THE IMPACT OF CREDIT RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF BANKING SECTOR IN SUDAN

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ABSTRACT

Purpose: *This study's objective is to examine credit risk management effect on financial performance of Sudanese banking sector.*
Design/Methodology/Approach: *Every bank's financial reports for 10-year period, from 2006 to 2015 had been employed for the study. To estimate the model, panel regression method was used. For performance indicator, ROE (Return on Equity) was used. Meanwhile, for credit risk management indicators, NPL (Non-Performing Loans) and CAR (Capital Adequacy Ratio) were utilized.*
Findings: *The results showed that the profitability of Sudanese banks is significantly influenced by credit risk management. The evidence shows that 57% of profitability in banks is affected by the change in capital adequacy ratio and non-preforming loans. The study also shows there is a positive relationship between the banks' financial performance and capital adequacy ratio, but the correlation is not significant. Furthermore, the correlation between the banks' financial performance and non-performing loans is significant, but negative.*
Practical Implications: *The percentage of the impact of NPL (non-performing loans) and CAR (capital adequacy ratio) on the banks' financial performance is 57%; which means profitability of banks is impacted by the changes in NPL and CAR.*
Originality/Value: *This study helps filling the aperture in the empirical evidence of how credit risk management impacts the bank's financial performance process in Sudan.*

Keywords: Credit Risk, Capital Adequacy, Non-Performing Loan, Banking Sector, Sudan

INTRODUCTION

The financial institutions, including banks are important basic elements to the economy and business in any country. This is because financial institutions have a significant function in a country's economic growth. There is no doubt that the technological development and the information revolution that accompany economic globalization have resulted in significant changes, and together with their various inherent risks are affecting the activities of banks (Chih-Ching, 2012).

The Basel Committee on Banking Supervision has issued numerous consulted documents that give a comprehensive list of risks based on the fundamental elements of sound capital assessment. This is supported by the revised framework of Basel 11, (2006). Accordingly, risks can be classified into the following types of risks: credit, liquidity, market, operation, reputation, and legal (Koch & MacDonald, 2014). This research focuses on credit risk. This is because banks are relying on income from the credit granted to their customers. Credit risk refers to the loss of income arising from counterparty's delay in settlement, or in full

as mentioned in the contractual agreement. The banks' profit is affected by credit risk. Hence, to possess a robust credit risk management will not only assist in the banks' profitability, but will also lead to stable system and efficient capital allocation (Psillaki, Tsolas & Margaritis, 2010). The banks will incur a significant amount of loss in income even when there are very few customers defaulting on their financing facilities (Gestel & Baesems, 2008).

The measure for the capital of a bank is capital adequacy ratio. It is denoted as percentage to the FI's risk-weighted credit exposure. In ensuring that the FIs could withstand a certain degree of losses prior to being insolvent, an international benchmark has been created. The minimum CAR will protect the banks' depositors and encourage stable and efficient financial structure. Over the past decade, NPLs are becoming a trend in banks. The World Bank has mentioned that when banks take NPL as part of their performance measures, the reduced NPLs does not only improve their operation and profit performance, but will also lead to improved risk management. Banks are now realizing that NPL figures do not only improve their corporate image, but could also generate profit. When NPL is adopted as an indicator by many banks, it will become widespread and becomes an integral component for banks' core competitiveness. In short, NPL figures are now considered as vital for the performance of banks (Day-Yang et al., 2017). During the recent period, Sudanese banking system has witnessed a significant development, such as the emergence of new banks and the investment of foreign capital like from the Arabs into Sudan. Accordingly, the Sudanese banks have witnessed many transformations in the quality and quantity of risk management and financial performance. The financial credit risk is becoming a threat to the banking sector in Sudan; which in turn has an impact on both shareholders and bank performance. In view that credit risk management and financial performance are correlated, this research will examine the impact of credit risk management on financial performance in the Sudanese banks. Hence, the objective of this research paper is to analyse credit risk management influence towards financial performance of the Sudanese banking sector. This study also intends to answer the questions: What is the impact of credit risk management on financial performance in Sudanese banking sector? What is the correlation between NPL (non-performing loan) and ROE in Sudanese banks? Is there a correlation between CAR and ROE in Sudanese banks? The following section is devoted to discussing the literature related to banks' financial performance and risk management. This is followed by reviewing the operational and structural aspects of IBs operating in Sudan. Next, hypotheses development and research methodology are outlined. Then, this is followed by presenting the findings and discussion. This study ends with conclusion.

