

**FINANCIAL RISKS AND FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN SOUTH SUDAN**

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**A research project submitted to the school of business in partial fulfillment of the
requirements for the award of a master degree in business administration (finance option)
at Africa Nazarene University**

April, 2025

DECLARATION

I do hereby declare that this Research Project is my original work and that it has not been presented for any degree in any university that I am aware of.

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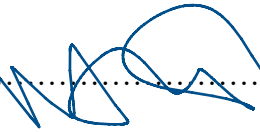
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DEDICATION

I dedicate this research to my family members for their love, support, understanding and encouragement they accorded me during my academy life. Also extend these pledges to the friends who always encourage, challenge and support me morally to go far in my academic journey

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I have learnt a few choice lessons in the completion of project writing as this one. Most important is how much we need others to do anything substantial in academics. Special thanks to my supervisors Dr Michael Musembi and Dr Moses Owino for their critical and humble manner they painstakingly guided me eventually to come up with this research writing. I want to thank God for this far He has brought me. I want to express my gratitude to Africa Nazarene University for providing a conducive learning environment and its fraternity for continuous support thus far. My heartfelt appreciation to anyone who has contributed to my education from the beginning to this far I have come, may God bless you abundantly. Most importantly, to my family who stood with and supported me morally and spiritually, thank you for being my side throughout this journey, May good Lord bless you.

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ABSTRACT

The banking sector in South Sudan has experienced more than a decade of significant financial risks since gaining independence from Sudan. Such risks that pose financial instability are characterized by internal and external factors like COVID-19 Pandemic and geopolitical tension both inside and outside the country. The industry comprises of both local, Joint Venture and foreign commercial banks characterized by poor financial performance. Consequently, the number of banks is reported undercapitalized and non-compliance with statutory requirement of 20% reserve with the Central Bank. This has led to the collapse of 14 domestic commercial banks as reported by both Bank of South Sudan and IMF. The financial sector is remaining vulnerable to risks that pose a threat to sustainability and financial viability, including liquidity, credit, exchange rate and interest rate risks. The study sought to establish the effect of financial risk on the financial performance of South Sudanese commercial banks. The objectives were to determine the effect of liquidity, credit, exchange rate and interest rate risks on the financial performance of commercial banks in South Sudan. The study adopted the theories of Liquidity Preference Theory, Interest Rate Parity, International Fisher Effect and Agency theories. Financial performance of commercial banks is to be assessed through ROA using data from 33 banks. The study used a longitudinal research design that observed data series over a period of time in which the target population is 33 commercial banks from 2014 to 2023. The researcher relied on secondary data and that were collected from audited financial statements of commercial banks and data obtained from Central Bank website. The study employed descriptive and inferential statistics within the multiple regression model frameworks to analyze the data using EVIEWS version. Diagnostic tests such as normality, multicollinearity, heteroscedasticity, and Stationarity tests were performed to eliminate unbiasedness. The study findings indicated that credit risk (Coef=3.2201, $p=0.0323$) had a statistically significant and positive effect on the financial performance while interest rate risk (Coef= -0.5005, $p=0.0211$) found to have a statistically significant and negative effect on the financial performance of commercial banks. In addition, the research results found that exchange rate risk (Coef=0.0035, $p=0.1362$) and liquidity risk (Coef=0.0051, $p=0.4135$) had a statistically insignificant effect on the financial performance of commercial banks in South Sudan. The study recommended that banks should employ the use of swaps, spot, forward market, and bilateral agreement to reduce risk associated with exchange rates. Also study recommended banks to build trust and confidence with the public in order to reduce NPLs ratios, hence increase customers' apathy to take loans that bring funds to the banks. Central bank to impose strict regulation on commercial banks to keep liquidity problems at bay that causing banks collapsed.

DEFINITIONS OF TERMS

Risk	is defined as the unexpected change or unpredictability of returns (Bansal <i>et al.</i> 1992 & Holton, 2004).
Financial risk	refers to the probability of a firm collapsing when the company uses debt to satisfy financial commitments when the cash balance is inadequate (Fali <i>et al.</i> ., 2020).
Liquidity risk	it is when a bank cannot meet its short term financial obligations and its needs when fall due.
Credit risk	refers to the default happens when a borrower fails to repay the principal and interest levied against the loan when taking it.
Exchange rate risk	refers to the exposure to unexpected fluctuations in the exchange rate between two countries' currencies
Interest rate risk	it is a risk of fluctuations of the interest rates which have a direct effect on financial assets and liabilities of a firm
Performance	refers to a gauge over time of the health of a firm
Bank	refers to a financial institution that is licensed to accept deposits and give loans to the general public and entities. It also acts as an intermediary between lenders and borrowers where it facilitates the flow of cash from savers to spenders in the name of loans
Financial performance	refers to an essential meter of a firm strength, stability and ability to generate revenues or cash flows
Commercial bank	refers to a financial institution which receives deposits from the public and companies and also gives loans and services to the same entities

ABBREVIATIONS / ACRONYMS

BoSS- Bank of South Sudan

IMF- International Monetary Fund

AFDB- Africa Development Bank

CBK- Central Bank of Kenya

RBI- Reserve Bank of India

NSE- Nairobi Stock Exchange

ROA- Return of Assets

ROE- Return on equity

NIM- Net Interest Margin

SSP- South Sudan Pound

USD- United States Dollar

PLC- Public Limited Company

IFC- International Finance Corporation

KCB- Kenya Commercial Bank

CPA- Comprehensive Peace Agreement

ANU- Africa Nazarene University

BoG- Bank of Ghana

NEC- National Economics Conference

OLS –Ordinary Least Squares

PCSE- Panel Corrected Standard Errors

GDP- Gross Domestic Product

NPLs- Non-performing Loans

SSIA-South Sudan Investment Authority

CPI-Consumer Price Index

SSNBS- South Sudan National Bureau of Statistics

NBS- South Sudan Bureau of Standards

ATMs- Automated Teller Machine

ARDL- Autoregressive Distributed Lag

NARDL-Nonlinear Autoregressive Distributed Lag

NACOSTI- National Commission for Science, Technology and Innovation

IMFWEO- International Monetary Fund world Economic outlook

WBSSEM- World Bank South Sudan Economic Monitoring

STATA-Statistical and Data

CRB-Credit Reference Bureau

SPSS-Statistical Package for Social Science

FDIC – Federal Deposits Insurance Corporation

KRIs – Key Risk Indicators

FSAPs-	Financial	Sector	Assessment	Program
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CHAPTER ONE

INTRODUCTION TO STUDY

1.1 Introduction

This chapter introduces the background information, statement of the problem, purpose of the proposed study, objectives, research questions, scope of the study, and significance. Limitations and delimitations of the study will look at also, as well as conceptual and theoretical frameworks.

1.2 Background of the Study

The banking industry is crucial for economic prosperity, as it accumulates funds and channels them to investors as credit, generating surpluses but requiring more capital due to financial risks (World Bank, 2023). The banking system plays a vital role in finance and economic development, promoting stable and healthy financial growth (Alam *et al.*, 2021). Alam *et al.*(2021) argued that also reduces systemic risk within banks, facilitating the implementation of accommodative monetary policies It provides monetary intermediation, balancing money flow and enabling surplus savings for those without access to investments (Chol *et al.*, 2019). Bank stability fosters market discipline, enhancing foreign investor confidence and attracting investment (Raad, 2023; Hilscher and Raviv, 2014).

On a global scale, banks are always at risk of collapsing due to financial vulnerabilities, which can severely impact a country's economy (Oyetade & Muzindutsi, 2023; Montes *et al.*, 2021). The primary concern is to mitigate the risks associated with both internal and external factors. Banks face challenges from increasing credit through domestic and international loans, liquidity management problems, and rising exchange rates as investors and traders compete for foreign currencies (FDIC, 2023; S & P Global, 2023). Finally, banks are raising interest rates to maintain the balance between their assets and liabilities (Financial Stability Report, 2023). Consequently, the year 2020 marked the most severe recession since the Great Depression, with a worldwide economic contraction of 3% (Owen, 2023). Specifically, China's growth fell from 6.1% in 2019 to 1.2% in 2020, while Europe contracted by 6.6% and the US by 6% (IMF Blog, 2020).

Quinn (2020) points out that the financial crisis of 2007–2008 was largely caused by subprime borrowers—individuals with poor credit histories who were unlikely to repay their loans. This crisis adversely affected the performance of commercial banks and threatened the future of Lehman Brothers, which went bankrupt in the United States. Meanwhile, Icelandic Bank and Northern Rock faced significant declines in the UK and were later rescued by the government (Kobrin, 2021). Consequently, the financial risks impacted all of Europe. Institutions like the World Bank, IMF, and Euro Bank provided bailouts to Portugal, Greece, Spain, and Ireland after their economies collapsed (Crafts & Mills, 2020). In 2023, it is predicted that thirty percent of European banks will be subjected to a forecast-based Key Risk Indicator (KRI)

Financial institutions in Kenya are experiencing risks that include loss of trust, insolvency, and customer withdrawals, which are driven by word of mouth (Njiru, 2020). Increasing interest rates, higher taxes, significant inflation, shortages in foreign currency, and delays from the government in settling outstanding bills are aggravating the issues related to rising loans and non-performing loans within the local banking sector (Moody Rating, 2023). In 2015, regulatory authorities identified risks associated with Dubai, Imperial, and Chase banks, which eventually led to their insolvency (CBK, 2020; Acharya *et al.*, 2015).

Since gaining independence from Sudan, the banking sector in South Sudan has been affected by financial risks and shocks (Dr. Bak, 2023). These risks include both internal and external shocks such as the COVID-19 pandemic, floods, locust invasions, the Russia-Ukraine war, and the conflict in Sudan. According to the World Bank (2023), the country's economy saw a contraction of 0.4% in 2023, a drop from 2.3% in 2022. The BoSS (2022) highlighted that 14 domestic banks are significantly undercapitalized, with 2 having collapsed and another two under monitoring, while access to banking services remains limited in rural regions, where many banks are struggling to meet the Central Bank's minimum reserve requirement of 20%. The ratio of non-performing loans (NPLs) to total loans increased by 12% in 2020, with credit to the private sector reaching SSP26.3 million, representing 17.5% of GDP. The majority of credit was allocated to domestic trade, restaurants, and hotels, constituting 44% of total loans, followed by real estate at 15%, while agricultural credit constituted only 0.4%. Lending interest rates are still high, reflecting a lack of development and competition in the banking sector (AFDB, 2022-2024).

1.2.1 Financial Risks

Kioko *et al.* (2019) defined financial risk in their study as a risk that causes a firm's financial loss. These risks are caused by instabilities and losses in the financial market arising from stock price movements, variations in currencies, and interest rates. The financial risk for the banking sector is composed of credit risk, liquidity risk, interest rate risk and foreign exchange rate risk. Furthermore, Onsongo *et al.* (2020) state that financial risk is the probability of a firm collapsing when the company uses debt to satisfy financial commitments when the cash balance is inadequate. Financial risk is composed of liquidity risk, credit risk, market risk, and other forms of non-financial risk (Kassi *et al.*, 2019). They specified that there is a probability of a firm collapsing when the company uses debt to satisfy financial commitments when the cash balance is inadequate (Onsongo *et al.*, 2020). He Furthermore states that financial risk is composed of market risk, liquidity risk, exchange rate and interest rate risk, which have a significant impact and are negative on the financial performance of banks.

1.2.1.1 Liquidity Risk

Omondi (2019) defined liquidity risk as the possibility that a bank may be unable to meet its short-term financial demands as and when required. For instance, financial institutions such as the IMF must have adequate usable resources available to meet country members' demand for financing. RBI (2020) says that to ensure adequate liquidity in the market, the central banks have to intervene during the pandemic by reducing the primary reserve requirement from 10% to 8%. The Bank of Ghana (2020) states that, banks may need to resort to contingency funding plans due to increased market volatility and potential limit/threshold breaches. Some banks may already be experiencing increased liquidity tightening. Therefore, this may result from the increased withdrawals and higher counterparty default correlation within affected sectors, potentially leading to reduced net inflows in banks (Larbi-Odam *et al.*, 2020).

Liquidity risk affects an institution's capital or earnings from its inability to hit its obligations when they fall due and do not incur significant losses (Larbi-Odam *et al.*, 2020). Liquidity risk can lead to the firm's insolvency, as with Dubai and Imperial banks (Njiru, 2020).

The effect of the liquidity of one bank may result in a loss of confidence in other banking institutions, resulting in a bank run. This is because if citizens' trust in the bank is affected,

he/she will tell others, and everybody will withdraw all their money from the banks (CBK, 2020). A bank experiences liquidity risk when there is an inability to accommodate deposit redemption and other liabilities effectively. Liquidity risk is currently faced by most banks, including Kenya Commercial banks, due to the very high number of people applying for loans that are not available from banks. Listed commercial Banks, in turn, increase the interest rates to limit the number of loan applicants; this shows that financial risks replicate different forms of risks, lowering the banks' profitability (Omondi, 2019). Liquidity is the tendency of the assets to be easily converted into cash. The bank's liquidity means it can easily convert its assets to cash when needed. The primary tool for any bank is the availability of cash when demanded, either in demand deposits notes or coins. The C.B. regulates this by ensuring that every bank always has sufficient liquid to safeguard the soundness and stability of financial systems (Kioko *et al.*, 2019).

1.2.1.2 Credit Risk

Njiru (2020) defines credit risk in his study as a degree of asset quality among the dynamics which affect the health status of a bank. Larbi-Odam *et al.* (2020) define credit risk as the risk associated with a loan given by a bank, which will not be repaid—either partially or fully—on time. In other words, credit risk is the bank's loss when the borrower fails to honour the debt obligation by the given due date or on loan maturity and may cause bankruptcy if not appropriately managed. Sometimes, borrowers may fail to make required payments, leading to a debt; this becomes a risk by default and is referred to as credit risk (Omondi, 2019).

Larbi-Odam *et al.* (2020) state that the spread of COVID-19 has negatively impacted many firms due to downsizing risks to their earnings prospects. This has impacted the firms' capacity to meet contractual loan obligations with banks, increasing NPLs. Despite the flexibility the Central Bank offers in loan provisioning, the lockdown in parts of the country and the closure of some businesses may exacerbate the risk of defaults. Onsongo *et al.* (2020) argue that signalling a potential increase in credit risk on the interbank market even though interest rates remain low. Credit risk affects ROA by deducting the net income generated when loans default or borrowers fail to make repayments. Credit risk also reduces bank income when the borrower fails to repay, and the bank incurs losses. Therefore, the bank management should conduct screening before

and after a client applies for loans to ascertain that the applicant has no risk or there is a risk of default on debts that may arise from his/her failure to redeem payments (Omondi, 2019).

