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Yai N. Adhuong & Dr. Daniel M. Makori, PhD

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[1] Adhuong, N., Y., & [2] Makori, D. M.

[1] MBA Student, School of Business, Economics and Tourism, Kenyatta University, Kenya
[2] Lecturer, Department of Accounting and Finance, School of Business and Economics, Kenyatta University, Kenya

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ABSTRACT

The intermediation provided by banks depends on the efficiency of the bank. Commercial banks in South Sudan have continued to experience poor performance. This has been a significant source of concern for the South Sudan's financial sector over the years. Studies on financial performance and macroeconomic factors have largely not been based on South Sudan Banks. The general objective of the study was to establish the effect of selected macro-economic variables on financial performance of commercial banks in South Sudan. The study adopted explanatory research design. A census of 29 commercial banks listed in South Sudan that were in operation from 2012 to 2020 was targeted. The audited financial statements of the listed commercial banks served as the source of secondary panel data. Data collection was by use of a document review guide. Data analysis for the study was by use of regression model and correlation. The study was based on Vector autoregressive (VAR) model to assess relationship between macro-economic variables and financial performance of commercial banks. From the findings of the study, it was established that interest rate has no significant effect on financial performance of commercial banks in South Sudan; Gross Domestic Product has no significant effect on financial performance of commercial banks in South Sudan; inflation rate has no significant effect on financial performance of commercial banks in South Sudan and exchange rate has no significant effect on financial performance of commercial banks in South Sudan. Macroeconomic variables such as interest rate Gross domestic product, inflation rate and exchange rate. The study suggested that commercial banks' management committees continuously monitor inflation rates in order for them to adjust their loan products and services in line with the inflation rate; commercial banks should design dynamic interest rate policies that would lead to growth by attracting many customers; and commercial banks should ensure that the business environment is favorable in order to encourage investment in them since they have the ability to offer a variety of financial services.

Key Words: *Consumer Price Index, Exchange Rate, Financial Performance, Gross Domestic Product, Inflation, Interest Rate and Macro-Economic Variables.*

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INTRODUCTION

Banks as the main financial institutions contribute a lot in mobilizing financial resources throughout the economy of any country. Banks play a crucial role in providing financial stability and economic prosperity (Were & Wambua, 2014). Both bank level and macro-economic levels play a significant role in determining a nation's banking system's profitability. The earnings and profitability of the bank are the main metrics used to assess its performance. The difference between total revenue and total costs is what is referred to as profitability. As a result, the factors that impact the bank's revenue and expenses are also those that affect the commercial bank's profitability. As a result, the impact of the factors within and without the commercial bank revenue is examined in order to demonstrate how they affect the income and expenses of the bank (Alper & Anbar, 2013).

In any economy, a number of variables influence how profitable the banking business is. Most studies categorize the factors that determine how well commercial banks perform into two groups: internal factors and external factors (Khrawish, 2014). One of the difficulties commercial banks faced in order to improve their financial positions and prepare for the threats brought on by globalization was profitability. A prosperous banking industry can resist adverse conditions and add financial system's firmness (Almumani, 2013). The factors that determine profitability are carefully studied and investigated. Since it is becoming more crucial to solidify the framework of the local financial system in order to increase flexibility for capital flow volatility. Managerial (internal) and environmental factors have an impact on the commercial banks (external) profitability (Rumble 2014). The market inflation, economic growth, trade interdependence, trade interdependence, market interest rates, ownership structure and financial market structure are the external variables that have an impact on environmental factors. Management decisions and objectives for the banks including credit risk, productivity growth, and capital ratio and bank performance size have an impact on managerial factors (Anghazo, 2017).

Commercial Banks earn income from mediating transactions involving money suppliers and demanders which is a transactional income that banks traditionally receive. However, banks have developed new ways of generating incomes from other activities which are non-intermediation (Mulwa, 2015). Growth of income activities from non-intermediation is an indication that the traditional intermediation income gain which is less important part of strategies of banking business. Banks have changed their balance of sales by diversifying their sources of income (Ngari, 2018).

The banking sector manages the risk distribution and economic resource allocation functions for any anticipated capital in a country. An economy's improved growth, well-being and business phase are secured by an effective and profitable banking industry (Macharia, 2013). For example, commercial banks offer the services of currency exchange and payment processing, risk management and asset transformation on a maturity basis among other tasks making them the best channels for implementing monetary policies (Koki, 2013). The process of regulating money's cost of interest by the central bank of a country is known as monetary policy. It aims at achieving a number of objectives including stabilizing price levels, achieving price stability, enhancing industrial and economic stability and maintaining an improved payment balance (Cheruiyot, 2014).

The goals and objectives of the commercial banks are attainable through distribution of assets towards the desired financial performance within the national environment and industry. The environment is however often uneasy due to relationship between and among various macro variables including macroeconomic variables (McCarthy, 2016). The performance of an economy in a country is measured using the macro-economic factors. The variables include rate of inflation, Gross domestic product (GDP), consumers' price index, exchange rate, interest rates, stock market index and

activities of the government. These macro-economic variables are vital for the economic growth (Mankiw & Ball, 2010). Financial performances of commercial banks measure the outcome of a company' policies, performances, efficiency and effectiveness in monetary terms. This reflects in the firms return on investments, return on assets and profit earnings (Kimani, 2015).

Due to the commercial banks' trend toward high interest rates, project financing is severely hindered which makes equally effective equity financing despite their higher cost, High Treasury bill rates promote spending on more government tools, Bonds, stocks and deposits compete with Treasury bill for the investment of shareholders. Demand deposits and stock market instruments prices will eventually fall as demand for them declines. Thus, the anticipated relationship between Treasury bill rates and financial performance is adversely affected. It also has a favorable impact on interest rate expectations (Maghyerch, 2016).