LITERATURE REVIEW

Different businesses and academics have various views regarding credit risk's definition. The definition provided by Basel (1999) has been agreed upon by most academics. The definition given is the possibility of default by counter party or debtor in fulfilling his /her contractual obligation as per the agreed terms. To have a robust management in credit risk for the creation of quality loan portfolio is vital for the bank and economy's excellent performance (Charles & Kenneth, 2013). There have been various studies on credit risk management practiced by financial institutions. The significant part of these studies concentrated on general credit risk management. Only a relatively few studies concentrated on credit risk management impact on Sharia-compliant banks' financial performance like those banks operating in Sudan. Philippe (2009) had analyzed the impact of risk management in reducing credit crisis. This study found that the application of risk management was not bad, but it does not guarantee business loss or bad luck. Philippe (2009) emphasized that business management system needs continuous improvement with significant amount of tests, and analyses to measure modern risks on a functional basis, in which reinforces the importance of risk. Poudel (2012) investigated credit risk management impact on Nepalese commercial banks' financial performance. The researcher used descriptive research that mainly depends on information of the current status of

an event and its description. The results indicate that to predict a bank's financial performance, credit risk management could be the vital predictor. Therefore, a bank's success is dependent upon its risk management. Poudel (2012) discovered that an indicator of risk management is default rate. Credit risk management is important to the performance of banks in view that both are significantly correlated.

In the same vein, Fredrick (2012) had analyzed credit risk management influence on the financial performance of Kenya's commercial banks. The researcher adopted the causal research approach to address the research's problem using secondary data obtained from the central bank. The research found that the department of the risk management through the utilization of CAMEL model indicators has a significant influence on Kenyan commercial banks' performance. Fredrick (2012) concluded that the CAMEL model could be employed as an alternative to credit risk management. The research recommended that commercial banks to ratify the credit policies and practices to suit their own needs to reduce losses from bad loans. Likewise, Isanzu (2017) analyzed the influence on Chinese banks' financial performance by credit risk. This study used secondary data, which were gathered from China's five biggest banks. The research had discovered that NPL and CAR as credit risk measures do significantly affect financial performance.

Abbas & Ahmad (2020) examined risk management practices in Pakistani financial institutions through questionnaire survey for the assessment of various characteristics of risk management: *i.e.,* risk recognition, risk monitoring, risk evaluation and analyses, risk management practices, credit risk assessment and liquidity risk analysis. This study applied various analytical models, such as Pearson correlation and Regression model for evaluation. However, the outcome of this analysis illustrated that, Pakistani financial institutions are resourceful in terms of monitoring and understanding credit risk analysis. Abbas & Ahmad (2020) concluded that for higher performance and revenue stream, banking institutions are advised to adopt rigorous risk management practices. In addition, bank employees need sufficient financial training to enable them to perform risk management practices and gain competitive market position.

Lastly, Drager, et al., (2020) had utilized the data from a survey conducted in German banks that are of small and medium sizes. The research examined myriad of dimensions in risk management both in the long-run and short-run periods. The study had specifically examined the impact of an increase of 200-bp on the level of interest. The research discovered that during the first year, the banks' portfolios of bonds impaired much more significantly as compared to the decrease in their income from the net interest. The study also found that the banks reduced the impact of write-downs through hidden reserve liquidation; and the banks that employed interest derivatives will have less damage in bond portfolios. Additionally, the research also discovered that the exposure of the banks to credit and interest rate risks is remunerated. Also, the banks tried to have a stable mid-term interest margin that is exposed to risk in interest rate. The banks will also behave as though they possess a budget in risks where they could do an allocation to credit risk or interest-rate risk.

In the context of the Sudan, Yahya (2005) examined the risks of non-payment on the Sudanese commercial banks' ability to continue providing financing. This study found that there is an inverse relationship between payment and liquidity of the banks during the period from 2001 to 2007. This represents part of the period when the deflationary financial and monetary policy implemented affected the level of liquidity in the national economy as whole, and this was reflected in the banking system. Abdalrahim (2006) investigated the impact of risk management in the Sudanese banks on solving the liquidity problem with a focus on commercial banks. The researcher found that there is inefficiency in risk management in the banks, specifically in controlling and reducing their liquidity risks. They also found that risk management influences organizations' objective and helps reduce liquidity risk. Abdalrahim (2006) suggested that banks need to adopt risk management practices through policies and plans.