This risk entails non-performing loans, which every bank usually experiences because they are a significant source of income. Every bank has policies put in place to hedge against it affecting the bank's profits. However, since it is a significant income channel, banks usually ignore some credit techniques to make as many sales as possible. In the end, they make losses due to a lack of adherence to policies of risk management guides by (CBK, 2022); hence, the ignorance can culminate in poor financial performance. The existence of the Credit reference bureau CRB (2022) has also promoted this vice because the bankers tend to believe that customers will not default for fear of being blacklisted. However, the recent move by the new administration in Kenya was not to release the negative credit information but instead to suspend the listing for 12 months for borrowers who had NPLs below Ksh 5 million

1.2.1.3 Exchange Rate Risk

Omondi (2019) argued that exchange rate risk is an exposure to unexpected fluctuations in the exchange rate between the two countries. He also says a decrease in the foreign exchange risk leads to an increase in the ROE. Molla (2019) says that foreign exchange rate risk had a negative significant effect on the financial performance of commercial banks. Since the Bank of South Sudan (2020) abandoned fixed exchange rates and adopted afloat in 2016, many banks were at risk due to the assets' lost value and the money in the form of deposits devalued. This caused foreign currency shortage to become a problem in the banking system due to people scrambling for hard currency to convert their cash into foreign currency; hence, increased volatility and a decline in the value of many financial asset classes may impact the trading books of most banks due to the increased market risk (Larbi-Odam *et al.*, 2020). They argued that the uncertainty caused by the pandemic could increase pressure on the local currency, resulting in higher foreign exchange risk.

Exchange rate risk arises when a company is involved in international business, and the cash flows are in a foreign currency. The exchange rate is flexible and may not be fully predicted as any change in a foreign exchange rate causes a change in risk of changes in payable and receivable amounts and receivables and payables (Kioko *et al.*, 2019). He states that foreign exchange rate risk is a prospective or current risk to capital and earnings brought by the movement of currency exchange rates. Additionally, Abbas *et al.* (2019) indicate that

fluctuations in currency affect financial performance, which eventually negatively affects the return on assets and equity. The exchange rate risk can have the most significant effect on commercial banks' financial performance and profitability. In order to improve, banks can increase their financial performance through efficient and effective management of exchange rate risk by dealing with swaps, options, spot markets and forward markets when banks deal with operations abroad to minimize the exchange rate risk (Arkangelo *et al.*, 2021)

1.2.1.4 Interest Rate Risk

Owen (2023) indicates that higher interest rates have exposed vulnerabilities in some banks, and many more would be weakened by a prolonged period of tight monetary policy. He states that banks should prepare for a possible resurgence of these risks, as interest rates may stay higher for longer than currently priced in markets. The back-testing tool shows a surge of potentially vulnerable institutions at the onset of the pandemic and a sustained rise in late 2022 as higher interest rates begin to bite; hence, this latter group included the four banks that either failed or were taken over in March (Jeff, 2023). Ugah (2020) implies that interest rate risk affects and reduces bank performance, measured by return on assets. This implies that the rate of interest that banks offer customers has an element of risk, especially when interest is due for payment; however, high-interest rates charged by bank(s) may pose a significant risk to bank customers.

Larbi-Odam *et al.* (2020) argue that interest rate risk increases volatility, and a decline in the value of many financial asset classes may impact the trading books of most banks due to the increased market risk. Furthermore, state banks could use value at risk (VaR) estimates to measure the maximum potential loss at a given confidence level. Banks should also estimate how the reduction in interest rates will impact their rate-sensitive assets and liabilities and the subsequent implication on profitability. The persistence of the outbreak could further weigh on investor risk appetite, thereby impacting the stock and bond market. Interest rate risk is based on variation of interest rates and is viewed in various ways; one way is through variation in interest rates while combined with various short-term funding and loans. A rise in the rate of interest leads to high-interest variable payments loan rates, and funding follow-up is more expensive, leading to decreased earnings, which can lead to financial distress (CBK, 2022).

1.2.2 Financial Performance

Essentially, performance gauges how well a business uses its assets to maximize returns on investments by its stakeholders (Onsongo *et al.*, 2020). Financial performance refers to a firm's ability to manage strategies and important decisions to achieve its objectives and goals and obtain high returns. Financial performance summarises the management's progress in using company resources to achieve optimum profitability (Samsudin *et al.*, 2022). For instance, the company uses performance metrics to measure a firm's performance. These metrics include return on assets (ROA), return on equity (ROE), Non-performing loans (NPL) and net interest Margin (NIM). However, this research shall focus on return on assets.

According to Ali *et al.* (2020), in their study on Financial Performance defines it as a general measure of how well a bank generates its capital revenue. In addition, he further states that financial performance metrics are used to determine the financial performance of the banks. The research chose two primary metrics: return on equity and return on assets. The ROA is the net income divided by total assets. It tests the capacity of bank management to produce revenue by using the business assets at their disposal. It also establishes how effectively the bank's resources are used to produce earnings (Ali *et al.*, 2020). The return on assets is screening the firms' management efficiency in producing net income from all the resources of the organizations or banks (Ali *et al.*, 2020; Khrawish, 2011). Moreover, the return on equity (ROE) signifies how efficiently the bank management uses the shareholders' funds. Therefore, it can be reduced from those mentioned earlier that the more influential the management of ROE is in using shareholder capital.

1.2.3 Overview of Commercial banks and Financial Risks

In South Sudan there are a total of 33 banks with the majority being banks originating from countries, like Kenya, Ethiopia, Uganda and Qatar. Local banks in the region have ties to individuals connected to the South Sudanese government. A report from an anticorruption civil society group raises concerns about political influence on these banks. These alleged questionable connections could lead to the banking sector facing isolation from the global financial network. This situation may result in South Sudan's banks having to provide financing at costs due to international de-risking measures.

Access to banking services remains limited in South Sudan with nine percent of individuals aged 15 and, above holding bank accounts as of 2017. This marks progress compared to one percent having bank accounts in 2012. A survey conducted by the bank in August 2019 revealed that a significant portion of deposits came from non-residents. The exclusivity of services is evident as only citizens participate in the banking sector. Despite their customer base commercial banks have strengthened their positions over time. Deposits have surged by 64 times since South Sudan gained independence while loans increased 35 times between 2011 and 2018. The rate of performing loans stood at 5.1 percent in 2018 marking a record low since independence. Despite an increase, in bank deposits and lending activities there has been growth in construction and real estate credit. These specific loan categories made up 18 percent of banks loan portfolios. Saw a slight uptick to 19 percent by the end of 2018 (Africa Housing Finance, 2019).

South Sudan faces challenges with foreign exchange reserves as its currency; the Sudanese pound continues to devalue significantly against the US dollar dropping an additional 21 percent in official value in 2018. Moreover there exists a market for the Sudanese pound where the exchange rate has depreciated by as much as 65 percent compared to the official rate, with the US dollar. These ongoing political and economic challenges have hindered South Sudan's progress, particularly impacting its housing sectors (Christopher *et al.*, 2019).

1.2.4 History of Commercial banks in Southern Sudan

The history of banking in South Sudan is a short one. Throughout Khartoum's rule till the end of the civil war 2005, very few commercial banks were concentrated in the Southern towns of Juba, Wau and Malakal. Southern Sudanese were deliberately excluded from the economic system. As a result, 90% of the population in Southern Sudan was not exposed to banking services. Access to finance was limited to Northern traders operating in Southern Sudan (Geoffrey *et al.*, 2018).

SSIA (2013), in February 2008, Islamic banks left the South since the Bank of Southern Sudan (BoSS) opened as a branch of the Bank of Sudan (BoS) introduced conventional banking. However, after the CPA, the Bank of Southern Sudan took a bold step by licensing local and expatriate banks to invest in the country. By November 2013, there were 28 banks operating with over 70 pending applications along 10 Micro Finance Institutions, 86 Forex Bureaus and few Insurance Companies. Since its inception in July 2011, BoSS has officially become the central bank in collaboration with donor partners and international financial institutions such as IMF,

World Bank, IFC, etc. The BoSS has been regulating and monitoring the banking sector in the country since 2011. In addition, the BoSS controls and supervises 33 operating commercial banks, of which there are 13 domestic banks, 11 joint ventures, and eight foreign banks, plus one investment bank. Also, (BoSS) regulates 10 microfinance institutions and 86 forex bureaus.

1.3 Statement of the problem

The Bank of South Sudan (2022) makes it clear that the banking industry has been experiencing a downturn. It is evident by a joint report of the BoSS and IMF in 2023 noted 14 local banks at risk of insolvency, while Mwai (2022) reported that 11 domestic banks faced insolvency risks in 2019. Additionally, according to AFDB (2022–24), the percentage of total loans that are non-performing loans (NPLs) climbed from 12.8% in 2013 to 16.8% in 2020, with hotels and restaurants accounting for 44% of the increase, real estate for 15%, and agriculture credit for 0.4%. Moreover, SSP lost 90% of its worth from 2015- 2023 as a result of devaluation and depreciation (BoSS, 2024). Mwangi (2022) lists losses of USD 28.5 million at KCB, Equity, and Co-operative Bank from 2013-2018.

As a result, the Bank of South Sudan (2022) revoked the licenses of two domestic banks that collapsed and reviewed the two others ceased operations. The banking industry faces risks such as liquidity, credit, exchange rate fluctuations and interest rate risks, which pose challenges to sustainability and financial stability. This warrants the researcher aims to investigate how financial risks impact the performance of banks in South Sudan. Its objectives include assessing the effects of liquidity risk, credit risk, exchange rate risk, and interest rate risk, which influence the financial performance of commercial banks in South Sudan.

Previous research on how financial risks impact the financial performance of banks has been conducted outside South Sudan by scholars such as Juma (2018) Omondi (2019), Njiru (2019), Ali & Oudat (2020), Ugah (2020), Onsongo (2020), Jalal *et al.* (2020) Afriyie *et al.* (2022) Ahmed (2020) and Antony & Shence (2018). These studies have yielded conflicting results on the correlation between financial risks and financial performance. Although there are studies that touch upon South Sudan, like those by Arkangelo *et al.* (2021), Chol *et al.* (2019), Tong & Yelyak (2021), and Manyok (2016), they do not specifically examine the effect of financial risks on the financial performance of commercial banks in South Sudan. Additionally, the findings vary widely and thus need investigation to address existing empirical gaps.

On study methodology, many research studies have used Descriptive Statistics, inferential Statistics within regression models and Diagnostic Tests considering Homoscedasticity, Heteroskedasticity, Hausman test and Multicollinearity to eliminate unbiased in the survey (Juma, 2018; Omonid, 2019; Njiru, 2019; Ali & Oudat, 2020; Ugah, 2020; Onsongo, 2020; Antony & Science, 2018 and Afriyie *et al.* 2022)). However, these studies overlooked and ignored longitudinal research. In addition, these studies were done in different countries, which have economic, cultural traits that differ from South Sudan's. To address this methodological gap, this study will adopt longitudinal research that observes the trend over the period of time.

Many research studies have delved into the impact of risks on the performance of commercial banks. For example, Juma (2018), Omonid (2019), Njiru (2019), Ali & Oudat (2020), Ugah (2020), Onsongo (2020), and Antony & Shence (2018) have contributed to this field. Omondi (2019), Juma (2018) and Njiru 2019 specifically focused on liquidity risk, credit risk, exchange rate risk and interest rate risk effects on banks' financial performance, though these studies are done in Kenya, which is irrelevant to South Sudan contexts. Arkangelo *et al.* (2020) examined how variables like exchange rate, interest rate and inflation rate influence the performance of South Sudan's commercial banks but did not cover the effect of financial risks on South Sudanese commercial banks' financial performance.

To bridge this gap, this current study explored the effects of financial risk on the financial performance of commercial banks in South Sudan. Therefore, the study sought to examine the effects of liquidity risk, credit risk, interest rate risk and exchange rate risk that impact the performance of banks in South Sudan.

1.4 Objectives of the Study

The main objective of this study is to examine the effect of financial risks on the financial performance of commercial banks in South Sudan.

1.4.1 General Objective

The study's overall objective is to determine the effect of financial risks on the financial performance of commercial banks in South Sudan.

1.4.2 Specific objectives

- i. To determine the effect of liquidity risk on the financial performance of commercial banks in South Sudan
- ii. To assess the effect of credit risk on the financial performance of commercial banks in South Sudan
- iii. To establish the effect of exchange rate risk on the financial performance of commercial banks in South Sudan
- iv. To evaluate the effect of interest rate risk on the financial performance of commercial banks in South Sudan

1.5 Research hypotheses

The research hypotheses of the study were:

H₀₁: Liquidity risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

H₀₂: Credit risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

H₀₃: Exchange rate risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

H₀₄: Interest rate risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

1.6 Significance of the study

The research is expected to have an impact, on the management of institutions in South Sudan including commercial banks, investment banks and non- financial entities. It will provide insights for bank managers on how financial risks influence the financial performance of banks. This knowledge will assist decision makers in assessing the effectiveness of their initiatives related to risks and overseeing bodies such as the Bank of South Sudan and its partners in monitoring financial performance.

Furthermore this study will benefit the government and relevant institutions by enhancing regulators understanding of risks and ways to strengthen banking sector systems through policies

that govern capital risk management overseen by bodies. It will also enable the bank to formulate strategies and alert institutions about potential business risks. The research will be valuable for researchers in academia interested in this field. Additionally it will help stakeholders, like shareholders comprehend wealth maximization by deploying informed financial risk managers who can provide guidance on investment returns. The shareholders have money to invest. They might require guidance on investing, in high risk ventures and receiving advice regarding the financial risks that can impact the performance of banks.

1.7 The Scope of Study

The study focused on the effect of financial risks and financial performance of commercial banks in South Sudan. Precisely, the study assessed the effects of liquidity risk, credit risk, exchange rate risk and interest rate risk on the financial performance of commercial banks in South Sudan. The study concentrated on the 33 Commercial banks registered, licensed and operating in South Sudan since independence from 2011 to 2022. However, due to lack of data because of the establishment of Central Bank in 2011 to 2013, the study was limited from 2014 to 2022. Furthermore, in the jointly report of BoSS and IMF in 2022 about 14 banks faced insolvency and 2 collapsed and other 2 banks are monitored plus 1 investment bank. Therefore, the data obtained from 28 out of initial target population which was 33 commercial banks in South Sudan. Hence, the study covered 9 years period.

1.8 Delimitation of the Study

Thirty-three banks are operating in the country, which is a large number; therefore, the study is delimited to the M.D.s / CEOs and senior managers where data collection will take place. Also, it is delimited to 28 out of 32 commercial banks plus 1 investment bank; according to central bank reports, 14 banks facing insolvency while 2 collapsed and other 2 being monitored. Furthermore, the study delimited from 2011-22 to 2014-2022. The study is also limited to the effect of financial risks on the financial performance of commercial banks in South Sudan.

1.9 Limitations of the Study

Sometimes, respondents fear the unknown, while others are hectic. The researcher encounters time limits to submit the work on time. The researcher needs more research materials on the

research topic and literature support. Study experiencing a lack of data publishing from commercial bank, the National Bureau of Standard, Bureau of Statistics, CPI, and the BoSS not is updating their websites on time. In addition, the study period was reduced from 2011-22 to 2014-2022 due to data because of the establishment of Bank of South Sudan.

1.10 Assumptions of the Study

In carrying out the study, the researcher assumes that commercial banks are aware of financial risks, screen the customers, and be honest, informing their customers of the risk that comes with the loans they are about to take. The researcher assumes that commercial bank managers inform the shareholders about financial risks and comply with the requirements and policies of the Bank of South Sudan (BoSS). It is also assumed that the respondents in the study will be honest in their responses.

