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Abstract

Commercial banks in Kenya have faced daunting challenges that touch on various key financial performance indicators and therefore impacting on performance. Credit risk affects the key financial indicators that are likely to impact performance of any lending institution. The main goal of this study was to ascertain the moderating effect of ownership structure on the relationship between credit risk and financial performance of Commercial banks in Kenya. Longitudinal research design was utilized on data from 41 licensed banks in the country. The study relied on secondary panel data and multiple regression was used and analysis was through STATA analytical tool. The study established that bank ownership has a significant effect on the financial performance. The outcome of the study demonstrates that a more diversified ownership structure is helpful in improving bank's financial performance. Introduction of ownership structure has added knowledge by demonstrating that the link between credit risk and financial performance cannot be studied in isolation.

Key Words: *Ownership Structure, Credit Risk, Financial Performance.*

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1.1 Introduction

Credit risk is at the heart of any financial intermediation which is one of the core businesses of a commercial bank. Alshatti (2015) indicates that commercial banking business is always exposed to numerous inherent risks and credit risk ranks among the critical risks particularly in a lending business. Due to the importance of the quality of assets on the financial performance of a bank, shareholders, managers, and the regulators take a very keen interest in the management of credit risks. The challenge of the deteriorating asset quality and nonperforming loans is described as a major headache to many banks and indeed to the global financial system by Sujeewa (2015) and Aladwan (2015). The relationship between credit risk and financial performance of banks can be influenced by various variables and may be internal or external. Some of these factors include ownership structure of a bank among others.

High levels of NPLs have been associated with poor credit risk management systems and financial performance that easily leads to a financial crisis. Increase in NPLs has a negative impact on the earnings, asset quality, capital adequacy among other key financial performance parameters making it important for regulators and policy makers. Ownership structure can determine the capacity and willingness to build strong corporate governance structures that may improve financial performance. Banks owned by foreign entities are perceived to be extra efficient in comparison to locally owned banks especially in developing countries (Zouri *et al*., 2014).

Globally, the relationship between credit risk and financial performance continues to elicit a big debate especially where other variables are introduced. Increasing levels of NPLs remain a major concern and has been greatly affecting the financial performance of commercial banks (Alshatti, 2015). The level of returns has also been fluctuating just as the interest rates have been and this has had an impact of the banks' financial performance and as Negro *et al*. (2010) observed that the world's real interest rates except those for liquid assets oscillated by about 200 basis points in the last three decades. Global financial crisis of 2009 followed by the period of low interest rates have rekindled keen interest among policy makers on the importance of financial performance. In many countries, cases of increased NPLs punctuated with many cases of legal foreclosure and bankruptcies have been or are being filed.

Digital revolution has revolutionized banking and as Alushula (2019) noted, commercial banks in Kenya recorded better earnings in 2018. There has been a wave of mergers and acquisitions that have led to change in the sizes of the banks involved in those transactions (CBK, 2018). The COVID-19 pandemic whose outbreak was reported in the early months of 2020 destabilized the normal way of doing business and many businesses had to either readjust or close shop due to the impact of the high volatility in global market. According to the CBK, Kshs. 1.63 trillion translating into 54.2% of the loan portfolio in the Kenyan Banking sector was restructured in 2020 due to the challenges precipitated by the COVID-19 pandemic (CBK, 2020). The central bank responded by instituting some measures that sought to protect the performance of the banks and consequently ensure that the customers' deposits are safe. Some of those measures included the loan classifications and provisioning requirements that were to help manage the asset quality and the earnings as well.

1.2 Research Problem

Credit risk is a big challenge that continues to affect many lending financial institutions. There is a high correlation between high levels of NPLs and weak credit risk management systems. When credit risk increases, NPLs become a big challenge due to increase in collections costs and loan

loss provisions that leads to poor financial performance in commercial banks (Sujeewa, 2015; Muriithi *et al*., 2016). Diversity in the ownership structure has an impact on how a bank is managed and conducts its business ranging from the expansion and dividends' distribution policies among others and this has a huge impact of the financial performance.

According to the report from GCR Ratings report in the first quarter of 2021, the Kenyan banking sector is still facing huge challenges which largely include the deteriorating asset quality and stagnating growth. According to Khawaja and Din (2007) and Maina (2015), banks are experiencing unprecedented challenges that related to the key facets of financial performance. Very high interest rate spreads are one of these key challenges because as the spreads continues to soar, interest income decreases. High interest rates on credit facilities also lead to debt service fatigue which exacerbate the levels of NPLs especially where credit risk is not well managed. Increased NPLs lead to increased loan loss impairments. Other external factors such as the COVID-19 pandemic has worsened the situation and the increased credit risk negatively impacts the overall bank performance. The banking sector is also undergoing radical changes powered by competition from FinTechs, evolving business models, increasingly stringent regulation, and compliance requirements as well as disruptive technologies. Some of these stringent regulations include the requirements by the Basel II and III Accords, the Dodd-Frank Act and IFRS 9. High interest rate spread causes higher levels of credit risk.