The banks also need to have clear duties and tasks in addition to training and qualifying the officials in risk management.

Alnail (2010) aimed to identify and analyze the influence of financial risk on performance efficiency in Sudanese commercial banks. The research adopted case study method and used analytical descriptive approach. The main findings of this study are as follows: concentrating on specific types of clients and sectors is considered to be one of the main reasons of financial risks. There is a significant amount of bad debt being written off from the banks' incomes that negatively affecting profitability and liquidity status. Also, finance risks are negatively affecting the commercial banks' performance in Sudan. This may in turn lead to the lack of ability to meet the commitment toward different shareholders and the lack of banks' commitment in applying the directives issued by the Central Bank of Sudan in respect to credit facilities. Alnail (2010) suggested that commercial banks should be committed to the application of the directives issued by Sudan's central bank in respect to the granting of facilities; *i.e.*, in terms of activating and enhancing the rule of risk management and applying risk control before granting financing to their clients. There should also be the establishment of financing risk guarantee fund that is to be shared between the commercial banks, as well as a control mechanism and an-depth study on the client's status and his/her application before granting the facility.

Abuzar & Ahmed (2013) examined the general performance attributes among Sudanese IBs. The research had conducted factor analysis on financial ratios commonly employed by banks in their financial analyses. The research discovered that there are six variables explaining the variation in financial ratios. A comparative study was done by Abdulfattah, Zairy & Hayati (2017) on the determinants of liquidity risk in Islamic in Sudan and Malaysia. This study used ordinary least regression analysis and panel data techniques. The study concluded that, management efficiency proxied by deployment ratio is a typical variable in the two situations. Abdo & Onour (2020) assessed the determinants of liquidity risk in Islamic banking system in Sudan using panel data regression. The findings of this study indicate that the correlation of liquidity risk and profit coefficient is significant and positive. Although, many studies have dealt with credit risk management's impact on financial performance of banks operating in different countries, which were conducted in a non-Islamic system, this research will be conducted in the Islamic context. Those studies focus on risk management in general, however, this study emphasizes on credit risk management and covers all involved in the Sudanese banking sector.

STRUCTURE AND OPERATION OF THE SUDANESE ISLAMIC BANKING

The Sudanese Islamic Banking's (SIB) operation and structure differ from the conventional banks. The SIB operates based on the Shariah principles, while the conventional system does not. This means, the key objective of IBs is investing the funds deposited with them using the Profit and Loss Sharing (PLS) method. Meanwhile, the traditional banking applies the interest rate approach (Çizakça, 1996). Therefore, the main goal of IBs is to eliminate all types of interest in their transactions and to conduct their operations within the Halal and fair (permissible/lawful) profit dimension. Also, they are to give zakah, prohibit monopoly, collaborate for societal benefits and develop Shariah-compliant business (Haron, 1993).

There are 37 banks that are currently in operation in Sudan. The central bank of Sudan or Bank of Sudan is the leader to all the banks. It is the leading bank that ensures the compliance to Islamic principles in the operation of Sudanese banks. Despite the agreement of the Bank of Sudan on the operation and financing methods for all Sudanese IBs, each of the banks has its own adoption approach. This may be caused by the banks' different aims and objectives. The framework of SIB is consistent with the model introduced in 1963 by Ahamd El-Najjar, an Egyptian economist. The key element of SIB is the incorporation of traditional Mudarabah into the contemporary intricate model for the creation of banking system that is free from interest. The SIB structure is classified under the economic sector where the financial service categories

are based upon specific Islamic finance method or instrument. The SIB generally adopts several financial methods in the products, like Musharaka, Mudarabah and Salam. All of them operate similarly as the traditional banks through the provision of three forms of accounts, *i.e.*, investment, savings and current accounts.

HYPOTHESES DEVELOPMENT

Banks' risks are minimized by their credit risk management, in which the risk rate of return is adjusted through the monitoring of credit risk exposure to protect banks from the negative impact of risks. The hypotheses of this study revolve around the relationship between financial performance measured by Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL) and Return on Equity (ROE).