1.11 Theoretical Framework

This chapter explains the related theories that support the effect of financial risks on the financial performance of commercial banks in South Sudan. For this paper, we shall choose the liquidity Preference theory, the International Fisher Effect theory, the Interest rate Parity and the Agency theory. These theories shall be used to provide more understanding of the relationship to the study variables.

1.11.1 Liquidity Preference Theory

Liquidity preference theory, proposed by John Maynard Keynes (1936), suggests that individuals and businesses prefer holding liquid assets, such as cash, rather than illiquid assets. This theory can be linked to liquidity risks in banking as it relates to the potential for a bank to be unable to meet its short-term obligations due to a lack of liquid assets (Nikolaou, 2009). In banking, liquidity risk refers to the potential for a bank to be unable to meet its short-term obligations due to a mismatch between its assets and liabilities. If a bank's assets are not sufficiently liquid to cover its drawbacks, it may face liquidity problems and be forced to sell investments at a loss or seek emergency funding (Amihud *et al.*, 2005). The liquidity preference theory suggests that individuals and businesses prefer to hold liquid assets, and this liquidity preference can also

apply to banks. Banks may choose to have liquid assets to meet potential liquidity demands from depositors or to fulfill regulatory requirements.

The link between liquidity preference theory and liquidity risks in banking highlights the importance of managing liquidity effectively to ensure that banks can meet their short-term obligations. This may involve holding sufficient liquid assets, implementing liquidity risk management practices, and monitoring liquidity metrics. This theory argument is supported by Bitrus (2011), who states that an individual or firm will hold money for various reasons at a given time. The theory is based on firms having cash to meet their transaction motives, such as precaution, speculative and compensation motives.

1.11.2 Interest Rate Parity Theory (IPT)

Keynes (1923) proposed the theory which assumes that the variation in the interest rate between two trading partner states accounts for the instability in the nominal interest rate. In addition, the difference between foreign countries' interest rates and domestic interest rates is the interest rate parity.

Interest Rate Parity (IRP) theory is a concept in finance that connects interest rates, exchange rates and associated risks. According to Keynes (1923), the difference in interest rates between two countries should be equivalent to their exchange rates. This theory helps us understand how interest rate differences impact exchange rate movements. IRP theory plays a role in managing banking interest rates and currency exchange risks. Banks must consider the influence of interest rate differentials on their assets and liabilities as the effects of exchange rate fluctuations on their international transactions. By grasping the principles of IRP theory, banks can enhance their ability to handle interest rate and currency exchange risks.

Bhole & Dash (2002) imply that the difference in interest rates between two currencies is revealed in either a discount or premium for the forward exchange rate on the foreign currency, whereby there is no sale or purchase of currency in the financial market. Relevant to this study, IPT shows the presence of parity in interest rates, which is vital in banking operations. As stated by Borio *et al.* (2015), the main aim of commercial banks, as they play the role of intermediaries, is to make profits. This is determined by how commercial banks charge interest on their loans and other financial services rendered (Buigut, 2010); thus, high profits indicate better financial performance resulting from higher interest rates.

1.11.3 International Fischer's Effect Theory

The International Fisher Theory effect was proposed by Irving Fisher in 1930. Fisher (1930) explains a relationship between foreign exchange rate changes and the changes in interest rates across different nations. The IFE theory examines that the difference in interest rates between the two countries should equal their expected inflation rates. On the other hand, the International Fisher Effect theory proposes that the disparity in interest rates between two countries corresponds to the anticipated change in exchange rates for their currencies. Kozikowski (2000) states that this theory has implications for managing exchange rate risk in the banking sector as it suggests that fluctuations in interest rates can impact exchange rates and ultimately influence the value of assets and liabilities denominated in currencies.

Within banking, exchange rate risk emerges from the consequences of currency fluctuations on a bank's assets and liabilities denominated in currencies. According to the International Fisher Effect theory (1930), alterations in interest rates can influence exchange rates, thereby affecting the value of these assets and liabilities. Banks must consider exchange rate risk while handling their operations since exchange rate variations can impact their profitability and financial stability (Gonzales, 2000); hence, banks may employ hedging strategies such as contracts or options to mitigate this risk.

Giddy (1997) states that the IFE is closely linked to the Fisher effect and observes that interest rates in appreciating currencies tend to be low and interest rates in depreciating currencies tend to be high where the IFE holds. This helps us understand offset expected currency gains and losses. Madura (2010) stated that foreign currencies with relatively high-interest rates are likely to depreciate since the high nominal rates of interest display an expected inflation rate.

1.11.4 Credit Risk Theory

Credit risk refers to the risk of a financial loss due to the decline in the counterparty's creditworthiness in a financial transaction (Liu *et al.*, 2014). Credit risk is also known as default risk. Default risk is when a bank or lender fails to fulfil the contractual obligations. The risk results from loss of principal and interest, which culminates in the insolvency of a bank unable to return funds to a depositor (Taiwo *et al.*, 2017)

The Credit risk theory was introduced by Robert Merton (1974) in his theory of default model, which is the basic theory of credit risk. Robert's theory is for assessing a firm's or investor's

credit risk by characterizing the company's equity as a call option on its assets. Default risk theory plays a role in comprehending credit risk within the banking industry. It delves into the probability of a borrower being unable to fulfil their debt obligations, ultimately resulting in default. This theory holds significance for banks since they face credit risk while extending loans to individuals and businesses (Liu *et al.*, 2014).

Taiwo *et al.* (2017) state that the connection between default risk theory and credit risk in the banking sector is that banks need to evaluate the default risk associated with their borrowers to make lending decisions. By understanding factors contributing to default risk, such as the borrower's credit history, financial stability, and prevailing market conditions, banks can accurately gauge the likelihood of a borrower failing to repay their loan.

Moreover, default risk theory aids banks in managing and mitigating credit risk by implementing strategies for risk management. These strategies may include setting interest rates, establishing credit limits, and requiring collateral for specific loans. Leveraging the Merton model, Clifford V. Rossi derived three essential approaches to measuring credit risk. To mitigate the lender's risk, the lender may perform a credit due diligence check on the prospective borrower, and this requires the borrower to take appropriate action by taking insurance coverage such as mortgage insurance or seeking security or guarantees from third parties. Overall, the higher the risk, the higher the interest rate the debtors will be asked to pay on the debt (Owojori *et al.*, 2011).

Jorion (2014) argued that credit analysts must appraise financial institutions while checking the firm's liquidity throughout analysis and debt expiry. Another reason for the debt default in banks and other financial institutions is attributed to credit risk as risks experienced by financial firms.

1.11.5 Agency Theory

This theory was coined by Jensen Meckling (1976), which was first used in economic theory and subsequently commonly used in corporate governance. Dalton Canella (2003) argued that agency theory is affected by two factors. The first concept explains the relationship between the principal and the agent. The principal and agent are called shareholders or owners and managers or employees. Secondly, it is based on the opinion that human beings are self-centred. The agency theory explains that conflict of interest occurs when the principal delegates or assigns the agents to carry out some tasks on his behalf but instead acts contrary to the principal's interest.

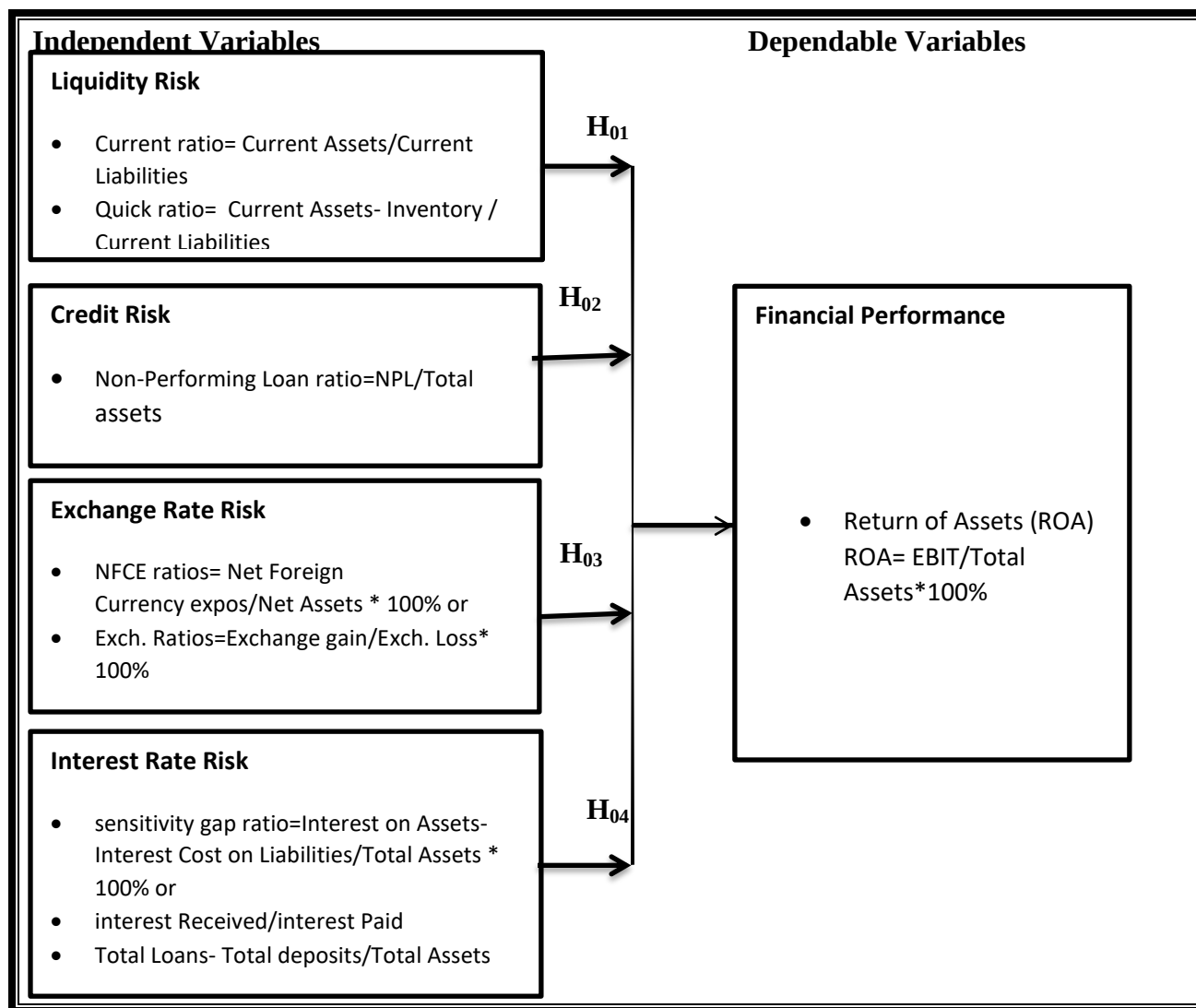
This difference between the principals and the agents results in a misalignment of interests, which leads to agency costs, which are the costs associated with monitoring and controlling the agent's behaviour to ensure it aligns with the principal's goals.

From the bank's perspective, Meckling (1976) argued that an agency theory relationship explores how providers of corporate funds and those appointed to manage the bank's affairs relate. Aka et al. (2011) argue that agency theory focuses on the relationship between a company's shareholders (principals) and its managers (agents). According to this theory, managers may prioritize their interests over acting in the shareholders' best interest. Consequently, this creates an agency problem where the agents' interests conflict with the principals.

Corporate governance refers to the rules, practices and processes governing how a company is directed and controlled. Its main objective is to ensure that the company is managed in a manner that serves the interests of its shareholders. The close connection between agency theory and corporate governance lies in their shared emphasis on aligning managers' interests with those of shareholders (Dalton & Canella, 2003). By implementing corporate governance mechanisms such as board oversight, executive compensation structures and shareholder activism, it becomes possible to mitigate agency problems and encourage managers to act in ways that benefit the company's owners. In summary, agency theory provides a framework for understanding conflicts between managers and shareholders due to interests. In contrast, corporate governance offers tools and mechanisms for addressing these conflicts while ensuring that decisions are made in the owner's best interests (Percy, 2013).

1.13 Conceptual Framework

The study demonstrates the diagram below about the independent and dependent variables of the study. The independent variables include (Liquidity, Credit, Exchange and Interest rate risks) while dependent variables are metrics of financial performance such as Return of Equity (ROE) and Return of Assets (ROA)



Source: Researcher (2024)

Figure: 1.1 Conceptual Frameworks

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter deals with essential issues and practical problems that can be carried out and examines past, current, and future studies that will need to improve the knowledge. It includes various studies on the independent and dependent variables. It establishes the relationship between independent and dependent variables. This chapter also contains a critical review and the gap in the study.

2.2 Empirical Literature Review

2.2.1 Liquidity risk and financial performance

Jalal *et al.* (2020) investigated the effects of financial risks on the financial performance of Russian commercial banks from 2008 to 2017. The research concentrated on the risks impacting commercial banks, involving 85 banks that accounted for 87% of the country's banking sector assets. The study analyzed six variables, including credit risk, liquidity risk, exchange rate risk, interest rate risk, and operational risk. Through multiple regression analysis, the findings indicated that both credit and liquidity risks positively influenced bank performance, while exchange rate risk did not affect metrics such as ROA and ROE. Furthermore, the study found that interest rate risk had an impact. However, it is important to note that this research was conducted in Russia, Europe, which experiences social, economic, and political dynamics that differ from those in South Sudan.

Ali and Oudat (2020) assessed the effects of financial risks on the performance of listed banks in Bahrain from 2014 to 2018. The study employed two regression models involving 11 banks and found no significant impact of exchange rate risk on return on assets. Nonetheless, liquidity, exchange rate, operational, and capital risks had minimal effects on bank performance. The study's focus on Asia and the Middle East and the absence of credit and interest rate risks may have influenced its outcomes. Thus, the research may require additional relevant information regarding the context of South Sudan.

Ugah (2020) investigated financial risk management and bank profitability in Nigeria, finding that credit, liquidity, interest rate, and inflation risks positively impact the return on assets of Access Bank of Nigeria PLC. The study utilized the Statistical Package for the Social Sciences software version 20 to test its hypotheses using simple linear regression. The research advises banks to adopt proactive measures to mitigate financial risks and enhance their profitability. However, this study focused on a single bank in Nigeria and may not fully reflect the characteristics of the broader banking sector due to varying political contexts in South Sudan.

In a study of Ghana's banking industry, Afriyie *et al.* (2022) identified market, credit, and liquidity risks as having significant effects on bank performance on the Ghana Stock Exchange. However, the study primarily focused on these risks, without including interest and exchange rate risks, which should not be overlooked in South Sudan. It is important to point out that the research was done in Ghana, a country with a more established system than South Sudan.

Omondi (2019) examined how financial risks affect Kenyan commercial banks and found that interest rate risk has a significant impact on their financial performance. The study utilized both descriptive and inferential statistics through a panel regression model, with STATA (version 14) employed for the analysis. The research, which included 42 banks from 2013 to 2017, revealed that both credit and exchange rate risks negatively influence the financial performance of banks, whereas interest rate risk has a positive effect. However, liquidity risk was found to have no significant impact on the return on equity (ROE). The study recommends that banks should monitor non-performing loans (NPLs) to enhance their financial performance. Nonetheless, this research shares variables with another study but is conducted within a different political and economic environment, making it less applicable to South Sudan.

