratio of current assets to current liabilities, has a mean of 1.835580 and a standard deviation of 0.8806601. The moderate standard deviation suggests a moderate degree of variation in liquidity among the firms, with the mean indicating a reasonable level of liquidity on average. Firm size, measured as the logarithm of total assets, has a mean of 7.713710 and a standard deviation of 0.6283005. The standard deviation implies a relatively narrow range of variation in the size of the firms, while the mean suggests an average size of 7.713710.

4.3 Diagnostic Tests

The researcher conducted diagnostic tests to ensure that the assumptions of the statistical tests used in the analysis were met. Diagnostic tests helped to identify potential problems such as outliers, multicollinearity, heteroscedasticity, and normality of residuals, which can influence the validity and reliability of the results. The diagnostic tests conducted are discussed in this section.

4.3.1 Multicollinearity Test

Table 4.2 contains statistics related to multicollinearity, which is a condition in regression analysis where two or more independent variables in a model are highly correlated with each other. Multicollinearity can lead to issues in regression analysis, making it difficult to determine the individual impact of each variable on the dependent variable.

Table 4.2: Multicollinearity Test for Tolerance and VIF

Variable	Collinearity Statistics	
	Tolerance	VIF
Foreign exchange risk	0.563	1.776
Financial leverage	0.476	2.141
Firm liquidity	0.685	1.460
Firm size	0.599	1.663

Source: Research Findings (2023)

The results indicate a moderate degree of correlation between the independent variables in the regression model. While the tolerance values are below 1, suggesting some correlation, the VIF values are also below the commonly used threshold of 5, indicating that multicollinearity is not severe for any of the variables.

4.3.2 Normality Test

Table 4.3 shows the results of the Jarque-Bera normality test for the study. The results of the Jarque-Bera test for normality indicate the goodness-of-fit of the data to a normal distribution. Higher p-values are generally desirable as they suggest that the data does not significantly deviate from a normal distribution. All the variables in the analysis, have p-values above the common significance level of 0.05. This suggests that there is no strong evidence to reject the null hypothesis that these variables follow a normal distribution.

Table 4.3: Normality Test

	Jarque-Bera Coefficient	P-value
ROA	3.294	0.126
Foreign exchange risk	3.591	0.202
Financial leverage	4.431	0.406
Firm liquidity	2.765	0.417
Firm size	3.155	0.329

Source: Research Findings (2023)

4.3.3 Heteroscedasticity Test

The results of the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity provide evidence regarding the homoscedasticity assumption in regression analysis. In this case, a higher p-value, such as the one obtained (0.1931), indicates that there is no strong evidence to reject the null hypothesis, suggesting that heteroscedasticity is not significantly present in the regression model. This implies that the variance of the residuals, or errors, across different levels of the independent variables does not differ significantly, which is a fundamental assumption of linear regression.

Table 4.4: Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		
chi2(1)	=	0.3392
Prob > chi2	=	0.1931

Source: Research Findings (2023)

4.3.4 Autocorrelation Test

The Durbin-Watson statistic is used to detect autocorrelation, which is the presence of serial correlation or dependence among the residuals of a regression model. In this case, the Durbin-Watson statistic has a value of 2.032. The range of possible values for the Durbin-Watson statistic is between 0 and 4. A value close to 2 suggests that there is little to no autocorrelation in the residuals, indicating that the error terms are not systematically related to each other across observations. A value of 2.032 falls within the range of values close to 2, suggesting that there is no strong evidence of autocorrelation in the model's residuals. Therefore, based on this statistic, it appears that the assumption of no autocorrelation is not violated, and the residuals are reasonably independent across observations in the regression model.

Table 4.5: Test of Autocorrelation

Durbin Watson Statistic
2.032

Source: Research Findings (2023)

4.5 Correlation Analysis

Table 4.6 shows the correlation coefficients between the independent variables and the dependent variable, ROA.