H_{01} *The correlation of capital adequacy ratio and financial performance of Sudanese banks is not significant*

H_{02} *The correlation of non-performing loans and financial performance of Sudanese banks is not significant*

RESEARCH METHODOLOGY

This paper uses the design of historical and descriptive research approach. The sample covers the banking sector in Sudan during the period from 2006 to 2015. Secondary data were used in the study. Information is gathered from annual published and non-published financial statements and reports, as well as from trusted internet websites. The Statistical Package for Social Sciences (SPSS) was used to analyze the data. Also, the regression model was estimated for the correlations between independent and dependent variables. This study covers the financial statements for the period from 2006 to 2015. The ratios of Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL) and Return on Equity (ROE) were calculated for the statistical model to examine the magnitude of credit risk management in affecting the profitability of the bank.

The model:

$$Y=B_o+B_1 X_1+B_2 X_2+u_i$$

Where:
β_0=is a constant term, B1 and B2 are coefficient of independent variables
Y=Profitability (ROE) (the dependent variable)
X_1=Capital adequacy ratio (CAR)
X_2=Non-performing loans (NPL)

FINDINGS AND DISCUSSION

To measure credit risk management impact on banks' financial performance, the study depends on secondary data published in the Central Bank of Sudan's report and the banks' magazines, as well as some previous studies. The data of credit risk measures, *i.e.*, the Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL); and the financial performance measure, *i.e.*, Return on Equity (ROE) during the period 2006–2015 are presented (see Table 1).

Table 1
ROE, CAR, AND NPL

Year	ROE	CAR	NPL
2006	35.4	19.7	19
2007	26.5	22	26

2008	23.3	10.5	22
2009	25.5	7.1	2.1
2010	26.5	10	14.1
2011	28.8	13	12.6
2012	36.5	12	11.9
2013	29.6	16.6	8.4
2014	33.7	18	7.1
2015	37.1	20.2	5.1

Table 1 displays three ratios. ROE measures banks' financial performance, while CAR and NPL refer to credit risk management. Meanwhile, return on equity is a dependent variable, and the CAR (Capital Adequacy Ratio) and NPL (Non-Performing Loans) are independent variables. The Return on Equity (ROE) which measures financial performance recorded a maximum rate of 37.1% in 2015 while the minimum is 23.3% in 2008. The high ROE means a rise in earnings per share, indicating the ability of banks to use their capital and other resources efficiently.

Capital Adequacy Ratio (CAR) scored a maximum value of 22% in 2007, and the minimum is 7.1 % in 2009. Moreover, the high capital adequacy ratio in some years is a good predictor to the financial solvency of Sudanese banks and the decline in the index in certain years is due to the macroeconomic condition effects. Non-Performing Loans (NPL) reached maximum rate of 26% in 2007, while the minimum is 5.1% in the year 2015, this decline in NPL is a good indicator. This shows that the banks are proactive in addressing their NPL problems. Multiple regressions are generally used for an in-depth analysis on the correlations of the variables. The paper had utilized this method as we need to check for spurious correlations in view that our data have non-constant variances and means.

Descriptive Statistics

To summarize the frequency of data, descriptive statistics are usually employed. Frequency analysis was conducted in answering the question of what is the impact of CRM on Sudanese banks' financial performance. For this purpose, SPSS statistics will be calculating the standard deviation and mean. Meanwhile, the descriptive statistics will give a summary on the measures and the sample (Table 2).

Table 2
DESCRIPTIVE STATISTICS

Variable	N	Minimum	Maximum	Mean	Std.Error	Std.Deviation
ROE	10	23.3	37.1	30.29	1.58433	5.01009
CAR	10	7.1	22	14.91	1.59955	5.05821
NPL	10	5.1	26	14.72	2.21454	7.00298
Valid N listwise	10					

The descriptive statistics show that the average rate for profitability (ROE) is 30.29. Meanwhile, the standard deviation is 5.1 with maximum rate of 37.1 in the year 2015 and minimum rate of 23.3 in the year 2008. It is known that the higher return on equity ratio indicates an increase in profitability of banks, and accordingly strengthen the safety and financial performance. It is observed that the increase in the standard deviation of the return on equity ratio over the studied years is an indication of a sharp return fluctuation. As such, this evidenced that the risks are high in the Sudanese banks. Concerning the results of the descriptive statistics, the average rate of Capital Adequacy Ratio (CAR) is 14.91 with maximum of 22 in