Njiru (2020) explored the impact of financial risks on the financial performance of commercial banks in Kenya. This study applied descriptive, cross-sectional, and regression models to analyze the variables, with capital adequacy and bank size serving as control variables. It was found that credit and interest rate risks adversely affected performance, while capital adequacy had a positive influence. In contrast, liquidity, operational risk, and bank size were found to have insignificant effects. Conducted in Kenya, the findings of this study may not be readily applicable to South Sudan.

Ahmed (2020) investigated how liquidity risk affects the performance of banks in Sudan. The study indicated that liquidity risk negatively impacts financial performance. It examined the effects of liquidity risk, credit risk, and financial leverage on bank performance in Sudan from 2008 to 2018, revealing significant effects on Sudanese banks. Additionally, liquidity risk and credit risk had varying degrees of negative impact on these banks' performance. It is crucial to consider that this study was conducted in Sudan, where an Islamic banking system predominates, which may not directly translate to the context of South Sudan.

2.2.2 Credit risk and financial performance

Jalal *et al.* (2020) studied the effects of financial risks on the financial performance of Russian commercial banks from 2008 to 2017. The research focused on 85 banks representing 87% of the assets in the country's banking sector. Six key variables were examined: credit risk, liquidity risk, exchange rate risk, interest rate risk, and operational risk. The analysis was carried out using multiple regression techniques. The results indicated that both credit and liquidity risks had a positive effect on bank performance, while exchange rate risk did not significantly affect measures such as ROA and ROE. Furthermore, the study found that interest rate risk did have an impact. However, this study was conducted in Russia, which has different social, economic, and political dynamics compared to South Sudan.

Ugah (2020) conducted research on financial risk management and bank profitability in Nigeria, revealing that credit, liquidity, interest rate, and inflation risks positively influence the return on assets of Access Bank of Nigeria PLC. The study employed statistical software version 20 to test hypotheses through simple linear regression. The findings suggest that banks should take proactive steps to mitigate financial risks and enhance their profits. However, it is crucial to realize that this study focused primarily on one bank in Nigeria, which may not fully represent the broader banking sector due to differing political contexts.

Afriyie *et al.* (2022) examined Ghana's banking sector and found that market, credit, and liquidity risks significantly impact bank performance on the Ghana Stock Exchange. However, the study primarily focused on these specific risks and neglected interest and exchange rate risks, which are also important in the context of South Sudan. It is significant to note that the research was carried out in Ghana, a nation with a more established banking system compared to South Sudan.

Omondi (2019) examined the impact of financial risks on Kenyan commercial banks and discovered that interest rate risk considerably affects their financial performance. The analysis was performed using descriptive and inferential statistics within a panel regression model, utilizing STATA (vers. 14). The research studied 42 banks from 2013-2017, revealing that both credit and exchange rate risks negatively impacted financial performance, while interest rate risk positively influenced it. Nonetheless, liquidity risk did not have a significant effect on return on equity (ROE). The study suggests that banks should closely monitor non-performing loans (NPLs) to enhance their financial performance. However, this research shares similar variables with the aforementioned studies but operates within a different political and economic context, making the findings less applicable to South Sudan.

Njiru (2020) analyzed the effects of financial risks on the financial performance of commercial banks in Kenya. The study applied descriptive, cross-sectional, and regression models to evaluate the variables. Capital adequacy and bank size were considered as control variables. The study concluded that credit and interest rate risks negatively influenced financial performance, while capital adequacy had a positive impact. However, liquidity, operational risks, and bank size were found to have no significant effects. This research was conducted in Kenya, and therefore, its findings may not be directly applicable to South Sudan's context.

2.2.3 Exchange rate risk and financial performance

Jalal *et al.* (2020) studied the impact of financial risks on the financial performance of 85 Russian commercial banks from 2008-2017. They analyzed six variables and used indicators like NIM, ROA, and ROE. The study found that risks contributed to net interest margins, return on equity, and return on assets. Exchange rate risk did not affect indicators. The research findings indicate that liquidity risk, credit risk and operational risk have impacted negatively and limited bank performance. In contrast, the study was conducted in Russia, Europe which has a developed financial, social and political differences compare to South Sudan.

Ali and Oudat (2020) examined the impact of financial risks on Bahraini listed banks' performance from 2014-2018. The study used two regression models which included 11 banks, found no significant impact of exchange rate risk on return on assets. However, liquidity, exchange rate, operational, and capital risks had negligible effects on bank performance. The study's focus on Asia and the Middle East and the absence of credit and interest rate risks may

have influenced the findings. Therefore, the research may need more relevant information on South Sudan's contexts.

Omondi (2019) study on Kenyan commercial banks found that interest rate risk significantly impacts their financial performance. The research was analyzed using descriptive and inferential statistics within the panel regression model, using STATA (vs 14) for analysis. The research, analyzing 42 banks from 2013-2017, found that credit and exchange rate risk negatively affect banks' financial performance, while interest rate risk positively impacts banks' performance. However, liquidity risk showed no significant impact on return on equity (ROE). The study suggests banks should monitor NPLs to improve their financial performance. The study was conducted in Kenya, a country with a distinct political and economic environment, which is not relevant to the South Sudan context

Arkangelo *et al.* (2021) studied the impact of macroeconomic variables on the financial performance of 30 South Sudanese commercial banks. The study used a pooled OLS regression model and data from 2014 to 2020. Results showed no significant influence of exchange rate and inflation rate on financial performance. However, interest rate risk positively impacted banks' performance. The study missed crucial variables like credit risk and liquidity, which are crucial for banks' financial performance. The study selected 28 out of 30 commercial banks, disregarding IMF (2022) report on 14 undercapitalized banks due to financial risks, instead focusing on financial risk impacting performance. However, the study focused on the impacts of macroeconomic variables, which missed out on other relevant variables like credit and liquidity risks, which have an essential effect on metrics of (ROE & ROA) on financial performance than the current study.

2.2.4 Interest rate risk and financial performance

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study concluded that credit and interest rate risks negatively influenced financial performance, while capital adequacy had a positive impact. However, liquidity, operational risks, and bank size were found to have no significant effects. This research was conducted in Kenya, and therefore, its findings may not be directly applicable to South Sudan's context.

2.2.5 General studies on financial risks and financial performance

Fali *et al.* (2020) study found that credit risk negatively impacts the return on asset (ROA) of Nigerian listed insurance companies from 2009 to 2018. Liquidity risk had a negative impact on ROA, while solvency risk had a positive effect. The study suggests that Nigerian insurance providers should better control their receivable numbers and provide appropriate payment plans for debtors. The study by Mararomo *et al.* (2022) found that credit risk negatively impacts financial performance of Nigerian listed insurance companies, while liquidity risk and solvency risk have insignificant or positive effects. The report recommends better receivable control. These studies did not address financial risks and financial performance of commercial banks, also missed out vital variables like exchange rate risk and interest rate risk. In addition, the studies were done outside South Sudan which has different contexts than that of South Sudan.

A study by Shetty and Yadav (2019) examined the relationship between profitability and financial risks of 43 Indian commercial banks from 2008 to 2018. The Indian banking sector faces various risks, including credit, operational, market risk, and liquidity risks. The findings showed a weakly significant relationship between ROE and IRR, and a significant effect of IRR on ROA. The study suggests that banks and supervisors should balance profitability and financial risk. This study was done in Asia which has developing and emerging economies like India compare to less developed nations like South Sudan that has social, economy and political differences.

Massoudie (2024) study on financial risk management in Nangarhar province of Afghanistan found that it positively impacts the performance of commercial banks. A one-unit increase in financial risk management and cash management leads to improved profitability. The study recommends that banks pay close attention to managing distinct risks for increased profitability. This stud ignoring other provinces in Afghanistan and has difference contexts than South Sudan.

Alshiqi and Sahiti (2021) study examines the impact of credit risk management on bank profitability in Western Balkans commercial banks Kosovo, Albania, Macedonia, and Serbia). The research, involving 45 banks from 2013 to 2019, found a strong correlation between credit risk and bank profitability, with non-performing loans positively affecting return on equity and return on assets. Capital Insufficiency showed no statistical significance. This research covered number of countries in Europe but the current study only target South Sudan's banks.

Abebe (2014) study on Ethiopian commercial banks' financial performance using panel data from 2002-2013, using a quantitative approach and fixed effect model. Internal factors included capital structure, income diversification, operating costs, and bank size, while external factors included tax rates, GDP growth, and inflation. Results showed bank-specific variables, except bank size, significantly affect performance, with tax rate having the most significant impact. This study ignored the vital variables like liquidity risk, interest rate risk, exchange rate risk and credit and the current study also using longitudinal research design that consider time series data.

2.3 Summary of Empirical Literature Review and Research Gap

The literature reviewed presented findings, on research gaps, which varied from contextual to conceptual and knowledge related. Numerous investigations on risks and performance have been carried out for banks in developed nations as well, as others besides South Sudan.

Table 1: Summary of Empirical Literature Review and Research Gaps

Author	Focus	Methodology	Key Findings	Research Gaps	Addressing the Research Gaps
Omondi (2019)	Effect of financial risk and financial performance of Commercial Banks in Kenya	A causal research design, Descriptive and Inferential Statistics Panel regression Model	Interest rate risk affects ROE and ROA positively exchange rate risk and credit risk affect both ROA and ROE negatively while Liquidity risk affects	This study was conducted in Kenya, which has different economic environment and political systems than South Sudan. It will use longitudinal	The current study will focus on financial risks in South Sudan and shall address the financial risks that affect commercial banks in South Sudan. Also the current study shall use longitudinal

			positive but insignificant	research which was ignored by this study	research to explain data over long period of time
Ali & Oudat (2020)	Effect of financial risk on performance in the listed Commercial and Investment Banks in Bahrain BSE	The Regression Analysis was applied	Liquidity risk and exchange rate affects positively the returns (ROA, ROE) but insignificant	The study ignored two variables (Interest rate risk and Credit risk which are vital and Bahrain has both economic and political differences than South Sudan	The study focused on all commercial banks only but this study shall include other two variables (interest rate risk and Credit risk) exclude stock exchange market
Arkangelo <i>et al.</i> (2021)	Impact of Macroeconomic Variables (Exchange rate, Interest rate & inflation) on the financial performance of South Sudan's Commercial Banks	Pooled OLS Regression Model with Panel-corrected Standard Errors (PCSE)	The exchange rate risk and inflation do not affect the returns (ROA & ROE) while the Interest rate has a positive effect on the returns	The study is limited to macroeconomic variables while this study focused on financial risks and banks' performance	The study focused on the impact of macroeconomic variables only. This study shall cover all financial risks on banks' performance not the impact of macroeconomic variables
Ugah, 2020).	Financial Risk Management and Bank Profitability in Nigeria	The Regression Model	Interest rate risk and liquidity risk affect the returns of assets positive on banks' performance	Nigeria has developed a different economic and political environment than South Sudan	This study focused on financial risks and bank performance, including exchange rate risk and credit risk
Afriyie <i>et al.</i> (2022)	Effect of financial risks and financial performance of banks in Ghana	Descriptive and Inferential Statistics of Regression Model	The Liquidity, Credit, and Interest rate risks affect the ROE and ROA negative but	Ghana has economic and political systems different than South Sudan	This study shall focused on financial risk and financial performance of Commercial banks in South Sudan

			significant	also ignored exchange rate risk	including exchange rate risk variable
Njiru (2020)	Effect of financial risk on the financial performance of Commercial Banks in Kenya	Descriptive cross-sectional, Correlation and Multiple Regression Model	Credit risk and Interest rate risk affect the returns negatively while Liquidity and Operational risk have minimal effect on returns	The study ignored the exchange rate risk which has a serious effect on currency devaluation	Njiru's study included operational risk but excluded the exchange rate risk which this study shall address
Onsongo (2020)	Financial Risk and Financial Performance of Commercial and Services Listed Companies in NSE, Kenya	Panel regression model, Hausman specification test.	Credit risk affects the ROE negatively while Operation Risk and liquidity risk affect the ROE positively but with minimal	South Sudan lacks a stock exchange market hence has economic differences and the study ignored interest rate risk and exchange rate risk	This study focuses on financial risk and financial performance of Commercial banks only but including Interest rate risk and Exchange rate risk
Antony & Shence (2018)	Impact of risk factors on the financial performance of Commercial Banks in Barbados	The research used the Multiple Regression Model	The risk factors include interest rate and liquidity risks affect banks' performance	The study ignored other vital variables (Exchange rate & credit risk) Barbados has economic and political conditions than South Sudan	The current study shall address financial risks not risk factors on the financial performance of commercial banks including Exchange rate risk and Credit risk
Jalal <i>et al.</i> (2020)	Impacts of financial risks on the financial performance of Russian Commercial banks	Multiple Regression Model	Credit risk, Operational risk and Liquidity risk affect (ROE and ROA positively while	Russia has developed an economy with more advanced political and economic	The study was based on six financial risks but this study shall limited to four variables including credit risk, interest

			leverage and Interest rates are negative and limited. The exchange rate does not affect returns.	systems than South Sudan	rate, exchange rate and liquidity risk and also uses Inferences, descriptive statistics & diagnostics tests to analyze variables
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Source: Researcher (2024)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The study outlines use the methodology of the study. The process of sampling to arrive at square data is defined in this chapter. Data collection and analysis methods, including research design, research site, target population, study sample, data collection and data analysis, are to be illustrated to ensure the efficiency and effectiveness of the research process.

3.2 Research Design

Research design refers to an overall plan and strategy used by the researcher to undertake a study and answer research questions or test hypotheses during the research process (Polit & Beck, 2018; Bridge, 2015). This study will adopt longitudinal research design to investigate a research question and hypotheses when the researcher repeatedly examines the same variables to detect any changes that might occur over a period of time. A longitudinal research design involves gathering data over a period of time. Longitudinal research helps to track changes, in variables over time and understand the relationships between them. By collecting data from the participants or groups times researchers can analyze trends and patterns in the variables of interest.

Longitudinal study is a correlational research in which researcher observes and collect data on a number of variables without trying to influence those variables (Thomas, 2023). Its benefits is outlining that longitudinal research repeatedly observes the same participants over a period of time. Another benefit is to allow researchers to follow their subject in real time. This means that better establishing the real sequence of events, allowing your insights into cause- and –effect relationships.

3.3 Research Site

The research site is the geographical location of the research. The study described the site and identifies its significance to the study. This study was carried out in Juba, South Sudan. The study used all existing commercial bank data provided to the Bank of South Sudan (BoSS) as

required by statutory and compliance requirements, which stated that all commercial banks must submit audited financial statements to the central bank for monitoring and detection of risks.