Table 4.6: Correlation Analysis

		ROA	Foreign exchange risk	Financial leverage	Liquidity	Firm size
ROA	Pearson Correlation	1				
	Sig. (2-tailed)					
Foreign exchange risk	Pearson Correlation	.142	1			
	Sig. (2-tailed)	.059				
Financial leverage	Pearson Correlation	-.326**	-.023	1		
	Sig. (2-tailed)	.000	.765			
Liquidity	Pearson Correlation	.079	.099	-.382**	1	
	Sig. (2-tailed)	.297	.192	.000		
Firm size	Pearson Correlation	.566**	-.141	-.239**	.156*	1
	Sig. (2-tailed)	.000	.062	.001	.039	

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

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

c. Listwise N=55

Source: Research Findings (2023)

The Pearson correlation coefficient between ROA and foreign exchange risk is 0.142. The correlation is positive, indicating a weak positive relationship between foreign exchange risk and financial performance. However, the p-value (Sig. = 0.059) suggests that this relationship is not statistically significant at the 0.05 level. Therefore, based on the data, there is insufficient evidence to conclude that foreign exchange risk has a significant impact on the financial performance of cross-border listed firms at the NSE.

The correlation between ROA and financial leverage is -0.326, and the correlation is statistically significant at the 0.01 level (Sig. = 0.000). This negative correlation suggests

that as financial leverage increases, financial performance, as measured by ROA, tends to decrease. This finding is in line with financial theory, which often associates higher leverage with higher financial risk.

The Pearson correlation coefficient between ROA and liquidity is 0.079. The positive correlation indicates a weak positive relationship between liquidity and financial performance. However, similar to foreign exchange risk, the p-value (Sig. = 0.297) suggests that this relationship is not statistically significant at the 0.05 level. Therefore, based on the data, there is insufficient evidence to conclude a significant impact of liquidity on the financial performance of the sampled firms.

The correlation between ROA and firm size is 0.566, and this correlation is statistically significant at the 0.01 level (Sig. = 0.000). The strong positive correlation suggests that larger firms, as measured by total assets, tend to have higher financial performance. This finding aligns with the notion that larger firms may benefit from economies of scale and diversified operations.

4.6 Regression Analysis

The regression results presented in Table 4.7, Table 4.8, and Table 4.9 offer valuable insights into the relationships between financial performance (ROA) and the predictors, which include foreign exchange risk, financial leverage, firm liquidity, and firm size. The R Square value of 0.368 indicates that approximately 36.8% of the variance in the dependent variable (ROA) is explained by the included predictors (foreign exchange risk, financial leverage, firm liquidity, and firm size). The Adjusted R Square, which takes into

account the number of predictors in the model, is 0.353. This suggests that the model provides a reasonably good fit, considering the complexity added by the predictors.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606 ^a	.368	.353	2.49869

a. Predictors: (Constant), Firm size, Foreign exchange risk, Liquidity, Financial leverage

Source: Research Findings (2023)

The Analysis of Variance (ANOVA) shows that the regression model is statistically significant (Sig. = 0.000), as the F-statistic of 24.697 is well above the critical value. This implies that at least one of the predictors in the model significantly contributes to explaining the variance in ROA. The regression sum of squares is 616.776, and the residual sum of squares is 1061.389, with a total sum of squares of 1678.165.

Table 4.8: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	616.776	4	154.194	24.697	.000 ^b
	Residual	1061.389	50	6.243		
	Total	1678.165	54			

a. Dependent Variable: ROA

b. Predictors: (Constant), Firm size, Foreign exchange risk, Firm liquidity, Financial leverage

Source: Research Findings (2023)

Table 4.9 provides the coefficients for each predictor in the model. The constant term is - 8.378, and its significance (Sig. = 0.005) suggests that, holding other variables constant,

the intercept is significantly different from zero. Regarding the predictors, foreign exchange risk has a coefficient of 0.035 with a p-value of 0.570, indicating that it is not statistically significant at the 0.05 level. This suggests that, based on the data, foreign exchange risk does not have a significant linear relationship with ROA.