2007 and minimum of 7.1 in 2009; and the standard deviation is 5.05. Meanwhile, for the Non-Performing Loans (NPL), the average rate is equal to 14.72, which is higher than the default ratio allowed internationally by Basel. According to the standards committee, the benchmark is 6%, so this is a bad indictor. It shows that there is high default risk in the Sudanese banks. In addition, the high standard deviation value for non-performing loans of 7% indicates sharp instability during the period studied where this adds to default risks. The maximum rate NPL equals to 26, and minimum average equals to 5.10.

Correlation

This section shows the study's independent variables as well as their correlations with the banks' performance; which are shown through NPL and CAR. For the correlations' direction and magnitude, the Pearson correlation coefficient is used. The value will indicate the signs and strength. The other objective is the testing of multi-linearity issue, *i.e.,* whether the variables have high correlation with one another.

Table 3
CORRELATIONS

	ROE	CAR	NPL
Person correlation	1	0.506	-0.638
ROE Sig.(tailed)		0.136	0.047
N	10	10	10
Person correlation	0.506	1	-0.137
CAR Sig.(2-tailed)	0.136		0.707
N	10	10	10
Person correlation	-0.638	-0.137	1
NPL Sig.(2-tailed)	0.047	0.707	
N	10	10	10

The significance of the correlation between independent and dependent variables is shown in Table 3. It shows that the CAR and financial performance have a positive association. Nonetheless, it is weak and has no statistical significance (p-value: 0.05). The association between NPL and financial performance is also negative where the Pearson correlation is 0.046 (does not exceed 0.05).

Panel Data Results

The multiple linear regression approach was used in explaining the relationship type between dependent variable, *i.e.*, ROE, and the independent variables, *i.e.*, CAR and NPL. These independent variables are employed for credit risk estimation. Table 4 displays the impact magnitude of CAR and NPL on the banks' financial performance.

Linear regression model in accordance to linear function is depicted below:

$$\boldsymbol{Y = \beta_0 + \beta_1 X1 + \beta_2 X2 \ + u_i}$$

Where:
β_0 is a constant term, B1 and B2 are coefficients of independent variables
Y=Profitability (ROE) (the dependent variable)
X_1=Capital adequacy ratio (CAR)
X_2=Non-performing loans (NPL)
U_i=error

In developing the linear regression model in the form, Predicted Y=b0+b1X1, b0, b1 and b2 need to be calculated. The following is given by the SPSS.

Table 4
MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.755[a]	0.571	0.448	3.65647

Table 4 displays the correlation's coefficient and adjusted limiting factor. The correlation of the dependent and independent variables is 0.75, whereby this indicates that there is a relationship between the financial performance, CAR and NPL. Additionally, the table shows that R^2 is equal to 57 %. This means CAR and NPL affect financial performance by 57%, and 43% represent other factors that are not included in the study.

Analyses Of Variance (ANOVA)

An ANOVA test is a way to find out whether the Regression analysis results are significant. In other words, it helps to figure out if the null hypothesis is to be rejected or accepted. To test the model's significance, variance analysis was used. Table 5 shows the analysis.

Table 5
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1320321	2	66.16	4.948	0.046
	Residual	93.588	7	13.37		
	Total	225.909	9			

Table 5 reflects the result of (F- Statistics test); the P-value is less than (0.05)<(0.046), which means that particular variables are significantly correlated and the overall model is at 5% level of significance. To see the credit risk management's impact on the banks' financial performance, ANOVA was used.

Hypotheses:

H_{01} *The correlation of capital adequacy ratio and financial performance is not significant for Sudanese banks*

H_{02} *The correlation of non-performing loan and financial performance is not significant for Sudanese banks*

The rule-of thumb is:

Reject if sig. <0.05
Accept if sig. >0.05

Table 6
SUMMARY OF ANOVA TEST

Performance measure	Hypothesis	Decision	Comment
Capital adequacy ratio	The correlation of capital adequacy ratio and financial performance is not significant for Sudanese banks	Rejected	0.126 > 0.05

Non-performing loans	The correlation of non-performing loan and financial performance is not significant for Sudanese banks	Accepted	0.040 < 0.05