3.4 Target Population

Asiamah *et al.* (2019) defined a population as an entire set of all elements or groups of individuals, objects, and events from which a researcher is interested in studying or making some observations or conclusions. The target population comprised of 33 commercial banks in South Sudan from 2014 to 2022. Therefore, the data collected from 33 commercial banks, and their published audited financial statements constituted the unit of analysis and unit of observation, respectively, as per the appendix attached

Table 2: List of Target Population

1. African National Bank	2. Afriland First Bank
3. Agricultural Bank of South Sudan	4. Buffalo Commercial Bank
5. Charter One Bank	6. Commercial Bank of Ethiopia
7. Cooperative Bank of South Sudan	8. Eco bank of South Sudan
9. Eden Commercial Bank	10. Equity Bank SS Ltd
11. International Commercial Bank	12. Ivory Bank
13. KCB Bank SS Ltd	14. Kush Bank PLC
15. Liberty Commercial Bank	16. National Bank of Egypt
17. Nile Commercial Bank	18. Mountain Trade and Development Bank
19. National Credit Bank	20. Opportunity Bank SS Ltd
21. Southern Rock Bank	22. People's Bank PLC
23. Phoenix Commercial Bank	24. Qatar National Bank
25. Regent African Bank	26. . Royal Express Bank

27. Stanbic Bank SS Ltd	28. Alpha Commercial Bank
29. South Sudan Commercial Bank	30. Ebony National Bank
31. St. Theresa Rural Development Bank	32. Horizon Bank
33. National Investment & Development Bank Plc (NID Bank)	

Source: www.boss.gov.ss (2024)

3.5 Study Sample

A sample refers to a group of participants taken from a target population. The Study Sample includes the sampling procedure and the sample size. This study looks at variables to explore its objectives. The critical variable studied is the performance of banks in South Sudan. It is measured by the return on assets, calculated as earnings before interest and tax divided by assets and the return on equity, calculated as earnings before interest and tax or net profit divided by shareholders equities. The independent variables in this study are risks, which include credit risk measured by performing loans, liquidity risk measured by the current ratio, interest rate risk measured by interest rate margin and foreign exchange risk measured by the exchange ratio.

3.5.1 Sample Size

It is a crucial aspect of research design as it determines the precision and accuracy of the results. A larger sample size generally provides more reliable and representative results, while a smaller sample size may lead to less accurate or biased findings. It is a crucial aspect of research design as it determines the precision and accuracy of the results. A larger sample size generally provides more reliable and representative results, while a smaller sample size may lead to less accurate or biased findings. Therefore, this study shall adopt a census approach suitable for small sizes and management, hence giving accurate results.

3.5.2 The Sampling Procedure

Taherdoost (2017) indicates that the sampling technique occurs when research includes cases or individuals because they believe they are worth consideration. The study focuses on 32 licensed commercial banks operating from 2011 to 2022. However, based on the IMF and BoSS (2022) report, 14 domestic banks face insolvency, and the study will use 28 out of 33 data. Therefore, this study shall adopt a census approach because it gives an equal chance to capture the data of all commercial banks in South Sudan. Mugenda and Mugenda (2019) argue that when the population is small or when it is practical to consider all elements of the study, the census sampling method is used.

3.6 Data Collection

Shirima (2020) argue that data collection can either be primary and secondary data, but this study will be based on secondary data such as websites of central banks, commercial banks, newspapers, archives. Secondary data is that data has already been collected by other researchers for example government census, or previous studies (Althouse, 2016). The reason for choosing secondary data is less costly, convenient, easier and faster to access and not biased. It's also suitable to collect data that spans longer timescales and broader geographical locations

3.6.1 Data Collection Instruments

This is to ensure the data collection instruments achieve what the researcher seeks to measure and appropriate amendments were made based on their suggestions. This enables the researcher to get adequate and accurate information from people who have the main data collection instrument (Middleton, 2023). Secondary data reliability and validity are determined by the method of data collection and the source. Assessing the authority or reputation of the source is crucial for determining these factors. Large, well-known organizations, such as Mintel and Key Note, are likely to have reliable and trustworthy survey data. Their continued existence depends on the credibility of their data, ensuring accurate and well-thought-out procedures. Government organizations, while also likely to be reliable, may not always be perceived as such (Althouse, 2020)

3.6.2 Data Collection Procedure

The study used secondary data from BoSS websites and IMF's websites to examine changes in financial risks and financial performance of commercial banks in South Sudan. The longitudinal research design, spanning from 2014 to 2022, allowed for the analysis of trends and patterns in variables like liquidity, credit, exchange rate, and interest rate risk. The study's choice of data collection method was based on ease of obtaining required data. In order to understand better we will analyze how financial risks impact the performance of banks by observing the fluctuations, in these factors over a period of time (Hunziker & Blankenagel 2021).

3.7 Regression Model

The time series regression model is used and estimated the effect of financial risks and financial performance of commercial banks in South Sudan using time series data. Therefore, the financial performance of commercial banks is expressed as a function of liquidity, credit, exchange rate and interest rate risks.

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

Where: Y_{it} – Financial Performance (ROA), β_0 -Constant

X_{1it} – Liquidity Risk (Ratio of total loans to total deposits).

X_{2it} – Credit Risk (Non-Performing Loans ratio).

X_{3it} – Interest Rate Risk

X_{4it} – Exchange Rate Risk

β_1 – β_4 –Coefficients of the regression which measure Y sensitivity due to changes in X.

ϵ_{it} - Error term, that accounts for the variables omitted in the function.

i – Individual firm.

t – Time period (year).

Source: Researcher (2024)

3.8 Data Analysis and Presentation

Data analysis identifies and interprets data to examine the research's pertinent information and confirm consistent trends (Bryman & Kramer, 2014). Data analysis is a process of a series of connected activities designed to obtain meaningful information from the data that will be collected. The study shall be conducted using a regression analysis to evaluate and estimate the risks impacting the performance of commercial banks in South Sudan. Series of data used to examine and measure the relationships among variables to represent in an equation for predicting the values of one variable based on the values of variables. This analysis involved data from 33 banks over 9 years. The research utilized both EVIEWS 12 version and Excel to analyze the data applying statistics through a multiple regression model.

Table 3 Operationalization and Measurement of Study Variables

Type of variables	Variable	Operationalization	Measurement
Independent Variables	Liquidity risk	It is the inability of a bank to meet its short-term financial obligations and needs when fall due	Liquidity ratio= Total loans/Total deposits* 100%
	Credit risk	The possibility that a borrower defaults and is unable to repay the loans taken	NPL ratios= NPLs/Total outstanding loans*100%
	Exchange rate risk	It is an exposure to unexpected fluctuations in the exchange rate between the two countries' currencies.	Interest rate Sensitivity gap ratio = $\frac{\text{Interest on Assets} - \text{Interest Cost on Liabilities}}{\text{Total Assets}} \times 100\%$ or =Exchange gain/Exchange loss

			*100%
	Interest rate risk	It is a risk of fluctuation of the interest rates which has a direct effect on the financial assets and liabilities of a bank	Net foreign currency Exposure ratio = Net Foreign Currency Exposure / Net Assets *100% or = Interest received / Interest paid *100%
Dependent Variable	Financial Performance of Commercial Banks (ROA)	Refers to an essential meter of a bank's strength, stability and ability to generate revenues or cash flows. In addition, it is how well a bank uses its resources to provide returns to its owners and those invested in its assets	ROA = EBIT / Total Assets *100%

Source: Researcher (2024)

The time series linear regression has several test assumptions, including;

3.8.1 Diagnostics Tests

Data analysis is done following diagnostic tests—the critical assumption tests in multiple regressions. Williams *et al.* (2013) argued that their serious violations bring about biased relationship estimates, high or low confident estimates of the precision of the coefficients, standard error and unreliable confidence intervals as well as significance tests (Mrindoko, 2021)

3.8.1.1 Normality

Descriptive statistics check for normality tests, such as Kurtosis and Skewness of data distribution (Gupta, 2019). In addition, a Jacque-Bera test is used to assess the normality of a data set. This test is based on the residual of the most miniature square regression model that is typically distributed (Wu *et al.*, 2020). The normality adopted to test the study variables' normal distribution. The study tests the null hypothesis that the disturbances are not normally distributed. If the p-value is less than 0.05, the null of normality at the 5% level is rejected (Shikumo *et al.*, 2020).

3.8.1.2 Multicollinearity

Assaf *et al.* (2019) suggest the term multicollinearity, which means that two variables are almost perfectly linear combinations of one another, causing the standard errors for the coefficients to become significantly overstated. The relationship among the independent variables is tested as strong using the Variance Inflation Factor among the independent variables. The rule of thumb on the variance inflation factor is that if it is greater than 10, it requires investigation, and if the VIF is less than 10, there is no severe multicollinearity, which affects the standard error calculation (O'Brien, 2007)

3.8.1.3 Heteroscedasticity

Vogelsang (2018) indicates that Heteroscedasticity occurs when the standard deviations of predicted variables are not constant, and its presence may cause incorrect computations of standard errors. However, if the residuals have a constant variance, they are said to be homoscedastic, and that is, the variance for the error term is constant and independent of the explanatory variables. Therefore, the study intends to use the white's test to test for Heteroscedasticity (Herwartz, 2019). The researcher shall use OLS, but because of the violation of assumptions of OLs, GLS is preferable. In the test, constant variance is the null hypothesis, which should be rejected if the p-value for the study variables is not greater than 0.05, implying that the residual is heteroskedastic and, therefore, the standard error cannot be reliably used (Herwartz,2019; Knaub, 2007).

3.8.1.4 Autocorrelation

It is a correlation on a time series comparing the past with future values over time. Durbin Watson test is used to detect autocorrelation on the residual on the regression analysis (Raknes *et al.*, 2021). An ideal value of 2 indicates non-autocorrelation, while a value closer to 0 indicates positive autocorrelation (Bae, S., 2019). Conversely, a value closer to 4 indicates negative autocorrelation (Dule *et al.*, 2021). Coefficient values ranging from 1.5 to 2.5 suggest no autocorrelation, while values above 2.5 to 4 indicate a positive autocorrelation. When the residuals are not independent of one another, autocorrelation happens. Serial correlation lowers the coefficient standard errors and increases the R-squared value (Bottomley *et al.*, 2023). The null hypothesis of the tests asserts that the residuals are not linearly autocorrelated (Weiß *et al.*, 2023).

3.8.1.5 Stationarity Test

The study used an augmented Dickey-Filler (ADF) test to test for stationarity (unit root) when using time series data. In addition, Wooldridge (2008) emphasizes that many economic models involving times series data, rely on assumptions of stationarity. This means that stationarity data are more predictable and allow for consistent estimation of parameters and mean-variance remains constant over time. Brooks (200) recommends Phillips-Perron test as alternative to ADF test which is more robust to some extent, while using time series data. Non-stationarity in regression analysis leads to the spurious correlation that increases the value of R² and T-scores of the non-stationary dependent variables, leading to incorrect model specification. In case of variables showing non-stationarity Kocenda (2015) recommends for cointegration test to analyze non-stationarity data, and eventually test for causality test if all the above tests aforesaid failed.

3.8.1.6 Granger Causality Test

Granger causality is a widely used tool for analyzing time series data in various fields. However, its validity and computational limitations have been debated. Recent advances address these shortcomings, including high-dimensional models, nonlinear observations, sub-sampled and mixed frequency time series, and non-Gaussian observations (Hojaie and Fox, 2021)

3.8.2 Descriptive Statistics

Rashid (2021) describes descriptive statistics as the essential characteristics of the dataset. To describe properties, it uses measures of central tendency, i.e. mean, median, mode, and the measures of dispersion, i.e., range, standard deviation, quartile deviation, and variance. The data is helpfully summarised by the researcher, with the help of numerical and graphical tools such as charts, tables, and graphs, to represent data accurately. Moreover, the text is presented to support the diagrams and explain what they present the findings.

3.8.3 Inferential Statistics

Inferential statistics is all about the study population that uses statistics from the panel regression model. These statistics used the study's null hypothesis; therefore, it can either be rejected or accepted at a 95% confidence level. Inferential statistics helped researchers to determine the probability that findings are due to change and to estimate the margin of error in the results (Gujarati, 2003)

3.9 Legal and Ethical Considerations

Ethical considerations entail adhering to norms and standards regarding research. The researcher should state study ethics and procedures for the responsible conduct of research. Particular ethical principles and professional standards should guide all studies. The study is also guided by ethical standards and guidelines applicable to Africa Nazarene University and other institutions, including seeking permits from relevant institutions where the data will be collected. For instance, the researcher must seek a permit from NACOSTI in Kenya.

The researcher must adopt confidentiality, plagiarism and informed consent. In addition, adoption and adherence to the mentioned ethical considerations will enable the researcher to obtain unbiased responses from the respondents. This study acknowledges other people's writing; for instance, the use of the other authors' work in the study without citing their identity plagiarism is avoided (Eriksson & Helgesson, 2015)

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the empirical results and analysis of data. The chapter is divided into the following sections; descriptive statistics and trend analysis section, diagnostic test, correlation analysis, the regression results section, test of hypotheses section and summary of hypotheses results section. The Hypothesis section presented the results in line with the objectives of the study as presented in chapter one.

4.2 Response Rate

The study relied on secondary data from published annual reports, as well as, Central Bank's and IMF historical data. Based on jointly report of BoSS and IMF (2022) indicate that 14 domestic banks are facing insolvency and it's complemented by South Sudan Housing Finance (2022) reporting 11 local banks are critical undercapitalization while within the 14 banks, two collapsed and other 12 are placed under statutory management plus one investment bank . Therefore, the data obtained from 28 out of 33 commercial banks in South Sudan. However, 28 is the total number of commercial banks where the data is obtained over the period of 9 years ranging 2014 to 2022, hence the total number of observations was 252. Subsequently, the 28 translated to a response rate of 84.8 percent which is very good.

The response rate of 84.8% is within the range of Babbie (2010) who stated that a response rate of 50% is adequate while Bailey (2007) set an adequate response rate at 75%. A study by Velnampy (2013) on Corporate Governance and Firm Performance reported and used a response rate of 84.8%

4.3 Descriptive statistics Analysis

The descriptive statistics compose of mean, standard deviation, minimum, maximum and the trends of the dependent and independent variables.

Table 4.1 showed the descriptive analysis outcomes

		Descriptive Summary				
<i>Variable</i>	<i>Obs</i>	<i>ROA</i>	<i>Liquidity Risk</i>	<i>Credit Risk</i>	<i>Exchange rate Risk</i>	<i>Interest rate Risk</i>
Mean	252	0.0217	1.2717	0.1816	202.6509	0.1416
Std Dev.	252	0.0149	0.4996	0.1519	214.6971	0.0238
Min	252	0.0010	1.0800	0.0200	2.9500	0.0972
Max	252	0.0530	2.6030	0.3570	668.6670	0.1721

Source: Researcher (2024)

From the descriptive analysis, the ROA indicated in the table above the total mean of ROA for the period 2014 to 2022 was 0.0217. This means that on average, the banks gained 2.17% returns on each of their assets during that period, with a standard deviation of 0.0149 indicating small variability in ROA over time hence banks struggle to acquire returns on assets affecting profit.

Liquidity risk had a mean of 1.2717 with 0.4996 as standard deviation, an indication that there was high variability in levels of liquidity risk. On other hand, liquidity risk was observed to be very low (Std Dev 0.4996). This means that banks had a high ability to meet their short-term financial obligations. Hence, the mean indicated that on average all the commercial banks were struggled to maintain a liquidity ratio above the statutory ratio by the BoSS of 20 percent.