According to financial reporters' confirmation, the majority of investors believe that macroeconomic factors and fiscal impact of policy on financial performance has significant changes over time (Muchiri, 2012). Shifting opportunities for investment, pricing practices and other considerations that impact dividends that are speculative and are influenced by economic factors and all have an impact on pricing and financial success. Prior research counted that the consumer price index is a specific component comprising of various macro-economic variables as Muchiri, (2012) concluded. As determined by these factors goods market, price increase and discount rate (Ganet *et al*., 2016). A study was concluded that the variables had a detrimental impact on each other. It is influenced by the risk of future profitability of the financial institutions. For instance, future productivity may suffer due to rising bills and higher production costs. On the other hand, some people think that higher prices brought on by the use of equity to control inflation may lead to higher stock values.

Sharma and Singh (2011) recommend that prior to extending credit to new or current customer's banks should first gather expensive information about potential borrowers. They argue that this is because the available funds allocation is greatly influenced by the volatility of the economic environment and the most likelihood that defaulting credit will have obvious negative or positive impact on the behavior used to lend money. According to research done by Shin and Kwon (2011) banks drop their lending rates during recessions as opposed to boom times when banks make the majority of their loans due to the low degree of macroeconomic volatility. The country's entire economy is affected by the economic climate which is a regular risk factor. Economy macroeconomic aggregates such as the total amount of goods produced typically rising industrial capacity utilization, the amount of money available for trading alters the exchange rate, employment level and rising price levels are used to measure performance and progress.

Modern technology and deregulation have reduced banks competitive advantage and made it simpler for competing financial institutions to join the financial markets, forcing commercial banks should change their sales mix to move towards other non-interest income sources (Angbazo, 2017). USA research findings indicate that non-interest income accounts for more than 43% in 1990 of USA net operating income of commercial banks (Stiro & Rumble, 2014). Due to this increase in non-interest income generating activities, it is becoming more important for consumers to find financial products offering revenues and opportunity to make a better deal with investment becoming more meaningful than actual profit. Furthermore, there is an increase in the spread and exchange of information, culture and values globally. This has led to people having a more open minded and also investing alternative ways of doing business (Dicken, 2016).

In Germany for example, Banks have been performing well but deteriorated in the year 2018.Profit before taxes for the fiscal year decreased from 27.5 billion in 2017 to 18.9 billion in 2018.

Return on assets decreased to 0.23% of total assets, a level which in recent times was only lower during financial crisis but not the other years. The country's Commercial Bank has been performing better. In USA, most of the banks have been performing well due to the financial stability and economic growth of a nation for many years, good management of financial institutions. In African countries such as South African Banks have been performing well and sometimes poor. Poor performance of many banks in Africa is due to political instability which leads to low income of the citizens (World Bank, 2019).

Central Banks in many developing countries especially in Africa face challenges in implementing effective monetary policy systems. The challenges faced by these banks due to the high debts by the government. This situation is accompanied by constraints in estimating fiscal-pressure and money-demand to increase the financial base and increase tax revenue (McCarthy, 2016). Monetary authorities in less developed countries are also characterized by inadequate records of monetary policy initiatives administration, this is the central banks are not independent of the government (Koki, 2015). The working conditions of many financial institutions is not predictable because of the tough competition in the global market and the financial sector. For banks to survive, the key players in the banking industry give lending rates that attract customers so as to attract as many customers as possible (Hayek, 2013). Mobilization of savings, allotment of scarce economic resources and risks spreading is enhanced by commercial banks. Financial institutions and banks do incur some costs because the expected receipts for loans and deposits are not synchronized and commercial banks always charge a fee for the offered intermediation services (Mulwa, 2015).

The component that is more important of a financial system of a nation is its banking system. One of its functions is capital provision in which banks direct money from economic units which are surplus to economic units which are deficit (Rasiah, 2014). The banks performance has remained extremely low due to their ineffectiveness in performing their functions as financial intermediaries not withstanding previous and ongoing reforms seen in many African countries including Nigeria. Banks have continued to perform poorly and this has led to significant levels of liquidity risk and in most cases, a loss of investor and consumer confidence. Additionally, this has contributed to financial intermediation's high cost that many financial institutions charge (Agade, 2016).

The economy of South Sudan mostly depends on oil export which is the main export commodity in the country. It contributes to 90% of the country's income and 65% GDP. The oil sector has continued to be the main contributor of economic growth but due to the nature of South Sudan economy, which is currently mainly on cash basis, with very low usage of bank cheques, the financial institutions (Commercial banks) have step up to play a very critical role in economic growth and financial stability through resource allocation. One of the major contributions by the Banking sector is the allocation of funds from creditors to debtors in an efficient manner (Kimani, 2015).

The interest rate on loans provided to banks by the appropriate authority is called Central Bank Rates, (Macharia, 2015). The rate of interest is set, determined and reviewed committee on the monetary policy which is done within two months. A rise in Central Bank rates leads to a rise of interest rates of other banks. This leads to reduction of the bank's profitability (Koki, 2013). One of the vital monetary policy tools used by Central Bank in a nation is money supply. Money supply is the total amount of money in circulation in a certain economy over a specific duration of time. These include possessions held by both organizations and individuals such as money, coins and savings accounts that can be used for payments and momentary investments (Waweru, 2013).