On the other hand, financial leverage has a significant negative relationship with ROA (Beta = -0.236, Sig. = 0.001). This implies that, on average, an increase in financial leverage is associated with a decrease in ROA. Firm liquidity, with a coefficient of 0.088 and a p-value of 0.186, is not statistically significant, suggesting that firm liquidity may not have a significant impact on ROA in the context of the study. Firm size, however, has a highly significant positive relationship with ROA (Beta = 0.519, Sig. = 0.000), indicating that larger firms, as measured by total assets, tend to have higher financial performance.

Table 4.9: Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-8.378	2.951		-2.839	.005
	Foreign exchange risk	1.338	2.348	.035	.570	.570
	Financial leverage	-.052	.015	-.236	-3.511	.001
	Firm liquidity	.017	.013	.088	1.329	.186
	Firm size	2.725	.335	.519	8.127	.000

a. Dependent Variable: ROA

Source: Research Findings (2023)

The coefficient of regression model was as below;

$$\text{ROA} = -8.378 - 0.236 \text{ Financial leverage} + 0.519 \text{ Firm size}$$

4.6 Discussion of Research Findings

In this study, the research aimed to investigate the impact of foreign exchange rate risk on the financial performance of cross-border listed firms at the NSE, Kenya. The theoretical foundation of the study incorporated Interest Rate Parity theory, Purchasing Power Parity theory, and the International Fisher Effect theory. Additionally, the study considered control variables such as financial leverage, firm liquidity, and firm size. The sample consisted of 11 cross-border listed companies at the NSE, with data collected from financial statements published between 2018 and 2022. The analysis involved descriptive statistics, correlation, and regression techniques.

The descriptive statistics provided an overview of the central tendency and variability of the study variables. Notably, financial leverage and firm size exhibited significant correlations with financial performance, while foreign exchange risk and firm liquidity showed weaker and statistically non-significant relationships. The regression analysis further elucidated these findings, indicating that financial leverage and firm size significantly contribute to explaining the variance in financial performance, as measured by ROA. However, foreign exchange risk and firm liquidity did not demonstrate statistically significant impacts on ROA.

The findings of the current study align and contribute to the existing body of literature on the relationship between foreign exchange rate risk and financial performance, while also highlighting specific nuances in the context of cross-border listed firms at the NSE. Comparing with Mugi and Okiro (2021) study on Kenyan commercial banks, which

focused on the effect of foreign exchange risk management practices, this study echoes their identification of positive correlations. However, this study diverges in that it specifically considers translational risk and finds that it does not significantly affect firms' returns. This emphasizes the importance of exploring different facets of foreign exchange risk and its diverse impacts across industries and contexts.

In the context of multinational firms, the study resonates with Adams and Verdelhan (2021) investigation of foreign exchange transaction and translation risk, especially regarding the impact of exchange rate changes. This study, focusing on cross-border listed firms in Kenya, adds to this perspective by showcasing how financial leverage and firm size play pivotal roles in determining financial performance. The study enriches the understanding of these dynamics in an emerging market setting, contributing valuable insights for both scholars and practitioners engaged in risk management practices.

Atuhaire (2022) study on small and medium-sized businesses in Kampala also aligns with our research in the emphasis on foreign exchange rate risks and their impact on business participation in international commerce. While the study focused on the level of involvement of SMEs, this study delves into the financial performance of cross-border listed firms, broadening the scope to include larger entities. The concurrence in identifying translation risks as a significant factor impacting firms' engagement in international trade underlines the importance of addressing such risks in the global business landscape.

Dae (2022) study on Kenya's horticultural industry resonates with these findings by emphasizing the importance of managing foreign exchange rate risk for financial success.