Credit risk had a mean of 0.1816 and std deviation of 0.1519 which shown that there was great variation in the values of credit risk. On average, credit risk was 18.16% which indicated very high NPLs in banks' asset composition. Also, variability in credit risk was observed to be high in Std Dev of 15. 19%. Banks gives out loans to earn interest on them as they are being repaid back and in the event that the bank is facing difficulties in acquiring these assets back then the assets become NPLs. This means that borrowers' ability to service their loans was highly variable hence many borrowers defaulted on their loans hence affected financial performance of banks

Exchange rate risk was observed to be very high risk of up to 202.6509. This indicates SSP depreciated 20,265.1% on average against USD that mean banks had a great exposure to fluctuations in the exchange rates. In essence, exchange rate risk was also seen to be very variable (Std Dev 2.146971) meaning 21,469.71%. This indicates that the banks financial performance based on exchange rate was very unpredictable and this affects banks' profit margins.

Lastly, interest rate risk had a mean of 0.1416 and standard deviation of 0.0238 indicating a 14.16% on average showed very high variation in the values of interest rates. The interest rate risk was moderately low (Std Dev 2.38%). This means that the banks' performance based on interest rates was relatively stable.

4.4 Trend Analysis

The trend analysis section elaborated the various research variables as the discussion on each variable as showed below:

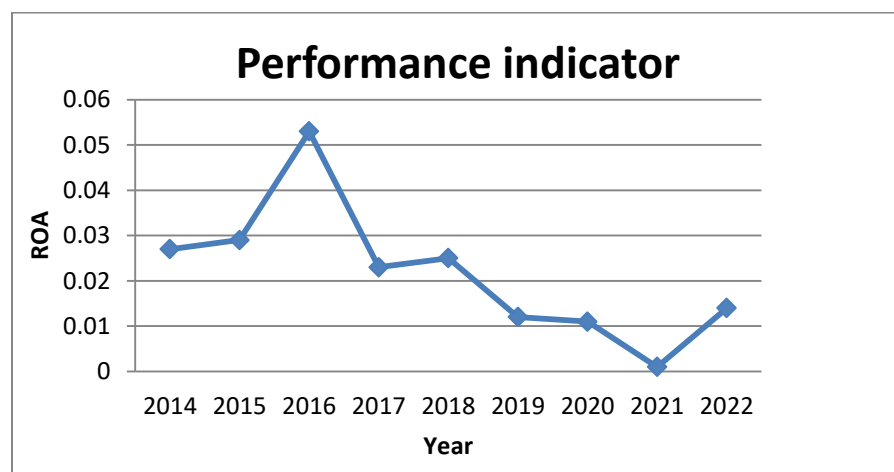


Figure 4.1: Trend Analyses on Return on Asset (ROA)

Source: Researcher (2024)

Figure 4.1 above indicated that the ROA measures the performance of commercial banks in South Sudan for a longitudinal series across a period of 2014 to 2022. The trend implied that the return on assets of commercial banks in South Sudan had a generally significant increase from 2014 to 2016 by 5.3 per cent. However, the years 2017 to 2022 showed a sharp decline in ROA

while 2021, was a worse decline by 0.1 %. Furthermore, the decrease in return on assets of commercial banks means that some banks are not making a profit on the use of assets. Therefore, implies decreased profits and more so ineffectiveness of management in making returns on the revenues of banks.

4.4.1 Trend Analysis of Liquidity Risk 2014-2022

This is sub section of trend analysis of liquidity risk as measures using current ratio, quick ratio or acid-test ration as showed in the figure 4.3 below.

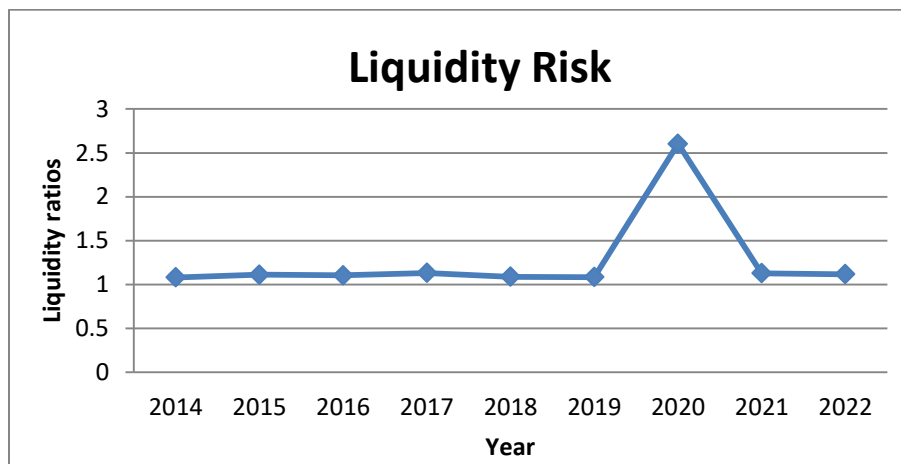


Figure 4.2: Trend Analysis of Liquidity risk

Source: Researcher (2024)

Figure 4.3 showed the liquidity ratio trend for the 33 banks from the year 2014 to 2022. The trend indicated that the liquidity ratio has been stable generally over the years until 2019 when there was a significant increase to the year 2020. Then 2021 to 2022 showed a decrease to the previous position of stable. This indicated that variability in liquidity ratio over the period

4.4.2 Trend Analysis of Credit Risk from 2014-2022

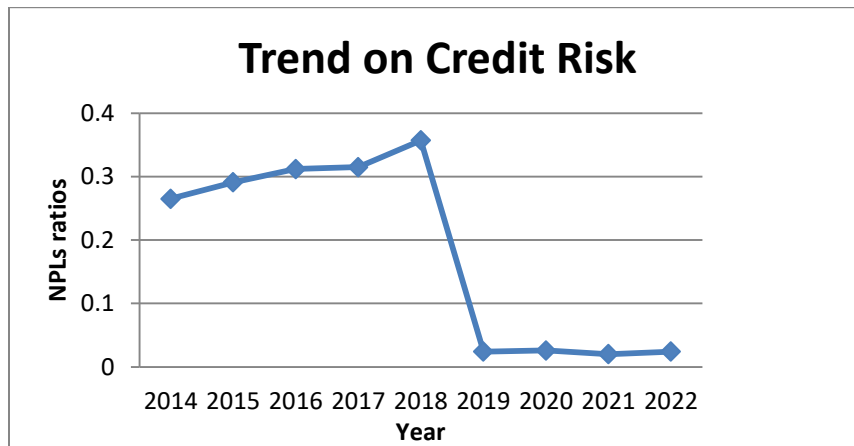


Figure 4.3: Trend Analysis of Credit risk

Source: Researcher (2024)

Figure 4.4 showed the credit risk trend for the 33 banks from the year 2014 to 2022. The trend line indicated that the credit risk ratio has been increasing over time from 2014 to 2018 though there was a huge drop in 2019. However, the trend lines showed that there was a poor performance of loans from 2019 to 2022, implied small variability and the lowest non-performing loans over time. This means that commercial banks were experiencing poor performance since the most of borrowers defaulted

4.4.3 Trend Analysis of Exchange Rate Risk from 2014- 2022

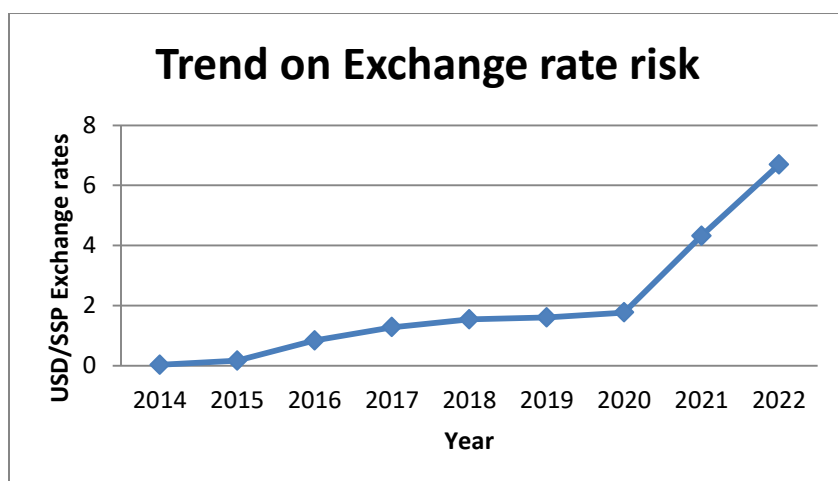


Figure 4.4: Trend Analysis of Exchange rate risk

Source: Researcher (2024)

Figure 4.5 showed that there was a stable trend in exchange rates from the year 2014 to 2015. The trend line indicated that Foreign Exchange Risk has varied over time. In addition, this means that there was a fixed exchange before the government devalued South Sudan Pounds against USD in December 2015 and adopted a float exchange rate. However, the year 2015 in December saw the beginning of SSP decline against USD from 2015 to 2022. The rise is associated with the advice from the IMF and World Bank that the government should dissolve the fixed exchange rate and adopt float exchange which means market forces determined by Supply and Demand. Additionally, the rise of the exchange rate was also associated with the shutdown of oil production in 2012 due to a dispute with Sudan on the price of crude charges on a pipeline and the subsequent war from 2013 to 2018. Moreover, there was a decline in international oil prices contributed largely to a country where 98 % of revenues come from crude oil which is largely the source of external reserves and in turn exchange rate stability in South Sudan. This led to uncertainties in the financial sector and brought about financial distress that resulted in two banks collapsing and 12 commercial banks being placed under statutory management. Consequently, there was excessive demand for the US dollar by traders and the public, due to the drastic rise of the dollar against SSP from 2014 where 2.95 SSP /USD to 668.67 in 2022. This makes it hard for business people and the public to access dollars where almost everything is brought from East African member states including food commodities.

4.4.5 Trend Analysis of Interest Rate Risk from 2014- 2022

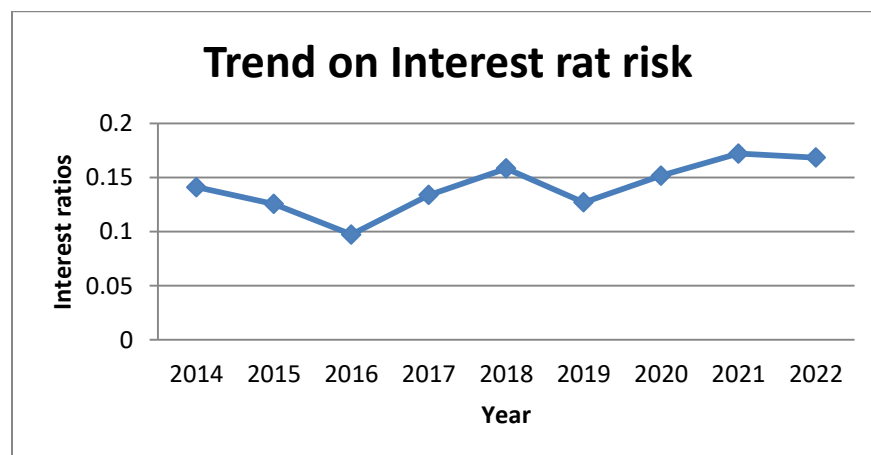


Figure 4.5: Trend Analysis of Interest rate risk

Source: Researcher (2024)

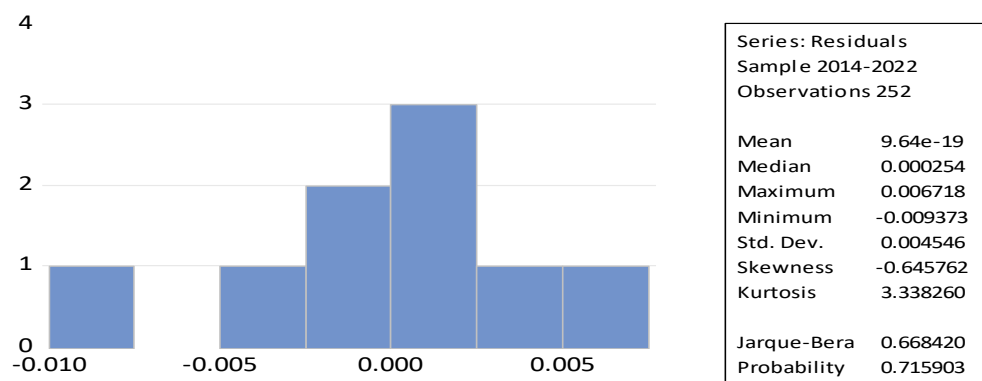
Figure 4.6 indicated that there was a sharp decrease in interest rates from the period 2014 to 2016, though from 2016 to 2018, it showed a rise. Though it indicated a small drop in 2019 then 2020 to 2022 interest rates showed a sharp increase. Nevertheless, this means that commercial banks issue loans to earn their interest or income from interest rates levied on the loans, and the banks suffer losses causing some banks to collapse.

4.5 Diagnostic Tests

4.5.1 Normality Test

To establish whether the observed values follow a normal distribution, Sk/Jarque-bera test was performed.

Table 4.2: Normality Test using Sk test/Jarque-bera test



Source: Researcher (2024)

The results in table 4.2 indicated that Jacque-Bera test results reveal that all variables except exchange rate risk were normally distributed. However, it also concludes that the Jarque-bera test shows that the residuals were generally normally distributed. Thus, the results of JB test found that all variables have greater than 0.05 significance p-value which implies that the study failed to reject null hypothesis. This indicated that the null hypothesis was normal distributed.

4.5.2 Multicollinearity

The study also carried out a multicollinearity test to check for the levels of multicollinearity so as to ensure it does not affect the regression analysis. In this case, the variance inflation factor (VIF)

was applied for which the mean VIF for the variables should not be more than 5 (moderate multicollinearity).

Table 4.3 Multicollinearity Test using VIF

Variable	VIF	1/VIF
Liquidity risk	1.5089	0.6627
Credit risk	2.4865	0.4022
Exchange rate risk	3.2292	0.3097
Interest rate risk	2.0211	0.4948
Mean VIF	2.311425	

Source: Researcher (2024)

From the table 4.3 showed that the variables mean VIF (2.3114) value is less than 5, which indicated there was no presence of multicollinearity. This confirmed by the tolerance factor (1/VIF) for each the variable being less than one. Thus, this is in agreement with the classical linear model (CLM) assumptions that for a regression analysis to be conducted there must be no presence of multicollinearity among independent variables.

4.5.3 Heteroskedasticity Test

Heteroskedasticity test is conducted using Breusch-Pagan test to test whether the residuals are constant or error terms are correlated across observation in the time series data. A p-value more than 0.05 implies that residuals are homoscedastic and constant and if a p-value is less than 0.05 is signified that residuals are not homoscedastic.

Table 4.4 Heteroskedasticity Test using Breusch Pagan

F-Statistic	0.276999	Prob. F (4,9)	0.8793
Obs*R-squared	1.952226	Prob. Chi-Square (4)	0.7445

Source: Researcher (2024)

From the table 4.4 above showed that the null hypothesis has no evidence to reject since the p-value 0.7445 for return on assets is more than 0.05 significance levels. Therefore, the

investigation concludes that there was homoscedasticity. Thus the data aligns with CLM assumption that variance of error terms is constant.

4.5. 4 Autocorrelation Test

To understand and interpretations of DW test, an ideal value of 2 indicates non-autocorrelation, while a value closer to 0 indicates positive autocorrelation (Bae, S., 2019). Conversely, a value closer to 4 indicates negative autocorrelation (Dule *et al.*, 2021). Coefficient values ranging from 1.5 to 2.5 suggest no autocorrelation, while values above 2.5 to 4 indicate a positive autocorrelation. The null hypothesis of the tests asserts that the residuals are not linearly autocorrelated (Weiß *et al.*, 2023). Therefore, Durbin-Watson test was used to test for autocorrelation for one involving ROA which measures the financial performance of commercial banks.