Rising of prices of commodities in an economy of a country over time within a specified period of time is referred to as inflation. Inflation is usually assessed using consumer price index (CPI) which is based on prices of services and commodities in a given

economy of a country. The most common method for measuring inflation is to contrast the consumer price index for one month to the consumer price index of the one month in the previous year. Inflation is usually caused by several factors within and without the countries market. For instance, during drought the price of food may increase leading to increase in the inflation rate (CBK, 2015).

Another macro-economic factor is the exchange rate. This is the official currency of exchange rate among different nations. It is the exchange rate needed to convert one currency into another (Atanda, 2012). A diminishing exchange rate of local currency in comparison to its foreign counterpart signifies depreciation of the domestic currency as in the case of the South Sudan's pound when compared to the US dollar or as a proxy for exchange rate in this study (Kimani, 2015). Another significant variable is the Gross Domestic Product (GDP), which measures the entire amount of goods and services produced in a country in one year. It also measures total income since the payment for the total production go to the producers of those goods and services. Interest rate is the cost of credit or the cost of borrowing money (Ongore & Kusa, 2015).

The financial indicators commonly used to measure banks financial performance include the amount of money a company makes for each share of its stock (Earning per share), Return on equity (ROE) which is percentage measure of return on shareholders' equity, Return on Investment (ROI) which is simply profit on investment or yields in sales as well as growth of sales (Mulwa, 2015). Additionally, there are ratios that are used to assess a company's performance which are typically summed up as growth and profitability (Illyukhin, 2015). They include revenue growth, return on equity (ROE), return on investment (ROI), return on assets (ROA), return on sales (ROS), market share, liquidity, stock price, market shares and sales growth. The major indicators of how well commercial banks are performing financially are return on equity (ROE) and return on assets (ROA) (Ajayi & Atanda, 2012).

To compare the total revenue earned by a company to the total shareholders' equity invested in the company as stated on the firm's statement of financial performance, a technique known as return on equity (ROE) will be used. To calculate return on investment, utilize ROE (Macharia, 2017). It is calculated by dividing net income by total equity capital. The rate of return on the investments made by bank stockholders is thus represented by it. Furthermore, ROE is a reliable measure of how effectively management uses shareholders' funds (Ajayi & Atanda, 2012). In reality, higher levels of ROE translate into higher returns on shareholders' capital (Mulwa, 2015). Financial performance will be gauged using ROE.

According to South Sudan's commercial banks' recently released results, total earnings were much higher in 2017 than in 2016 (CBSS, 2020). ROE for the years between 2012 and 2021. From the table, the ROE in 2012 was 23.01%, year 2013 was 22.25%, year 2014 was 22.14%, year 2015 was 22.02%, year 2016 was 21.99%, year 2017 was 20.94%, year 2018 was 20.88%, year 2019 was 17.59%, year 2020 was 14.45% and year 2021 was 14.35% which shows a downward trend. This demonstrates how changes in the macro-economic environment have affected society. For instance, the average return on equity in 2020 experienced a significant reduction as a result of the interest rate cap.

The banks in South Sudan are categorized into three categories; these are local banks such as Ebony National Bank, Kush Bank, Buffalo Commercial Bank, Agricultural Bank of South Sudan and St. Theresa Rural Development Bank, Regional foreign banks such as Equity Bank of South Sudan Limited, Ethiopia Commercial Bank (South Sudan) and KCB bank of South Sudan limited and International Banks such as African National Bank and Eco Bank (CBSS, 2019). The commercial banks in South Sudan were performing better for quite well sometime but due to civil wars and COVID 19 pandemic, the Banks have been performing poorly. Some of the difficulties faced by banks in South Sudan are high cost of operation, transport facilities in non-urban areas,

inadequate technical support, limited diversification across sector, limited access to funds, lack of regulatory framework, scarcity of skilled labor, market demolitions and lack of security and transport facilities in rural areas (CBSS, 2020).

Statement of the Problem

Commercial banks in every country are very important to the growth of the economy as they help in the expansion of the market and in order to raise living standards and to expand trade and commerce of the country, there must be formation of sound economic infrastructure of the country (Kamau, 2017). Profitability, which is frequently used to evaluate bank performance because to the complicated operating environment of banks has drawn the attention of both researchers and policy makers (Rumble, 2017). Cash dividends and retained earnings are only derived from a bank's success making profitability extremely critical for the continued existence of banks as well as their well-being (Ngari, 2018).

Despite the role of the role of commercial banks in the growth of the economy, the report by World Bank (2020) shows that the commercial banks' financial performance in South Sudan measured by ROE has been on a declining trend. According to reports on commercial banks' ROE was reported to be 20.99% in 2017 compared to 2016. The ROE of banks in South Sudan continued to decline from 2018 to 2020 when it was respectively at 20.92%, 20.86% and 17.35% (World Bank, 2020). But this has raised worries throughout the financial sector (Barnes, 2018).

Many studies on the effect of Macro-economic aspects and performance of financial institutions were carried out in developed nations other than South Sudan (Wambari, 2017; Turgut & Delani, 2020; Nyangor, 2020). Investigations carried out in South Sudan concentrated on ROA as a measure of performance (Kipngetich, 2018, Kimanzi, Wambua & Were, 2019; Khaled, 2012). Further, some studies were premised on multiple regression (Nduta, 2017; Fisher, 2018; Chege, 2018). In order to close the gap, the current investigation concentrated on the influence of macroeconomic factors on the performance of South Sudan's banks. The evaluation of financial performance will use ROE. Panel data will be used in the study although a panel regression rather than multiple regression will be used to examine the current investigations. Taking into consideration that the study will examine 29 commercial banks. Instead of using multiple regression models, the investigation will employ panel regression. The effect on each unit under observation is taken into consideration in panel data analysis.