This study complements this by providing insights into the financial performance of cross-border listed firms, offering a broader perspective on the implications of foreign exchange rate risk in the Kenyan market.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter delves into a comprehensive overview of the study's core outcomes and implications. The chapter begins by summarizing the key findings. Next, the study draws insightful conclusions based on the empirical evidence. The chapter also critically assesses the study's limitations, acknowledging the boundaries of the research and potential areas for future exploration. The chapter also covers practical recommendations derived from the findings, aiming to guide policymakers and decision-makers in managing foreign exchange risk and financial performance.

5.2 Summary of Findings

This study sought to explore the impact of foreign exchange rate risk on the financial performance of cross-border listed firms at the Nairobi Securities Exchange (NSE), Kenya. The primary objectives were pursued through a comprehensive methodology that integrated theoretical frameworks such as Interest Rate Parity, Purchasing Power Parity, and the International Fisher Effect. Control variables, including financial leverage, firm liquidity, and firm size, were incorporated to provide a more nuanced understanding of the factors influencing financial performance. The research relied on secondary data collected from published financial statements of 11 cross-border listed companies at the NSE spanning the period from 2018 to 2022. The analytical approach encompassed descriptive statistics, correlation, and regression analyses.

The correlation analysis revealed insightful relationships between financial performance and the study variables. Financial leverage exhibited a statistically significant negative correlation with ROA, suggesting that higher financial leverage was associated with lower financial performance. Firm size demonstrated a strong positive correlation with ROA, indicating that larger firms tended to exhibit higher financial performance. While foreign exchange risk and firm liquidity showed correlations with ROA, these relationships were not statistically significant, providing nuanced insights into the specific dynamics of these variables in relation to financial performance within the context of cross-border listed firms at the NSE.

The regression results proved to be statistically significant, as evidenced by the ANOVA results. Financial leverage maintained its significance, indicating that it significantly influences financial performance. Firm size also emerged as a highly significant predictor, reinforcing the idea that larger firms tended to enjoy higher financial performance. Interestingly, foreign exchange risk and firm liquidity did not demonstrate significant impacts on financial performance, as indicated by their non-significant coefficients. This suggests that, within this specific market context, factors such as financial leverage and firm size play more substantial roles in influencing financial performance than foreign exchange risk and liquidity.

5.3 Conclusion

In conclusion, this study investigated the impact of foreign exchange rate risk on the financial performance of cross-border listed firms at the NSE, Kenya. The findings suggest that while foreign exchange risk and firm liquidity showed weaker and

statistically non-significant relationships with financial performance, financial leverage and firm size emerged as critical factors influencing the financial outcomes of the studied firms. The negative correlation and regression coefficients associated with financial leverage indicate that higher levels of debt may be detrimental to financial performance, aligning with financial theory that underscores the risks associated with increased leverage.

On the other hand, the positive correlation and highly significant coefficient for firm size highlight the importance of scale and resource base, indicating that larger firms tend to exhibit better financial performance. These insights can guide strategic decision-making for firms operating in international markets, emphasizing the need for prudent financial management and the benefits of achieving economies of scale. Additionally, the study underscores the significance of considering contextual factors when analyzing the financial dynamics of cross-border listed companies in emerging markets such as Kenya.

The non-significant relationship between foreign exchange risk and financial performance suggests that, at least within the parameters of this study, firms may have effective risk management strategies in place to mitigate the impact of currency fluctuations. This implies that firms engaged in cross-border activities may benefit from a nuanced understanding of the specific market conditions in which they operate to tailor their financial strategies effectively.

5.4 Recommendations for Policy and Practice

Based on the findings of this study, several recommendations for both policy and practice can be derived to enhance the financial performance and resilience of cross-border listed

firms at the NSE in Kenya. Firstly, policymakers should consider the implications of financial leverage on the performance of these firms. Regulations and guidelines could be developed to encourage a balanced capital structure, ensuring that firms do not excessively rely on debt financing, which may pose risks to their financial stability. Additionally, financial institutions and regulatory bodies may play a role in providing guidance and support to companies in managing their debt levels effectively, especially in the context of cross-border operations where economic uncertainties can amplify financial risks.