Table 4.5 Autocorrelation test using Durbin-Watson							
Model	R	R square	Adjusted R Square	Std Err	Durbin-Watson		
1	0.9521	0.906	0.8132	0.0064	2.5700		
A	Independent Variables: Liquidity Risk, Credit Risk, Exchange rate Risk and Interest rate Risk						
B	Dependent Variable: ROA						

Source: Resarcher (2024)

From the table 4.5 results imply that the figure 2.57 indicated that a negative autocorrelation on ROA and financial performance of commercial banks. The negative autocorrelation suggests that a rise in one variable is likely to cause fall in another meaning, a sharp rise in prices today could lead to a decline tomorrow. This further says that great independent variables could trigger a strong ROA on financial performance of the banks.

4.5.5 Stationarity Tests

Augmented Dickey-Fuller (ADF) was used to test for the stationarity of our time series data. Brooks (200) recommends Philids-Perron test as alternative to ADF test which is more robust to some extent, while using time series data. Non-stationarity in regression analysis leads to the

spurious correlation that increases the value of R² and T-scores of the non-stationary dependent variables, leading to correct model specification. In case of variables showing non-stationarity Kocenda (2015) commends for cointegration test to analyze non-stationarity data, and eventually test for causality test if all the above tests aforesaid failed.

Table 2.6 Stationarity Test using ADF test Results

Method	Statistic	Prob.**
ADF - Fisher Chi-square	26.1429	0.0036
ADF - Choi Z-stat	-2.49780	0.0062

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

Intermediate ADF test results UNTITLED

Series	Prob.	Lag	Max Lag	Obs
ROA	0.1000	1	1	252
CREDIT_RISK	0.5151	1	1	252
EXCHANGE_RA...	0.3782	1	1	252
INTEREST_RA...	0.0005	1	1	252
LIQUIDITY_RISK	0.2377	1	1	252

Source: Researcher (2024)

The results of table 4.6 showed that when the ADF test performed on variables as group or simultaneously. The p-value (0.0036) is less than 0.05 indicating no presence of unit roots (H₀) hence reject null hypothesis and therefore, there is presence of stationarity. Since the granger causality and cointegration tests do not support the results of stationarity test, therefore, no need to run these tests again.

4.6 Inferential Analysis

Inferential statistics is all about the study population that uses statistics from the panel regression model. These statistics will use the study's ANOVA, correlation and regression analysis; therefore, in null hypothesis it can either be rejected or accepted at a 95% confidence level. Inferential statistics helps researchers to determine the probability that findings are due to change and to estimate the margin of error in the results (Gujarati, 2003).

4.6.1 Pearson Correlation Analysis

This determines that if the independent variables not related with the dependent variable, then it is specified by a zero (0) value. In addition, +1 or -1 indicates that the two variables were perfectly positive and negative correlated.

Table: 4.7 Correlation Analysis					
	ROA	Liquidity Risk	Credit Risk	Exchange rate risk	Interest rate risk
ROA	1.0000				
	-				
Liquidity Risk	0.2767	1.0000			
Credit Risk	0.7651	-0.3888	1.0000		
Exchange rate risk	-				
	0.5498	-0.0283	-0.6552	1.0000	
	-				
Interest rate risk	0.8011	0.1646	-0.4880	0.6843	1.0000

Source: Researcher (2024)

From table 4.9 the results showed that liquidity risk ($r=0.2767>0.05$) has a positive significant correlation between return on assets and the financial performance of commercial banks. Therefore, the ROA implies that liquidity risk can either increase or decrease the financial performance of banks. These findings are in line with the study of Omondi (2019), Otalul et al (2014), and Ali & Oudat (2020) but contradict Afriyie et al. (2022), Ahmed (2020), Njiru (2019) Jalale et al (2020) who found that liquidity risk has a negative significant impact on the financial performance of commercial banks.

Secondly, Credit risk indicated that ($r=0.7651>0.05$), there is a strong positive correlation between credit risk and ROA on the financial performance. The current study findings are consistent with the study of Jalal *et al.* (2020), Njiru (2020) but contradict the study of Omondi (2019).

Thirdly, Exchange rate risk ($r= -0.5498<0.05$) indicated a weak negative correlation on return on assets. In conclusion, there was a weak negative correlation between exchange rate risk and return on assets on financial performance. This means that exchange rate risk reduces the performance of commercial banks. This finding is in line with Jalal *et al.* (2020), Arkangelo *et*

al. (2021) and Alshiqi & Sahiti (2021) who found that exchange rate risk does not affect both ROA but in contrast with the study of Omondi (2019) found a negative effect of ROA and ROE on the financial performance of banks.

Finally, Interest rate risk ($r=-0.8011$, $p>0.05$) showed a negative correlation on return on assets. This means that there was a negative correlation between interest rate risk and ROA on the financial performance of banks hence this decrease the ROA on the banks. This is consistent with the study of Omondi (2019), Njiru (2020) and Juma (2018) who found that interest rate risk has a statistically significant effect on financial performance, but contradicts the study of Jalale et al (2020) who found a very minimal effect of financial risk and financial performance of Russian banks.

4.6.2 Regression Model

The overall objective of the study is to establish the effect of financial risk on the financial performance of commercial banks in South Sudan. The independent variables of the research are liquidity risk, credit risk, exchange rate risk and interest rate risk, while the dependent variable of this study is ROA to measure the financial performance of banks.

Table 4.8: Model Fitness

<i>Indicator</i>	<i>Coefficient</i>
Multiple R	0.9521
R Square	0.9066
Adjusted R Square	0.8132
Standard Error	0.0064

Source: Researcher (2024)

From Table 4.11, the results show that R- square is 0.9066, which is an indication that liquidity risk, credit risk, exchange rate risk and interest rate risk are jointly explained by 90.66 per cent of the changes in financial performance measured by ROA. This means that 9.34 per cent could contribute to other variables not studied in this research. Also, the table indicated adjusted R square of 0.8132 in the analysis showed 81.32% of the variation in the dependent variable explained by the independent variables in the model, after accounting for the number of predictors. In addition, the value of 0.8132 suggests that the dependent variable has strong explanatory power while the remaining 18.68% in the dependent variable is due to the factor not

included in this study. As the name implies, adjusted R square only increases if the added predictors improve the model's explanatory power thus, decreasing when the new variable does not affect the model. This means that a strong adjusted R² value signifies that the model has a good fit and explains most of the variability in the dependent variable.

The significant level of p-value 0.005 shows that there is a statistical relationship between the independent variables and dependent variables. Whenever the significance level is lower than the p-value which is 0.05, it concludes that the model is significant to elaborate the relationship. Meanwhile, when the p-value is greater than the significant level, it shows there is insignificant effect.

Table 4.9 ANOVA

	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	0.0004	9.7039	0.0246
Residual	4	0.0000		
Total	8			

Source: Researcher (2024)

From the table 4.11 showed that the results on the ANOVA model analyzed on common variables as group suggested ($P=0.0246<0.05$) which indicates that the model is significant hence the independent variables include liquidity risk, Credit risk, Exchange rate risk and Interest rate risk have strong effect on the dependent variable (ROA). The independent variables are good predictors of financial performance of commercial banks. Generally, the findings indicate that there is significant impact on financial performance of commercial banks in South Sudan.

Table 4.10 Regression Model on Dependent variable (ROA)

<i>Variable</i>	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.0651	3.3954	0.0274
Liquidity Risk	0.0051	0.9117	0.4135
Credit Risk	0.0760	3.2201	0.0323
Exchange rate risk	0.0035	1.8616	0.1362
Interest rate risk	-0.5005	-3.6841	0.0211

Source: Researcher (2024)

Based on the intercept which has the coefficient of 0.0651 and P value =0.0274<0.05 which means that the intercept has a significant effect in the findings. Liquidity risk has the coefficient of 0.0051 and P value =0.4135>0.05 which implies that liquidity risk is insignificant and has no a statistically effect on financial performance measured by ROA.

It further indicates that credit risk has the coefficient of 0.0760 and P value =0.0323<0.05 which signifies that credit risk is significant and has a positive significant effect on financial performance of commercial banks measured by ROA. This can be explained that one percent increase in credit risk leads to increase in ROA by 7.6%. Exchange rate risk has the coefficient of 0.0035 and P value=0.1362>0.05 which explains that exchange rate risk is insignificant and has no effect on financial performance of commercial banks measured by ROA. This can explain that one percent increase in exchange rate can lead to rise in ROA by 0.35%

In conclusion, interest rate risk of coefficient of -0.5005 and P value=0.0211. This means that interest rate risk is significant and has a negative effect on financial performance of commercial banks. Therefore, it concludes that one percent increase in interest rate risk leads to decrease in ROA by 50.05 %.

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

$$ROA = 0.0651 + 0.0760 X_2 - 0.5005 X_{4it} + \epsilon_{it}$$

Where:

Y_{it} – Financial Performance (ROA)

β₀ -Constant

X_{1it} – Liquidity Risk (Ratio of total loans to total deposits).

X_{2it} – Credit Risk (Non-Performing Loans ratio).

X_{3it} – Interest Rate Risk

X_{4it} – Exchange Rate Risk

Source: Researcher (2024)

4.8 Tests of Hypotheses

The main goal of the study was to examine the effect of financial risk and the financial performance of commercial banks in South Sudan. The variables examined include liquidity risk, credit risk, exchange rate risk and interest rate risk along with dependent variable of ROA used to gauge banks' financial performance. Additionally this section delves into the results of hypothesis testing conducted using regression analysis to determine significance at a 95% confidence level ($\alpha=0.05$). The research hypotheses will be tested using the p-value method hence p-value is a probability value that measure statistically and helps to determine the significant research results. Another word, when a low p value that is less than 0.05, it indicates that a strong evidence against null hypothesis therefore, we reject null hypothesis. When there is a high p value that is greater than 0.05 we fail to reject the null hypothesis.

4.8.1 H_{01} : Liquidity risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

In Table 4.12 showed liquidity risk has coefficient of 0.0051 and ($p=0.4135>0.05$). The findings suggest that liquidity risk is a positive but insignificant. In another words, liquidity risk has a no statistically significant effect on financial performance of commercial banks measured by ROA in South Sudan. As a result presented above, the research failed to reject the null hypothesis (H_0).

The results align, with Omondi (2019) and Ali & Oudat (2020). However they are at odds with the findings of Afriyie *et al.*(2022), Ahmed (2020) Njiru (2019) and Jalale *et al.*(2020) From 2020 who discovered that liquidity risk negatively impacts the performance of banks. This suggests that maintaining a liquidity ratio may not necessarily lead to performance. Effective management is crucial for meeting obligations, hence, ensuring that banks can generate returns on assets.

4.8.2 H_{02} : Credit risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

In Table 4.12 indicated the coefficients of credit risk (0.0760) and ($p=0.0323<0.05$) which implies that credit risk is significant hence credit risk has a statistically significant and positive effect of credit risk on the financial performance of commercial banks measured by ROA in

South Sudan. Therefore based on this evidence above, the study rejected the null hypothesis (H_0). This means that a 1% change in credit risk will lead to a positive 0.0760 change ROA.

The findings align with the research conducted by Jalal *et al.* (2020), Njiru (2020) however, current study findings are in contrast to the study by Omondi (2019). It is crucial for banks management to conduct diligence when customers apply for loans. This practice ensures that comprehensive background checks are carried out which is essential for enhancing performing loan (NPL) management and reducing NPL ratios ultimately leading to improved financial performance of the banks.

4.8.3 H_{03} : Exchange rate risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

The coefficient (0.0035) of exchange rate risk and (P value=0.1362>0.05) which indicates that exchange rate risk is insignificant and has no a statistically significant effect on financial performance of commercial banks measured by return of assets (ROA) in South Sudan. This suggests that the p values exceed the significance level of 0.05 under the null hypothesis (H_0) the study failed to reject H_0 . Furthermore there is evidence indicating that a one unit change in exchange rate risk results in an increase of 0.0035 (0.35 %) units in ROA. These findings are consistent, with those presented by Jalal *et al.* (2020), Arkangelo *et al.* (2021), and Alshiqi and Sahiti (2021) discovered that fluctuations in exchange rates do not impact the returns on assets (ROA) and returns on equity (ROE). This contrasts with Omondi (2019) which revealed that exchange rate risk has a negative effect on ROA & ROE and the financial performance of banks. Bank management should aim to cap their earnings to reduce expenses. Implementing risk mitigation strategies such as swaps, options, spot markets and forward markets in operations can lead to increased profits for banks.

4.8.4 H_{04} : Interest rate risk has no statistically significant effect on the financial performance of commercial banks in South Sudan

The coefficient -0.5005 of interest rate risk and p value=0.0211<0.05 indicating that interest rate risk has a statistically significant negative effect on financial performance of commercial banks measured by return of assets (ROA) in South Sudan. As the findings showed above, the study rejected the null hypothesis (H_0). Thus it suggests that a one unit increase in interest rate risk

leads to a decrease in ROA by -50.05 %. Banks should consider charging interest, on loans to secure their profits.

The findings align with the research conducted by Omondi (2019), Njiru (2020) and Juma (2018) indicating an impact of interest rate risk, on financial performance. However these results differ from the study by Jalale *et al.*(2020) which reported a minimal influence of risk, on the performance of Russian banks.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section discusses the summary of the findings, recommendations and conclusion. It's also including further areas of research and study limitations as well as per study's objectives.

5.2 Summary of Main Findings

The summary of the findings are done per objective.

5.2.1 Liquidity risk

This is the first objective of the study to determine the effect of liquidity risk on the financial performance of commercial banks in South Sudan. The study adopts multiple regression analysis to analyze the both independent and dependent variables. The findings conclude that liquidity risk is evident by (coef=0.0051 and $p=0.4135>0.05$), and based on the findings, liquidity risk has positively insignificant and has no effect on the financial performance of commercial banks as measured by ROA in South Sudan.

5.2.2 Credit risk

The second objective of the study also sought to establish the effect of credit risk on the financial performance of commercial banks in South Sudan. The study adopts longitudinal design and analyzes variables using multiple regressions to explain the statistical relation between independent and dependent variables. The results showed (coef= 0.0760 and $p=0.0323<0.05$) that credit risk has significant positive effect on the financial performance of commercial banks as measured by ROA in South Sudan.

5.2.3 Exchange rate risk

The third objective was to assess the effect of exchange rate risk on the financial performance of commercial banks in South Sudan. This study adopted longitudinal research design through multiple regression analysis to explain the statistically significant influence between independent and dependent variables. The findings indicated (coef=0.0035, $p=0.1362>0.05$) that exchange

rate risk has no effect on the financial performance of commercial banks as measured by ROA in South Sudan.

5.2.4 Interest rate risk

The final objective study was sought to examine the effect of interest rate risk on the financial performance of commercial banks in South Sudan. The results of findings (coeff= -0.5005, $p=0.0211<0.05$) showed that interest rate risk has a significant negative effect on the financial performance of commercial banks as measured by ROA in South Sudan.