Objectives of the Study

The general objective of the study is to determine the effect of selected macroeconomic variables on the financial performance of commercial banks in South Sudan.

The specific objectives of the study were:

- To establish the effect of interest rate on financial performance of commercial banks in South Sudan.
- To determine the effect of Gross Domestic Product on the Financial performance of Commercial banks in South Sudan.
- To examine the effect of inflation rate on financial performance of commercial banks in South Sudan.
- To establish the effect of exchange rate on financial performance of commercial banks in South Sudan.

LITERATURE REVIEW

Theoretical Framework

Theory of Arbitrage Pricing

Stephen Ross developed the theory of Arbitrage pricing theory (APT) which is a theory of pricing asset that explains the return anticipated from commercial asset or an investment. Modeling it as a linear relationship between a number of macroeconomic factors with the level of correlation changing for all variables as indicated by a beta coefficient is possible, to accurately determine the price or asset value, the rate of return from the

generated model will be used and asset's value should match expectations on average.

While numerous dispute specific causes may have an impact on a stock or bond's performance. APT agrees that this impact may be mitigated in well-defined portfolios. Therefore, the diversification principle that affects corporate bonds is this one and one of the original authors who used macroeconomic elements to replace all of the indeterminate parts in A.P.T was Chen, Roll and Ross (1986). These studies attempted to define equity as a crucial macroeconomic variable. This is due to financial issues including treasury bills, interest rates and the rebate rate which have an impact on predicted surpluses.

According to Roll and Ross (1995), the underlying premise of the Arbitrage Price Theory is that only a smaller number of systematic factors have an impact on the long-term aggregate returns of financial assets contrary to the presumption that prices of stocks are systematically influenced by economic factors like interest rates and exchange rates. APT ignores the multiple elements that affect the daily price volatility of stocks and bonds and instead places emphasis on the important variables that drive aggregates in massive portfolios. An intuitive understanding of these forces' impact on portfolio results is attained through their identification. Asset return is heavily influenced by anticipated and unanticipated occurrences.

Empirical Review

Ngari (2016) did a research study on the relationship between interest rate spread and the financial success of Kenyan commercial Banks The census was done in all forty-three registered Kenyan commercial banks and used documented secondary data for six years between 2007 and 2012. The results of the research study showed that interest rates for larger banks find it relatively difficult to raise funds. Linear model data analysis was used to analyze data and ROA was used to measure financial performance in this study. However, the research study covered a study period of six years while the current study covered a long period of ten years, it also used simple and multiple regression analysis and ROE was used to measure the performance of South Sudan's commercial banks. Moreover, the research study was done in Kenya while the current research study was done in South Sudan which presents a contextual gap.

Wambari (2017) carried out a research study on how interest rates affect Kenyan commercial banks' financial performance. All 43 Kenyan commercial banks were included in the study which used an explanatory research design and a census research approach. The statistical software for the social sciences (SPSS) version 20 was utilized for the study's data analysis which also included secondary data and a multiple linear regression model. The research findings were that deposit interest ratio has a negative effect on the commercial banks financial performance while lending rate ratio has a good impact. According to the study's findings, there is a strong correlation between commercial banks' financial performance and their lending rate ratio. The conclusion of the study was that commercial banks are negatively affected by deposit interest ratio. Afzal (2018) conducted research on how interest rate changes affect bank profitability. The study examined annual data from 20 banks operating in Pakistan for a period of seven years, spanning the years 2007 to 2014. In order to assess how interest rate changes (INTC) affect return on assets' (ROA), the results showed that interest rates negatively impacted bank profits. However, the study was carried out in Pakistan which is a developed whereas this study was carried out in South Sudan which is a developing country.

Owusu, Antwi, Banerjee and Antwi (2017) did a research study on the interest rates spread and profitability of commercial banks in South Sudan. The study used ordinary least square regression for a sample of 28 banks. The findings showed that bank spread had a positive impact on South Sudan's commercial banks' profitability, but the relationship was statistically insignificant. The findings showed that although there is a positive association between interest rates and bank profitability although there is

a positive relationship that exist between interest rate and bank profitability. This implies that the bank attempts to increase net interest margin by effective and efficiently increasing interest income and lowering interest expense in order to improve profitability. The increase in ROA encourages banks to raise interest margin because the bank also raises interest margin to meet the increase in operating costs. The study utilized simple and multiple regression analysis as well as use ROE to measure the performance of banks. The study used a sample of 28 banks and employed ordinary least square regression and ROA to measure bank performance.

Kipngetich (2018) did a study on the connection between interest rates and the success of Kenyan commercial banks' finances. Regression models were created with interest rates as the independent variable, financial performance as the dependent variable and ROE as the profitability indicator in order to meet the study's goal. For a five-year period between 2010 and 2015, secondary data was gathered from reports that had already been published. The results of the regression model demonstrate a positive link between interest rates and the monetary performance of Kenyan commercial banks. The current study covered a longer period of ten years as opposed to the previous study which covered a period of five years.

Nyangor (2020) did a research study on the impact of Kenya's Gross Domestic Product on financial performance of Collective Investment Schemes (CIS). Nineteen licensed CIS in Kenya made up the population of the study which employed a casual research design. The research study used quarterly secondary data, which was obtained from the Capital Market Authority, KNBS and CBK for a ten-year period from 2010 to 2019. The results were analyzed using regression analysis based on unit trust, money market funds, balanced funds, equity funds and fixed income funds. The results revealed GDP affects financial performance. The study, however, targeted investment schemes while the current study targets commercial banks.