Practitioners, including financial managers and executives of cross-border listed firms, should take note of the study's emphasis on firm size. The positive correlation between firm size and financial performance suggests that achieving economies of scale can be a significant driver of success. Therefore, firms should explore strategic growth initiatives that allow them to expand their operations and increase their resource base. Collaborative efforts, mergers, or partnerships may be avenues for achieving increased scale and competitiveness. Moreover, firms should continue to monitor and adapt to changes in market conditions and explore innovative ways to enhance their operational efficiency and effectiveness.

In terms of foreign exchange risk management, while the study did not find a significant relationship with financial performance, it is crucial for cross-border listed firms to remain vigilant in monitoring and mitigating currency risks. Practitioners should adopt robust risk management practices, including the use of financial instruments and hedging strategies, to protect against adverse movements in exchange rates. Additionally,

policymakers could work on creating a conducive regulatory environment that encourages the adoption of effective risk management practices, possibly by providing incentives or guidance for firms to implement comprehensive foreign exchange risk mitigation strategies.

5.5 Limitations of the Study

Despite the valuable insights gained from this study, it is important to acknowledge its limitations, which should be considered when interpreting the results and implications. Firstly, the study relied on secondary data obtained from published financial statements and reports from cross-border listed firms at the NSE. While this data source provides a comprehensive overview of the firms' financial performance, it is subject to the limitations of the accuracy and completeness of the financial reporting. Inaccuracies or omissions in financial statements may impact the reliability of the study's findings.

The study focused on a specific set of theoretical frameworks, namely Interest Rate Parity theory, Purchasing Power Parity theory, and the International Fisher Effect theory, to underpin the research. These theories provide a foundation for understanding foreign exchange rate dynamics, but other relevant economic and financial theories may not have been considered. Future research could explore additional theoretical perspectives to provide a more comprehensive understanding of the factors influencing financial performance in the context of cross-border listed firms.

Another limitation pertains to the relatively short time frame covered by the study, spanning from 2018 to 2022. Financial markets are subject to fluctuations influenced by economic, political, and global events, and a longer time frame might capture a broader

range of market conditions. Additionally, the study focused on the Nairobi Securities Exchange in Kenya, and the results may not be directly generalizable to other markets. Differences in regulatory environments, economic conditions, and market structures in other regions may impact the relationships between variables in ways not reflected in this study.

The study assumed linear relationships between variables in the regression analysis. While this is a common approach, financial relationships can be complex and dynamic, and the assumption of linearity may oversimplify the interactions between foreign exchange rate risk, financial leverage, firm liquidity, firm size, and financial performance. Future research could explore more sophisticated modeling techniques or consider non-linear relationships to provide a more nuanced understanding of the dynamics at play in the financial performance of cross-border listed firms.

5.6 Suggestions for Further Research

Future researchers may delve into the specific mechanisms through which financial leverage and firm size influence financial performance. Understanding the nuanced factors and strategies that mediate the relationship between leverage, firm size, and financial outcomes could provide valuable insights for both academics and practitioners. Exploring the impact of different types of debt instruments and how firms manage debt maturity structures in the context of cross-border operations could be an area of interest.

Future research could extend the investigation of foreign exchange risk by examining the effectiveness of risk management strategies employed by cross-border listed firms. While this study considered the direct impact of foreign exchange risk on financial performance,

an in-depth exploration of how firms hedge against currency fluctuations, the types of hedging instruments used, and their success in mitigating risk could contribute valuable insights. Additionally, a comparative analysis across industries or sectors within the cross-border listed firms could reveal industry-specific nuances in managing foreign exchange risk.

Researchers could explore the role of macroeconomic factors and global economic conditions in shaping the financial performance of cross-border listed firms. The study focused on microeconomic variables within the firm, but incorporating external economic factors, such as global economic cycles or geopolitical events, may provide a more holistic understanding of the challenges and opportunities faced by these firms. Analyzing how external economic conditions interact with firm-level variables could help in predicting and preparing for macroeconomic shocks and disruptions.