Scholars have studied the associations between ownership structure and financial performance and often ended up with conflicting results. Micco *et al.* (2004) and Mamatzakis et al. (2017) studied the impact of bank ownership on financial performance and concluded that there is a positive link between the variables. Cull, Peria and Verrier (2017) were of the contrary opinion. Based on the foregoing, there is no single position regarding the impact of ownership structure onto the relationship between credit risk and financial performance.

1.3 Research Objectives

The study sought to investigate the effect of ownership structure on the relationship between credit risk and financial performance of commercial banks in Kenya.

2.1 Research Methodology

Research design helps in mapping up a complete strategy on how to synchronize different parts of the study in a comprehensible and rational way to ensure that you will efficiently address the research problem (De Vaus, 2006). This study employed longitudinal research design as it employed continuous or repeated measures over prolonged periods of time and there it was very appropriate for such a project. Longitudinal design is also subdivided into four i.e., trend study designs, cohort study designs, panel designs and lastly time-series designs. All these designs are dependent of the sample adopted, tenor of the study, data collection time, and considers the measurements used. This study also used trend studies as they are the best in assessing the changes in a sample that runs over time. This ultimately drew results that can help in making conclusions over a populace. It is suitable because it is using panel data analysis which largely helps in analyzing two-dimensional data which is cross sectional and longitudinal.

With a population of 41 banks licensed and under the CBK's regulatory framework, the study uses panel data which helped to study changes in the identified quantitative parameters that define the variables over time. Ten year data (2010 to 2019) was assembled for each of the variables that include; credit risk (NPLs to total loans ratio); bank ownership (bank ownership classification) and

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financial performance based on the CAMELs rating scores which were operationalized as tabulated in table one.

Table 1: Operationalization of study variables

Variable	Operation Definition	Indicator	Measurement	Scale	Comparable studies
Independent Variable - Credit Risk	Credit risk is computed based on the debtor's holistic ability to repay a loan as per the terms and conditions	Asset quality	NPLs to Gross Loans Ratio	Ratio	Sujeewa (2015); Shehzad et al., 2013
Moderating Variable -Bank Ownership	The structure of the shareholders' ownership	Shareholding	Percentage of private ownership to total shareholding	Ratio	Sarker and Nahar (2017)
Dependent Variable - Financial performance	The recorded performance centered on key bank's financial parameters	Performance	CAMELs	Ratio	Babar and Lions (2012) and Ahsan (2018)

The analysis was done using various data analysis methodologies under the STATA analysis model and the results were interpreted to deduce practical lessons and knowledge that could be utilized in the efforts to improve asset quality and ultimately bank performance. Multiple regression was used in the evaluation of the data collected to test the relationships between the variables. Baron and Kenny (1986) recommended a three-step method in which regression analyses should be done and test how significant the coefficients are at each of the steps as defined in table two below. This approach allows for the estimation for each of the paths in the model which help in ascertaining if the moderator functions meet the anticipated requirements. Moderation analysis is important as it also allows a researcher to test the influence of a third variable on a certain relationship. Moderating variables can strengthen, weaken, or alter the nature or thrust of a relationship between two major variables.

Table 2: Research Objective, Hypotheses, Diagnostic Tests, and Interpretation

Objective	Hypothesis	Diagnostic Approaches	Interpretation
Determine the moderating effect of bank ownership on the relationship between credit risk and FP of commercial banks in Kenya.	**H_1:** Bank ownership does not moderate the relationship between credit risk and FP of commercial in Kenya	A regression analysis with independent predicting dependent Step 1: $FP = \beta_0 + \beta_1 CR_{it} + \varepsilon$ Step 2: $FP = \beta_0 + \beta_1 CR_{it} + \beta_2 BO_{it} + \varepsilon$ Step 3: $FP = \beta 0 + \beta_1 CR_{it} + \beta_2 BO_{it} + \beta_3 CR*BO_{it} + \varepsilon$	Moderating effect of bank ownership exists if ~~$\beta 1$~~ $\beta 3$ is statistically Significant

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3.1 Findings and Discussions

The moderating effect of bank ownership was assessed, and results explained using coefficient of determination (R-Square) and the regression coefficients. Hierarchical regression analysis was performed with an interaction term (a product of credit risk and bank ownership) introduced as an additional predictor. The moderating effect was analyzed in 3 models/steps in line with the following models:

Step 1: $FP_{it} = \beta_0 + \beta_1 CR_{it} + \varepsilon$

Step 2: $FP_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 BO_{it} + \varepsilon$

Step 3: $FP_{it} = \beta 0 + \beta_1 CR_{it} + \beta_2 BO_{it} + \beta_3 CR*BO_{it} + \varepsilon$

Table three shows the regression coefficients for the first model.