5.3 Discussion of the Study Findings

5.3.1 Liquidity risk and financial performance

The results showed that liquidity risk has (coefficients =0.0051, $p=0.4135>0.05$). Based on the findings, the p-value is greater than the significant level of 0.05, hence the research failed to reject the null hypothesis (H_0). These findings suggest liquidity risk has no effect of liquidity risk on the financial performance of commercial banks as measured by the return of assets (ROA) in South Sudan. This suggests that maintaining a liquidity ratio may not necessarily lead to performance. Effective management is crucial for meeting obligations, hence, ensuring that banks can generate returns on assets.

The results align, with Omondi (2019) and Ali & Oudat (2020). However, they are at odds with the findings of Afriyie et al.(2022), Ahmed (2020) Njiru (2019) and Jalal et al.(2020) who discovered that liquidity risk negatively impacts the performance of banks.

5.3.2 Credit risk and financial performance

The coefficients and p-value related to credit risk indicated (coef=0.0760), ($p=0.0323<0.05$) were based on ROA as a measure of banks' financial performance. The results showed that credit risk has a statistically significant and positive effect on the financial performance of commercial banks in South Sudan. Therefore based on this evidence the study rejected the null hypothesis (H_0) because it has less at a 0.05 significance level. This means that an increase in the coefficient of 0.0760 indicates that an increase in credit risk leads to an increase in ROA by 7.6 %. Bank management must conduct diligence when customers apply for loans. This practice ensures that comprehensive background checks are carried out which is essential for enhancing performing loan (NPL) management and reducing NPL ratios ultimately leading to improved financial performance of the banks.

The findings align with the research conducted by Jalal et al. (2020), Njiru (2020) however, current study findings are in contrast to the study by Omondi (2019).

5.5.3 Exchange rate risk and financial performance

Based on the findings, exchange rate risk has coefficients of 0.0035 with a p-value of $0.1362 > 0.05$. This suggests that the p values exceed the significance level of 0.05 under the null hypothesis (H_0) the study failed to reject H_0 . The results demonstrated that the exchange rate has no effect on the financial performance of commercial banks as measured by return on assets (ROA) in South Sudan. Furthermore, there is evidence indicating that a one-unit increase in exchange rate risk results in an increase of 0.0035 (0.35 %) units in ROA.

These findings are consistent, with those presented by Jalal et al. (2020), Arkangelo et al. (2021), and Alshiqi and Sahiti (2021) discovered that fluctuations in exchange rates do not impact the returns on assets (ROA) and returns on equity (ROE). This contrasts with Omondi (2019) which revealed that exchange rate risk hurts ROA & ROE and the financial performance of banks. Bank management should aim to cap their earnings to reduce expenses. Implementing risk mitigation strategies such as swaps, options, spot markets and forward markets in operations can lead to increased profits for banks.

5.3.4 Interest rate risk and financial performance

The analysis showed that interest rate risk had a coefficient of -0.5005 with a p-value of $0.0211 < 0.05$. As the results indicated the null hypothesis (H_0) is rejected thus it suggests that a one-unit increase in interest rate risk leads to a decrease in ROA by -50.05 %. As per the findings indicating interest rate risk has a statistically significant but negative effect on the financial performance of commercial banks as measured by ROA in South Sudan. Banks should consider charging interest, on loans to secure their profits.

The findings align with the research conducted by Omondi (2019), Njiru (2020) and Juma (2018) indicating an impact of interest rate risk, on financial performance. However, these results differ from the study by Jalal et al. (2020) which reported a minimal influence of risk, on the performance of Russian banks.

5.4 Conclusions

The study determined financial risk on the financial performance of commercial banks and concluded that credit risk was found to have a statistically significant and positive effect on financial performance while interest rate risk had a negative statistically significant effect on the financial performance of commercial banks in South Sudan. On the other hand, liquidity risk and exchange rate risk had a statistically insignificant effect on the financial performance of commercial banks in South Sudan. This study outlines the conclusions as follows:

Hypothesis one, the study concluded that liquidity risk has no statistically significant effect on the financial performance of commercial banks as measured by ROA in South Sudan. This is in line with other previous studies. This suggests that maintaining a liquidity ratio may not necessarily lead to performance. Effective management is crucial for meeting obligations, hence, ensuring that banks can generate returns on assets.

Hypothesis two, credit risk found to have a statistically significant and positive effect on the financial performance of commercial banks in South Sudan. The findings align with empirical studies which indicated that credit risk affects the financial performance of commercial banks. Bank management must conduct diligence when customers apply for loans. This practice ensures that comprehensive background checks are carried out which is essential for enhancing performing loan (NPL) management and reducing NPL ratios ultimately leading to improved financial performance of the banks.

Hypothesis three determined that exchange rate risk has no statistically significant effect on the financial performance of commercial banks as measured by return on assets (ROA) in South Sudan. The findings are consistent with previous studies revealing exchange rate risk does not impact the ROA and financial performance. This contrasts with Omondi's study which indicated that exchange rate risk has negative effects on ROA and financial performance. Bank management should aim to cap their earnings to reduce expenses. Implementing risk mitigation strategies such as swaps, options, spot markets and forward markets in operations can lead to increased profits for banks.

Test of hypothesis four concluded that interest rate risk has a statistically significant negative effect on the financial performance of commercial banks as measured by ROA in South Sudan. The findings align with the research conducted by empirical studies indicating an impact of interest rate risk, on financial performance. However, these results differ from the study by Jalal which reported a minimal influence of risk, on the performance of Russian banks. Banks should consider charging interest, on loans to secure their profits.

Based on the ANOVA model analyzed variables as the group suggested there is a significant impact on the financial performance of commercial banks as measured by ROA in South Sudan. In addition, the R square indicated that independent variables are jointly explained by 90.66% changes in ROA on financial performance. This means that 9.34% could contribute to other variables not studied in this research. An adjusted R square value of 0.8132 suggests that the dependent variable has strong explanatory power while the remaining 18.68% in the dependent variable is due to the factor not included in this study.

Furthermore, findings on correlation analysis indicated that liquidity risk and ROA have strong positive correlations on the financial performance of commercial banks in South Sudan. Besides, credit risk indicated that there is a strong positive correlation between credit risk and ROA on financial performance.

Also, exchange rate risk indicated a negative correlation between exchange rate risk and return on assets on financial performance. This means that exchange rate risk reduces the performance of commercial banks. Moreover, interest rate risk showed a negative correlation between interest rate risk and ROA on the financial performance of banks hence this decreases the ROA of the banks

5.5 Recommendations

The research findings hold importance for stakeholders such, as bank management, policymakers, government officials, regulatory bodies, investors and academics. The main objectives of the study were to examine how liquidity risk, credit risk, exchange rate risk and interest rate risk impact the performance of banks. According to the study results credit risk has a positive influence on the financial performance of commercial banks. The recommendations based on these findings suggest that bank management should conduct background checks on

loan applicants senior management should review loan agreements before approval there should be state regulations for loans compliance, with agreed terms and conditions. Additionally it is proposed that the government implement legislation to establish a Credit bureau to maintain records of defaults in order to prevent defaulters from accessing loans without settling the first ones. This measure aims to reduce performing loans that can adversely affect banks financial performance. Furthermore banks are advised to monitor borrowers' repayment history and verify their income before granting loans. Banks need to establish an atmosphere and build connections, with customers and the public to foster a harmonious working relationship.

According to the research the impact of interest rate risk on the performance of banks is statistically significant and negative. Banks generate income by charging interest rates on loans and other transactions, which serves as their source of funds. When interest rates rise customers tend to refrain from taking out loans leading to reduced profitability for banks and subsequently affecting their performance. Therefore bank management should focus on developing skills to effectively manage interest rate risk within the banking industry. The study also suggests that bank management should enhance their capabilities in handling risks and explore methods such as derivatives and assets securitizations to mitigate interest rate risk.

On the hand exchange rate risk was found to have an insignificant yet positive impact on the financial performance of commercial banks in South Sudan based on the results obtained. Furthermore it is advised that bank management closely monitor their operations and performance to minimize exchange rate risk associated with currency devaluation and fluctuations, between states. Moreover the research should explore methods to reduce the impact of currency exchange fluctuations by utilizing tools such, as swaps, options, spot markets and forward markets when managing operations.

As mentioned earlier the study revealed that liquidity risk had a yet insignificant but positive influence on the financial performance of commercial banks in South Sudan. Therefore it is suggested that commercial banks focus on assessing, monitoring and controlling liquidity risk effectively. Bank management should closely monitor assets and liabilities on their balance sheets over a period to maintain awareness of their liquidity position. This proactive approach can benefit the banks investment portfolio. Provide an advantage in the market. The central bank should remain vigilant about liquidity challenges in banks. Be prepared to implement prompt solutions to prevent bank failures or liquidation.

Additionally the study recommends that government agencies diversify the economy by investing oil revenues into agriculture to enhance food security. This strategy aims to reduce reliance, on foreign currency for importing food items and stimulate growth.

The study also suggests that the central bank (BoSS) should coordinate the market by merging the parallel markets with that of official rate to enhance the foreign exchange rate making it easier for traders to access hard currencies. Furthermore BoSS ought to implement measures to combat illegal trading and oversee the banking industry to stimulate economic growth.

5.6 Limitation of the Study

The research findings are focused solely on the economy of South Sudan highlighting the necessity, for investigation into aspects such as the presence of banks. It is noted that South Sudan's economy is relatively small and underdeveloped compared to neighboring regions. The country's institutions are described as nascent. May requires time for research, training and innovation to foster manpower development.

South Sudan has faced challenges since gaining independence from Sudan in 2011. These challenges include events such as the war from 2013 to 2018, disputes over pipeline fees with Sudan resulting in oil production shutdown in 2012, locust invasions impacting food security, the economic paralysis caused by the COVID 19 pandemic and most recently disruptions due to the war in Sudan leading to a major oil giant like PETRONAS withdrawing from the oil and gas sector within South Sudan. Consequently these adversities have had a lasting impact on the performance of banks operating in South Sudan.

Additionally it should be noted that this study primarily relied on data sources which encompass time series information. A key limitation identified was a lack of data availability from institutions like CPI (Consumer Price Index) NBS (National Bureau of Statistics) SSNBS (South Sudan National Bureau of Statistics) and commercial banks due, to their immaturity and institutional capacities.

The researcher successfully gathered time series information, from the IMF and BoSS websites. However the study had to rely on data of time series data for accuracy reasons. Additionally there were challenges in obtaining data from bank statements the National Bureau of Standard, CPI and the BoSS as their websites were not regularly updated during the study period spanning from 2011 to 2022. Due to data unavailability, between 2011 and 2013 the study had to limit its scope to the years 2014-2022.

5.7 Areas of Further Research

The study focus was to examine the effect of financial risk and financial performance of commercial banks in South Sudan. The study analyzed four independent variables as including liquidity risk, credit risk, exchange rate risk and interest rate risk that jointly described 90.66 per cent of the variation in the ROA using time series regression analysis. There is a need to carry out further study to establish factors that explain the remaining 9.34 per cent disparity in the study. After running multiple regression models, it found that credit risk and interest rate risk had a statistically significant effect on ROA on the financial performance of commercial banks, while exchange rate risk and liquidity risk had a statistically insignificant but positive effect on the financial performance of South Sudanese banks. This study recommends carrying out another research covering the effect of the parallel exchange rate (black market exchange rate) on the financial performance of commercial banks in South Sudan. Similar study need to be done to assess the effect of financial risk and financial performance of domestic banks in South Sudan.

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APPENDICES

APENDIX I: Data Collection Sheet

Variable	Formulae	Year								
		2014	2015	2016	2017	2018	2019	2020	2021	2022
Financial Performance	=PBT/ROA*100	2.7	2.9	5.3	2.3	2.5%	1.2%	1.1%	0.1%	1.4%
Liquidity Risk	=C.A/C.L*100	1.08	1.112	1.104	1.131	1.088	1.084	2.603	1.127	1.116
Credit Risk (NPL ratios)	=NPLs/Total loans*100	0.265	0.291	0.312	0.315	0.357	0.024	0.026	0.02	0.024
Exchange Rate Risk	=Exchange Gains/Exchange loss*100	2.950	16.621	83.905	127.94	154.025	160.415	177.281	432.054	668.667
Interest Rate Risk	=Total loans Income/Net Loan Portfolio*100	0.141	0.126	0.097	0.134	0.158	0.127	0.152	0.172	0.168

APPENDIX II: The List of Commercial Banks

1. African National Bank	2. Afriland First Bank
3. Agricultural Bank of South Sudan	4. Buffalo Commercial Bank
5. Charter One Bank	6. Commercial Bank of Ethiopia
7. Cooperative Bank of South Sudan	8. Eco bank of South Sudan
9. Eden Commercial Bank	10. Equity Bank SS Ltd
11. International Commercial Bank	12. Ivory Bank
13. KCB Bank SS Ltd	14. Kush Bank PLC
15. Liberty Commercial Bank	16. National Bank of Egypt
17. Nile Commercial Bank	18. Mountain Trade and Development Bank
19. National Credit Bank	20. Opportunity Bank SS Ltd
21. People's Bank PLC	22. Qatar National Bank (QNB)
23. Phoenix Commercial Bank	24. Royal Express Bank
25. Regent African Bank	26. . Horizon Bank
27. Stanbic Bank SS Ltd	28. Alpha Commercial Bank
29. South Sudan Commercial Bank	30. Ebony National Bank
31. Southern Rock Bank	32. St. Theresa Rural Development Bank
33. National Investment & Development Bank PLC (NID Bank)	

APPENDIX III: An Introduction Letter

23rd May 2024

Office of the Governor,
Bank of South Sudan (BoSS),
P.O.Box 136- Juba Market,
Juba, South Sudan.

Dear Madam/Sir,

**RE: AN INTRODUCTION LETTER SEEKING TO COLLECT DATA FROM THE
BANK OF SOUTH SUDAN AND COMMERCIAL BANKS.**

My name is Valentino Ngeny, a postgraduate student at Africa Nazarene University in Kenya. I am passionately pursuing an MBA in Finance and currently engaged in a research project titled Financial Risks and Financial Performance of Commercial Banks in South Sudan.

Therefore, to ensure the thoroughness and accuracy of this research and its completion, I would like to ask permission from the Department of Supervision, Research, and Statistics in your good institution to collect data from here and Commercial banks in South Sudan. I promise that this information will be used for educational purposes only.

I would appreciate any help with this.

Yours faithfully,



Valentino Ngeny

Postgraduate student

Africa Nazarene University

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APPENDIX IV: Research Authorization Letter



20th, May 2024

E-mail: researchwriting.mba.mme@anu.ac.ke

Tel. 0202711213

Our Ref: 21S01DMBA001

Office of the Governor,
Bank of South Sudan (BoSS),
P.O.Box 136- Juba Market,
Juba, South Sudan.

Dear Sir/Madam:

RE: RESEARCH AUTHORIZATION FOR: VALENTINO WOL NGENY

Mr. Valentino is a postgraduate student at Africa Nazarene University in the Master of Business Administration (MBA) program.

In order to complete his program, Mr. Valentino is conducting research entitled: “**Financial Risks and Financial Performance of Commercial Banks in South Sudan**”

Any assistance offered to him will be highly appreciated.
Yours Faithfully,



DR. Kimani Gichuhi,

MBA, Coordinator,

School of Business, Africa Nazarene University.

APPENDIX V: Research Site/ Map of South Sudan