Zhen Shi and Yung-hu Chiu (2021) did a study on the effect of Gross domestic production on the investment efficiency and financing of China's commercial Banks. From 2021 to 2018, the effectiveness of China's urban commercial banks (UCBs), joint-stock commercial banks (JSCBs) and State-owned commercial banks (SOCBs) was examined. This study combined the Kamel density curve with unfavorable dynamic slacks-based assessment followed by JSCBs while UCBs have the lowest efficiency. The study divided the banks into different categories whereas the current study focused on the South Sudan's commercial banks. Ajayi and Atanda2017) conducted research on how the performance of Nigerian banks is impacted by monetary policy. The study used the Engle-Granger two-step co-integration methodology with a focus on the years 2004 to 2014. The results of the study showed that inflation slightly improved the financial performance of Nigeria banks. However, because the study's major focus was on Nigerian commercial banks, the findings cannot be applied to South Sudan. The study therefore concentrated on South Sudan's listed commercial banks.

Macharia (2013) conducted research on the effects of the global financial crisis on the financial performance of Kenyan banks. The research which concentrated on banks that provided financing revealed that inflation had a negative significant influence on the profitability of numerous banks in Kenya. However, the research study focused on banks that offered mortgage services whereas the study was conducted on commercial banks in South Sudan from 2011 to 2021. Kwakwa (2018) also did a study on the impact of inflation on financial performance of banks in Ghana. The findings indicated that performance is positively but negatively impacted by inflation. However, given that Kwakwa's study was conducted in Ghana, the results may not be applicable to the South Sudan's context. Therefore, this research study tried to address the contextual gap.

Chege (2018) did a study on the relationship between inflation and the financial performance of

Kenyan commercial banks. The research was conducted from 2010 to 2017. Data for the study was collected from the annual reports of Kenya's 44 commercial banks. This study used secondary data and to analyze the relationship between inflation and commercial banks' financial performance, correlation coefficients and coefficients of determination were used to determine the strength and nature of the relationship while the test of significance was used to determine the size of the relationship. The study found that as inflation decreases profit increase. Nevertheless, the study was done on Kenyan Banks between 2010 and 2017 but this research study was conducted on Banks in South Sudan between 2012 and 2021.

Khaled (2019) did a study on the effect of inflation on the financial sector development in Jordan. The study period was between 1993 and 2018. The study population comprised of 50 Commercial banks in Jordan. In order to ascertain the relationship between inflation and financial sector development, secondary data was used in the study. Data analysis on the impact of inflation on the development was done using the coefficient of correlation. The results of the research indicated that there is a positive support of the previous financial sector performance in the current period. The study however was conducted in a developed country, but this research was conducted in a developing country.

Moyo, Delani and Tursoy (2020), did a study to find out the effect of inflation on the financial performance of South African commercial banks for the period between 2003 and2019 to measure the financial performance. ROE was the independent variable whereas the independent variable was inflation. Both the ARDL and DOLS models were applied to the study's objective. The results of the study indicated that a substantial adverse link between ROE and inflation. However, the research study was conducted only on four commercial banks, but this study was conducted in all the Banks in South Sudan.

Pita and Lado (2018) did a study on the relationship between exchange rate and inflation of commercial banks in South Sudan. The research study indicated that neither inflation nor exchange rates were responsible for CPI. The research study concluded that currency depreciation has a detrimental impact on economic performance in South Sudan. Ebaidalla (2014) investigated on how South Sudan's economy is affected by real exchange rate and inflation misalignment. The research was conducted between 1979 and 2009. The research findings found that economic policy affects equilibrium exchange rate significantly while this study covered the period between 2012 and 2021.

Hossin (2020) conducted a research study on the impacts of fluctuations of exchange rate on financial performance of commercial banks in Bangladesh. Empirical and theoretical studies were reviewed on exchange rate and financial performance. World Bank database website and banks' consolidated financial statements provided secondary data. The research study was carried out by using central tendency measures such as descriptive statistics to explain the data. To explain the relationship between Return on Assets (ROA) and exchange rates, correlation analysis was adopted in the study. The study found a negative correlation between exchange rate changes and financial success however was done in a developed country and use ROA to measure performance of the banks while this study was ROE and was conducted in developing countries.

Munyok (2016) conducted research on the effects of exchange rate changes on South Sudan's financial institution performance. The research study found a relationship between exchange rate fluctuations on South Sudan's financial institutions' performance. The study focused only on exchange rate fluctuations and studied all commercial banks; macro- economic variables and financial performance of South Sudan's commercial banks was the focus of the current study. Adam and Crawford (2018) did a study on the exchange rate management in Sot Sudan. According to the report, there is currently an uncomfortable balance between two regimes on the currency rate. Due to

the severity of the impending economic crisis in South Sudan, it is possible that the fixed exchange rate system would disintegrate due to inflation and that the country will return to a dollar- based economy. The current analysis offers suggestions on how the performance of South Sudan's commercial banks can be affected by currency rates.

Chol (2017) conducted a study on the impact of bank stability on the financial performance of commercial banks in South Sudan. The metrics from the CAMEL model served as a reference for measuring stability and its effects on commercial banks' financial performance as assessed by ROA. The CAMEL model served as the fundamental framework for the inquiry. A descriptive research methodology was employed in the research study. South Sudan's 24 commercial banks made up the study's sample population and one senior manager was the focus of the study. The study's approach was mixed as it used both qualitative and quantitative data. While main data was collected using a semi- structured questionnaire, secondary data for the period between 2012- 2017 was taken from audited yearly financial reports. SPSS was used to analyze the data acquired in order to conduct further descriptive and inferential statistical analysis. The results of the study indicated that the financial performance of commercial banks is positively affected by asset quality. In contrast to the study which examined bank performance using return on assets, the current study evaluated the bank performance using return on equity (ROE).