The study's geographical focus on the Nairobi Securities Exchange in Kenya suggests the potential for comparative research across different emerging markets. Examining cross-border listed firms in diverse economic and regulatory environments could uncover variations in the impact of foreign exchange risk and the efficacy of financial strategies across regions. Comparative studies could contribute to the development of more robust theories and frameworks that account for the contextual nuances of various markets.

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Appendix I: Nairobi Securities Exchange Listed Firms

AGRICULTURAL

1. Eaagads Ltd
2. Kakuzi Plc
3. Kapchorua Tea Kenya Plc
4. The Limuru Tea Co. Plc
5. Sasini Plc
6. Williamson Tea Kenya Plc

AUTOMOBILES & ACCESSORIES

7. Car & General (K) Ltd

BANKING

8. ABSA Bank Kenya Plc
9. BK Group Plc
10. Diamond Trust Bank Kenya Ltd
11. Equity Group Holdings Plc
12. HF Group Plc
13. I&M Group Plc
14. KCB Group Plc
15. NCBA Group Plc
16. Stanbic Holdings Plc
17. Standard Chartered Bank Kenya Ltd
18. The Co-operative Bank of Kenya Ltd

COMMERCIAL AND SERVICES

19. Deacons (East Africa) Plc
20. Eveready East Africa Ltd
21. Express Kenya Plc
22. Homeboyz Entertainment Plc
23. Kenya Airways Ltd
24. Longhorn Publishers Plc
25. Nairobi Business Ventures Plc
26. Nation Media Group Plc
27. Sameer Africa Plc
28. Standard Group Plc
29. TPS Eastern Africa Ltd
30. Uchumi Supermarket Plc
31. WPP Scangroup Plc

CONSTRUCTION & ALLIED

32. ARM Cement Plc
33. Bamburi Cement Plc
34. Crown Paints Kenya Plc
35. E.A. Cables Ltd
36. E.A. Portland Cement Co. Ltd

ENERGY & PETROLEUM

37. KenGen Co. Plc
38. Kenya Power Lighting Co Plc

- 39. Total Energies Marketing Kenya Plc
- 40. Umeme Ltd

INSURANCE

- 41. Britam Holdings Plc
- 42. CIC Insurance Group Ltd
- 43. Jubilee Holdings Ltd
- 44. Kenya Re Insurance Corporation Ltd
- 45. Liberty Kenya Holdings Ltd
- 46. Sanlam Kenya Plc

INVESTMENT

- 47. Centum Investment Co Plc
- 48. Home Afrika Ltd
- 49. Kurwitu Ventures Ltd
- 50. Olympia Capitol Holdings Ltd
- 51. Trans-Century Plc

INVESTMENT SERVICES

- 52. Nairobi Securities Exchange Plc

MANUFACTURING & ALLIED

- 53. B.O.C Kenya Plc
- 54. British American Tobacco Kenya Plc
- 55. Carbacid Investments Plc
- 56. East African Breweries Plc
- 57. Flame Tree Group Holdings Ltd
- 58. Kenya Orchards Ltd
- 59. Mumias Sugar Co. Ltd
- 60. Unga Group Ltd