Table 7
REGRESSION ANALYSIS

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	30.22	5.018		6.022	0.001
CAR	0.408	0.248	0.412	1.643	0.126
NPL	-0.409	0.179	-0.571	-2.278	0.04

Table 7 indicates the regression output for a regression function using Profitability (ROE) for the dependent variable; and the explanatory variables are Capital adequacy ratio (CAR) and Non-Performing Loans (NPL). Consider the p-value, (0.040). Here this study accepts the hypothesis of a statistically significant correlation between Profitability (ROE) and Non-Performing Loans (NPL) at 5% significance level. However, the negative sign indicates that when Non-performing loan decreases, Profitability rates increase. The p-value, (0.126), and here we would reject the hypothesis that the correlation between Profitability (ROE) and Capital Adequacy Ratio (CAR) is not significant statistically.

$$y = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \varepsilon$$

$$y=30.220 +0.408x_1 -0.409x_2$$

Where:
Y=financial performance
X1=capital adequacy ratio
X2=non-performing loans

Finally, the findings indicate that the correlation of profitability and NPL is significant. The p-value from the coefficient is 0.040, which provides a very strong evidence for the relationship. However, the correlation of profitability and capital adequacy ratio is not significant. The p-value from the coefficient is 0.126, which is considered very weak evidence for a relationship against identical result appearing in the ANOVA table. Finally the value R^2 is equal to 57% where it provides the evidence that there are other factors influencing profitability to be considered (43%).

For the CAR, the first hypothesis is rejected as its p-value exceeds 0.05. Therefore, we can say there is statistically significant difference between financial performance and capital adequacy ratio. However, this finding differs from other studies such as Ara, et al., (2009); Tibebu (2011); Sami & Magda (2009). These studies found that the correlation between ROE and CAR is positive. It is normal to assume that CAR will internalize the risk, and therefore funding cost is lessening and consequently support high ROE. Nonetheless, there are other studies that discover ROE and CAR have no correlation (Kithinji, 2010). Concerning the non-performing loans, the p-value<0.05. As such, the second hypothesis of there is significant difference in NPL and financial performance in Sudanese banks is accepted. The negative correlation between NPL and ROE is similar to previous research (Kargi, 2011; Epure & Lafuente, 2013; Ara et al., 2009; Felix & Claudine, 2008). All the said studies discovered an inverse association between ROE and NPL.

Through this theoretical model, it can be said that NPL reflects the financing quality of the banks. The banks' exposure to default risk or deferred payment is due to their borrowers.

The banks' main activity is giving out loans. The banks make their profit from the borrowing and depositing activities. When there are NPLs, there are losses to the banks. A high NPLR indicates a high loss; in which it significantly impacts the bank's availability of funds for further financing activities. This consequently impacts the banks' investment efficiency and further affecting their profits. Low NPL means low risk and low deposit rate, and positively impacting the operation of the banks. Therefore, high NPL figure will negatively impact banks' profit.

CONCLUSION

The creation of credit is the banks' key activity. However, the banks are vulnerable to credit risk when the borrowers failed their commitment in paying back the banks. Additionally, the banks have to recognize and manage their credit risk wisely as this will impact their profit. This is because this will consequently cause crisis, and economic systematic crisis. The main findings of this study are as follows: The percentage of the impact of CAR and NPL on banks' financial performance is (57%), which means 57% of banks' profitability is affected by the change in CAR and NPL. The relationship between CAR and banks' financial performance is positive but not significant. The relationship between NPL and the bank's financial performance is negative but significant. There are other factors, which are not being investigated by this study where they contribute significantly (43%) to the banks' performance. The effect of NPL is more significant as compared to the effect of CAR on the financial performance of the banks. Capital adequacy does not only improve the banks' financial performance, it also represents the first line of defense against risks.

In view of the study results, we propose the followings: Capital adequacy ratio needs to be effectively addressed. The Sudanese banks must increase their capital to face risks and absorb credit losses. In addition, it is also proposed that the Sudanese banks to set-up a strong and effective CRM unit through risk management best practices to improve their CAR and decrease NPLs. It is important to also give some concern towards credit risk management and non-performing loans and make efforts to control these issues. Finally, this study suggests that further research be conducted to examine other factors affecting financial performance which have not been included in this study.

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