Angelo, Munir and Malenya (2021) did a research study on macroeconomic variables and financial performance of South Sudan's commercial banks. The target population for this study was 30 commercial banks in South Sudan. A purposive sampling method was used. The researcher considered a longitudinal cohort research design. Panel data for the period of 2014 to 2020 collected from the World Bank data, central Bank of South Sudan and the commercial bank's websites were used in the study, face validity was used for the measurement of the validity of the data. Data analysis included multiple regression and descriptive statistics analysis. Other findings that among the macroeconomic factors examined interest rates had a considerably favorable influence on the financial performance of commercial banks in South Sudan whereas exchange rates had a significantly positive effect. The study used secondary data and focus on all the banks in South Sudan.

METHODOLOGY

The study adopted explanatory research design. A census of 29 commercial banks listed in South Sudan that were in operation from 2012 to 2020 was targeted. The audited financial statements of the listed commercial banks served as the source of secondary panel data. Data collection was by use of a document review guide. Data analysis for the study was by use of regression model and correlation. The study was based on Vector autoregressive (VAR) model to assess relationship between macro-economic variables and financial performance of commercial banks.

FINDINGS

Descriptive Statistics

The following table showed descriptive statistics of the research study.

Table 1: Descriptive Statistics

Variables	Observations	Mean	Standard deviation	Minimum	Maximum
ROE	290	0.1996	0.0104	0.1435	0.2301
Interest rate	10	0.1395	0.0065	0.0972	0.1721
Inflation	10	0.8787	0.3696	-0.0010	3.8000
Exchange rate	10	1.1610	0.4170	0.0295	4.3205
GDP growth rate	10	0.0224	0.0708	-0.5133	0.2980

The mean ROE for the dataset was 19.96%, mean interest rate was 13.95%, mean inflation was 87.87%, man exchange rate was 116.1%, while mean GDP growth was 2.24%. The standard deviation for ROE, interest rate, inflation, exchange rate, and GDP growth was 3.28%, 2.05%, 116.87%, 131.85, and 22.39 respectively. This indicates that there was a huge disparity in inflation and exchange rates in the dataset. The lowest inflation rate was -0.1% while the highest was 380%, this is a substantial margin between the two interest rates within a ten-year period. On the other hand, the minimum exchange rate in the dataset was 2.95% while the maximum was 432.05%, this shows a huge disparity in margins which is an illustration of instability in the currency exchange market in South Sudan. The ROE and interest rates have the lowest disparity in the dataset, which could be an indication of stability in these financial variables.

ROE over the years since 2012 there has been a downward trend on return on equity in two phases; between 2012 and 2018 the decrease was gradual. Between 2018 and 2021, ROE decreased rapidly and this shows that the economy of South Sudan was not in good state between the years 2012 to 2021.

The inflation rates over the ten years have experienced two contrary phases, between 2013 and 2016 the rates were increasing but since then to 2022 there has been a decrease. The highest inflation rate during the period was noted in 2016 when it hit 380%. There is an indication that the South Sudan economy was facing hard economic times in 2016 and a sharp increase in inflation rate from 52.8% the previous year to 380%.

Interest rates trend over the ten years has not been consistent as it has experienced fluctuations, the highest interest rate was noted in 2018 at 15.83% while the lowest was in 2016 at 9.725.

Exchange rate over the ten years has experienced three phases, between 2012 and 2014 the rates were constant; between 2015 to 2020 there was a steady rise in exchange rate and between 2020 to 2021it experienced a sharp spike from 177.28% to 432.05%. There is an indication that the South Sudanese pound became very weak between the year 2020 to 2021 from 177.28% to 432.05%.

GDP growth in the 10 years period has experienced negative growth thrice namely 2012, 2016, and 2017, with 2012 being the highest negative growth at -51.33%. However, positive growth has been observed in the other years, with 2013 registering the highest positive growth at 29.8% followed closely by 2014 at 27.97%.

Normality Test Normality test was undertaken using Shapiro -Wilk

The results of the Shapiro-Wilk test's p values were higher than 0.05, indicating that the null hypothesis that the data are normally distributed was not rejected. Not rejecting the null hypothesis indicates that population in which the data was collected was normally distributed for all the variables in the study. Although the data for GDP is not normally distribute it does not affect the analysis.

Table 2: Shapiro-Wilk

	Kolmogorov- Smirnov			Shapiro-Wilk		
	Statistic	df	sig	Statistic	dfsig	
Financial Performance.	0.316	40	0.004	0.546	40	0.000
Interest rate	0.124	40	0.300	0.845	40	0.569
GDP	0.276	40	0.132	0.847	40	0.046
Inflation rate	0.245	40	0.163	0.765	40	0.079
Exchange rate	0.219	40	0.188	0.769	40	0.107

Autocorrelation Test

Autocorrelation test was carried out using Durbin Watson test as shown in table 3 below

Table 3: Autocorrelation Test Results

Model	R	R squire	Adjusted Squire	Std. Error of the estimate	Durbin Watson
1	0.929	0.798	0.698	0.18904	2.312

A. predictors: (Constant), Interest rate, GDP, Inflation rate and Exchange rate

The study's findings, which were presented in Table 3, revealed that a negative correlation was present as indicated by the Durbin Watson value of 2.312. Since the adjusted R square was 0.698 it was concluded that 69.8% of variability in financial performance is explained by macroeconomic variables.