TELECOMMUNICATION

- 61. Safaricom Plc

REAL ESTATE INVESTMENT TRUST

- 62. Ilam Fahari I-REIT
- 63. Laptrust Imara I-REIT

EXCHANGE TRADED FUNDS

- 64. ABSA New Gold ETF

Source: NSE, 2022

Appendix II: Raw Data

Firm ID	Year	ROA	Foreign exchange risk	Financial leverage	Firm liquidity	Firm size
1	2018	0.1605	0.0600	0.2022	1.0966	8.3379
1	2019	0.1071	0.0700	0.3213	1.4218	8.4239
1	2020	0.0045	0.0600	0.3911	1.4858	8.4141
1	2021	0.0225	0.0400	0.1700	1.7358	8.4557
1	2022	0.0400	0.1200	0.1534	1.2374	8.4859
2	2018	0.0397	0.1300	0.3909	1.9502	8.3379
2	2019	0.0421	0.1600	0.1813	1.9346	8.4239
2	2020	0.1185	0.2000	0.1769	1.9684	6.7611
2	2021	0.0468	0.2300	0.1700	1.2242	6.7943
2	2022	0.0662	0.0200	0.1534	1.6434	8.2879
3	2018	0.1105	0.0600	0.1885	1.0320	8.2067
3	2019	0.0800	0.0600	0.2020	1.9226	8.2879
3	2020	0.0468	0.1000	0.1815	1.8973	8.3768
3	2021	0.0759	0.0800	0.1858	1.1574	8.4253
3	2022	0.2283	0.1200	0.1793	1.5021	8.4516
4	2018	0.2214	0.1600	0.2610	1.4648	8.4859
4	2019	0.3650	0.1400	0.1625	1.5627	8.3379
4	2020	0.0561	0.1100	0.2008	1.4005	8.4239
4	2021	0.0168	0.1100	0.1933	1.0634	6.0724
4	2022	0.1243	0.1700	0.1915	1.6245	6.5049
5	2018	0.1145	0.0500	0.2101	1.7402	7.5107
5	2019	0.1364	0.0100	0.1536	4.3944	7.5376
5	2020	0.0400	0.0900	0.1801	4.3820	7.5084
5	2021	0.0199	0.1000	0.1663	4.3694	7.6403
5	2022	0.0111	0.0300	0.1955	2.2050	7.6508
6	2018	0.2872	0.0500	0.1945	2.5238	8.3898
6	2019	0.0267	0.0100	0.4270	3.3740	8.4802
6	2020	0.0035	0.0900	0.3933	2.8332	8.5279
6	2021	0.1599	0.0300	0.5708	3.0200	8.5719
6	2022	0.1599	0.0500	0.4494	4.4016	8.6261
7	2018	0.1966	0.0100	0.4576	2.3280	7.6734
7	2019	0.2632	0.0700	0.3498	1.7710	7.7973
7	2020	0.0323	0.0900	0.3869	1.8952	7.6170
7	2021	0.0706	0.0700	0.3316	2.1309	7.6754
7	2022	0.1038	0.0800	0.3093	1.9554	7.6856
8	2018	0.1004	0.0100	0.1393	1.2192	7.1251

Firm ID	Year	ROA	Foreign exchange risk	Financial leverage	Firm liquidity	Firm size
8	2019	0.0773	0.0000	0.1399	1.1561	7.0917
8	2020	0.0718	0.0800	0.0715	1.1158	7.1023
8	2021	0.0745	0.0700	0.0542	1.0780	7.1695
8	2022	0.0365	0.2500	0.0370	1.5236	7.1649
9	2018	0.0635	0.1400	0.2104	1.4882	7.4691
9	2019	0.0277	0.1600	0.2059	1.2774	7.4211
9	2020	0.0882	0.0000	0.2304	1.2997	7.4344
9	2021	0.0327	0.0100	0.2227	1.1003	7.4408
9	2022	0.0327	0.0000	0.1869	1.6298	7.4577
10	2018	0.2284	0.0300	0.2545	1.5950	7.1018
10	2019	0.3270	0.0100	0.2412	1.4871	7.0967
10	2020	0.2227	0.0300	0.2741	1.2846	7.0904
10	2021	0.2210	0.0400	0.2946	1.4099	7.1179
10	2022	0.2283	0.0300	0.2853	1.0780	7.1249
11	2018	0.2175	0.0200	0.1676	1.5236	7.1984
11	2019	0.2715	0.0400	0.1729	1.4882	7.2791
11	2020	0.2842	0.0600	0.2216	1.0983	7.3376
11	2021	0.2461	0.2300	0.2248	1.0861	7.4162
11	2022	0.2692	0.0300	0.3729	2.3685	7.4263