Heteroscedasticity Test

Heteroscedasticity was tested using Breusch- Pagan test and the results were as shown in Table 4 below.

Table 4: Heteroscedasticity Test

Test Statistic	**Degree of Freedom**	**Sig.**
5.352	8	0.537

Source: ResearchData (2023)

According to the test's research findings which are presented in Table 4, the test statistics is 5.352 with a p-value of 0.537. The null hypothesis was not rejected because the p- value was greater than 0.05 and it was concluded that the obtained data did not exhibit heteroscedasticity, satisfying the regression assumption

Cointegration Test

The study used Johansen test to test co-integration. Johansen test of cointegration allows for testing unrestricted and also restricted versions of cointegration vectors as well as adjustment parameters' speed. The results of Johnson test for cointegration are presented in Table 5 below.

Table 5: Cointegration Test

Trend sample	**Constant 2012-20121**		**Lags 2**
Maximum rank		**Trace statistic**	**5% critical value**
1		1479.331	0.0046
2		345.7652	0.0231
3		36.0938	1.7130
4		19.8443	0.3751
5		7.16753	0.0851

Null hypothesis is that there is no co-integration in the data set. If trace statistic is greater than 5% critical value, null hypothesis is rejected. From the results presented in Table 5, the trace statistic in the first rank, which is 1 (0.0046) was greater than critical value of 1479. 331 and hence null hypothesis was rejected which implied there is co-integration. The results further show there is one co-integration as the trace statistic for Rank 3 (1.7130) was greater than the critical value (36.0938). This implies that vector error correction model should be used instead of Vector Autoregression model. According to Wilson (2010), vector error correction model is preferred when there is co-integration.

Regression Analysis

A regression analysis was done to determine the relationship between interest rate, inflation, exchange rate and GDP and financial performance measured by ROE and Table 6 summarizes the findings.

Table 6: First Lag

Equation	Parms	RMSE	R-sq	chi2	P>chi2
ROE	6	0.0046	0.9946	1479.331	0.0000
Interest Rate	6	0.0231	0.7127	19.84431	0.0013
Inflation	6	1.7130	0.4726	7.16753	0.2085
Exchange rate	6	0.3751	0.9774	345.7652	0.0000
GDP	6	0.0851	0.8186	36.09388	0.0000

Source: Research Data (2023)

Table 7: Second Lag

	Coefficient	Std.	Error	Z	p>/z/	95% Conf. Interval
ROE	-. 7160162	.278461	-2.57	0.010	-1.26179	-.1702428
Interest Rate	.7512486	.2564767	2.93	0.003	.2485634	1.253934
Inflation	.0224014	.0046612	4.81	0.000	.0132657	.0315371
Exchange Rate	-.0737376	.0082857	-8.90	0.000	-.0599772	-.0574981
GDP	-.0087016	.0043321	2.01	0.045	.0002108	.0171924
Cons	.2724424	.03142	8.65	0.000	.2107388	.334146

Source: Research Data (2023)

A regression analysis was done to determine the relationship between interest rate, inflation, exchange rate and GDP and financial performance measured by ROE. The resulting regression model used to explain the ROE of banks in South Sudan economy was: ROE = 0.2724 + 0.7512 (Interest Rate) + 0.0224 (Inflation Rate) - 0.0737 (Exchange Rate) + 0.0087 (GDP)

The vector Autoregression reported that inflation was not statistically significant since the p-value was greater than the alpha value of 0.05. The p-value of Interest Rate was .003 which is less than the alpha value of .05. Hence, the null hypothesis that the interest rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Interest Rate has significant effect on financial performance of commercial banks in South Sudan.

The p-value of GDP was .045 which is less than the alpha value of .05. Thus, the null hypothesis that the GDP has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Gross Domestic Product has significant effect on financial performance of commercial banks in South Sudan.

The p-value of Inflation Rate was .0000 which is less than the alpha value of .05. Hence the null hypothesis that the inflation rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Inflation Rate has significant effect on financial performance of commercial banks in South Sudan.

The p-value of Exchange Rate was .003 which is less than the alpha value of .05. Therefore, the null hypothesis that the exchange rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Exchange Rate has significant effect on financial performance of commercial banks in South Sudan. The resulting regression model that can be used to explain the ROE of banks in South Sudan economy was:

ROE = 0.2724 + 0.7512 (Interest Rate) + 0.0224 (Inflation Rate) - 0.0737 (Exchange Rate) + 0.0087 (GDP)

After running the vector autoregression using Stata, it was observed that the statistical tool considered 2 lags which tend to utilize the sample for dataset starting 2014 to 2021. This translates to 8 observations in the dataset. After running the first lag, the vector autoregression reported that inflation was not statistically significant since the p-value was greater than the alpha value of 0.05. The second lag reported that all the variables were statistically significant at a confidence level of .05.

The p-value of Interest Rate was .003 which is less than the alpha value of .05. Hence, the null hypothesis that the interest rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Interest Rate has significant effect on financial performance of commercial banks in South Sudan. Moreover, p-value of GDP was .045 which is less than the alpha value of .05. The findings agree with those of Wambari (2017) and Owusu (2017) who found that interest rate had negative effect on the financial performance of commercial banks in Kenya and South Sudan respectively.

Thus, the null hypothesis that the GDP has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Gross Domestic Product has significant effect on financial performance of commercial banks in South Sudan. The findings agree with those of Nyangor (2020) and Zhen Shi and Yung-hu Chiu (2021) who found out that GDP have a positive effect on financial performance of commercial banks in South Sudan and in China respectively.

The p-value of Inflation Rate was .0000 which is less than the alpha value of .05. Hence, the null hypothesis that the inflation rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study Inflation Rate has significant effect on financial performance of commercial banks in South Sudan. The findings agree with those of Ajayi and Atanda (2017) and Macharia (2013) who found out that Inflation have a negative effect on financial performance of commercial banks in Nigeria and in Kenya respectively.

Lastly, the p-value of Exchange Rate was .003 which is less than the alpha value of .05. The findings agree with those of Macharia (2013) and Kwakwa (2018) who found out that Inflation rate have a negative significant influence on financial performance of commercial banks in Kenya and Ghana respectively. Therefore, the null hypothesis that the exchange rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Exchange Rate has significant effect on financial performance of commercial banks in South Sudan. The finding does not agree with those of Munyok (2016) and Hossin (2020) who found out the relationship between exchange rate and financial performance is negative.

CONCLUSION AND RECOMMENDATIONS

The study's first goal was to determine how interest rates affected South Sudan's commercial banks' financial performance. Results indicated that if all other variables remained constant and the interest rate rose by one unit, South Sudan's commercial banks would experience a decline in their financial performance. Results further showed that the interest rate was statistically significant on financial performance of commercial banks in South Sudan. Hence, the null hypothesis the null hypothesis that the interest rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Interest Rate has significant effect on financial performance of commercial banks in South Sudan.

The study's second objective was to determine how South Sudan's commercial banks' financial performance was impacted by GDP. The findings demonstrated that the financial performance of commercial banks would improve if all other variables were held constant and GDP increased by one. Further, results showed that GDP has a positive effect on financial performance of commercial banks. This shows that GDP has significant effect on

financial performance of commercial banks in South Sudan. The null hypothesis that the GDP has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Gross Domestic Product has significant effect on financial performance of commercial banks in South Sudan.

The third objective of the study was to investigate how South Sudan's commercial banks' financial performance is impacted by inflation. Results indicated that if all other variables remained constant and the rate of inflation rose by one-unit, commercial banks would see an improvement in their financial performance. The null hypothesis that the inflation rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study concluded that Inflation Rate has significant effect on financial performance of commercial banks in South Sudan.

The fourth objective was to examine the impact of exchange rates on the financial performance of South Sudan's commercial banks. The findings suggested that the financial performance of commercial banks would decline if all other variables were held constant and the exchange rate rose by one unit. Results further showed that the exchange rate has a statistically significant negative effect on financial performance of Commercial banks. Exchange Rate therefore has significant effect on financial performance of commercial banks in South Sudan. The null hypothesis that the exchange rate has no significant effect on financial performance of commercial banks in South Sudan was rejected and the study that Exchange Rate has significant effect on financial performance of commercial banks in South Sudan.

Conclusion

South Sudan's commercial banks have experienced shortcomings in performance. Changes in macroeconomic indicators including the inflation rate, GDP, exchange rate, and interest rate have been linked to the recent downturn in financial performance. The study was driven by the need to comprehend the impact of these macroeconomic factors on the financial performance of commercial banks. All of the commercial banks listed by South Sudan's central bank were the subject of the study. The financial statement of the central bank served as the source of secondary data.

The study concluded that the interest rate, GDP, and exchange rates affect the financial performance of commercial banks because they affect the total returns of commercial banks. This study discovered that interest, GDP, and exchange rate rates have a significant impact on the financial performance of commercial banks. Accordingly, raising the interest rate and exchange rate will have a detrimental impact on the commercial banks' financial performance.

The study found that the inflation rate has a negative impact on the financial performance of commercial banks and came to the conclusion that when the inflation rate is high, commercial banks' financial health will improve. Therefore, a rise in inflation will have a favorable impact on the financial health of commercial banks.

Recommendations

The study found that South Sudan’s commercial banks perform poorly financially as a result of high interest rates. Based on this finding, the study suggests that the government should use macroeconomic regulators to control interest rates for commercial banks based on changes in inflation rates. Doing this will help to ensure that commercial banks can effectively and sustainably provide financial intermediation. As a policy recommendation, the management of commercial banks should set interest rate level for both lending and deposits which is competitive so as to attract more customers and lead to improved performance. Commercial banks should design dynamic interest rate policies which would lead to growth by attracting many customers. The study also discovered that the inflation rate has an impact on the financial performance of South Sudan’s commercial banks.

In reference to this finding, the study recommended that commercial bank management committees regularly monitor the inflation rate in order to alter their lending products and services in line with the inflation rate. As a policy recommendation, the study recommends that the management of commercial banks should diversify its activities like availing loans at different rate of percentage depending on the amount taken so as to take advantage when inflation rate is favored.

The study also found that the exchange rate had a detrimental impact on the financial performance of South Sudanese commercial banks. Based on this finding, the study recommends that the government regulate exchange rates in such a way that they lead to economic growth and in favour of commercial banks, thereby facilitating financial stability and thus increasing economic growth. As a policy recommendation, the management of commercial banks should use rates of exchange as a conditioning variable for counter-inflationary policies. The management should use the exchange rate information positively as it was found to convey information on the fundamentals in the economy. Commercial banks should save huge foreign exchange reserves to enhance its performance.

The study concluded that GDP has a beneficial effect on the financial performance of South Sudan's commercial banks. In light of this conclusion, the study suggest that the government should guarantee that the business environment is favourable to encouraging investment in commercial banks as they have a beneficial effect on GDP through job creation. As a policy recommendation, the supervisory body of macroeconomic variable like GDP should ensure viable environment for micro banking. They should regulate the variable in such a way that they lead the economy towards the growth and favour of commercial banks. This will favour the financial sector by facilitating better the financial stability thus increasing economic growth.

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