Table 3: Regression Results

Financial Performance	Coef.	Std. Err.	z	P>|z|
Credit Risk	-3.382	0.176	-19.240	0.000
_cons	1.032	0.034	30.250	0.000
Wald chi2(1)	370.05			
Prob > chi2	0.000			
R-squared	53.25			

The fitted model was:

$FP_{it} = 1.032 - 3.382 CR_{it}$

The coefficient of determination R Square was 53.25%. The model indicates that credit risk explains 53.25% of the variation in financial performance. The Wald chi2(1) of 370.05 shows the fitness of the model as far as the effect of credit Risk on FP is concerned and $p=0.000<0.05$ imply that the effect of credit risk on FP are statistically significant. The beta coefficient of -3.382 suggests that a unit change in credit risk is associated with 3.382 decrease in performance.

The second model was;

Step 2: $FP_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 BO_{it} + \varepsilon$

Table four shows the regression coefficients for the second model.

Table 4: Regression Results

Financial Performance	Coef.	Std. Err.	z	P>|z|
Credit Risk	-3.2452	0.1792	-18.1	0.000
Bank Ownership	0.0384	0.0087	4.44	0.000
_cons	0.9404	0.0410	22.92	0.000
Wald chi2(2)	426.00			
Prob > chi2	0.000			
R-squared	55.890			

The fitted model was:

$FP_{it} = 0.9404 - 3.2452 CR_{it} + 0.0384 BO_{it}$

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The results indicated that the coefficient of determination R-Squared was 55.89%. The model indicates that credit risk and bank ownership explain 55.89% of the variation in financial performance. The Wald chi2 (2) of 426 shows the fitness of the model regarding the effect of credit risk and bank ownership on FP and p=0.000<0.05 imply that the impact of credit risk on bank ownership are statistically significant. The beta coefficient of -3.2452 suggests that units change in credit risk is associated with 3.2452 decrease in financial performance. In addition, beta coefficient of 0.0384 alludes that units change in bank ownership is associated with 0.0384 increase in financial performance.

The third model;

Step 3: $FP_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 BO_{it} + \beta_3 CR*BO_{it} + \varepsilon$

Table 5 shows the regression coefficients for the third model;

Table 5: Regression Results

Financial Performance	Coef.	Std. Err.	z	P>|z|
Credit Risk	-2.3346	0.1703	-13.7100	0.000
Bank Ownership	0.0297	0.0074	4.0100	0.000
CR*BO	0.4655	0.0389	11.9700	0.000
_cons	0.7322	0.0391	18.7100	0.000
Wald chi2(3)	426.00			
Prob > chi2	0.000			
R-squared	78.09			

The fitted model was;

$FP_{it} = 0.7322 - 2.3346CR_{it} + 0.0297BO_{it} + 0.4655CR*BO_{it}$

In step three, the results show that the regression model of credit risk, bank ownership and the interaction term CR*BO on financial performance was significant with (β_1=-2.3346, p=0.000<0.05: β_2=0.0297, p=0.000<0.05: β_3=0.4655, p=0.000<0.05). The model indicates that credit risk, bank ownership and the interaction term CR*BO explains 78.09 % of the variation in financial performance. The Wald chi2 (2) of 426 shows the fitness of the model regarding the effect of credit risk, bank ownership and the interaction term CR*BO on financial performance.

Since the P value of the interaction term (CR*BO) is 0.000< 0.05 and the R^2 increased from 53.25% to 55.89% and 78.09% after the interaction term and thus, we conclude that bank ownership moderates the effect of credit risk on financial performance. The null hypothesis was rejected that the effect of credit risk on FP is not moderated by bank ownership.

4.1 Conclusions and Recommendations

Hierarchical regression analysis was performed with an interaction term (a product of credit risk and bank ownership) introduced as an additional predictor. The moderating effect was analyzed in 3 models. In the first model, the R Squared, was 53.25%. The model indicated that credit risk explains 53.25% of the variation in financial performance. The p=0.000<0.05 imply that the relationship between credit risk and FP are statistically significant. The beta coefficient of -3.382 suggests that a unit change in credit risk is associated with 3.382 decrease change on financial performance.

In the second model, the results indicated that the R-Squared, was 55.89%. The model indicates that credit risk and bank ownership explain 55.89% of the variation in financial performance. The $p=0.000<0.05$ implied that the relationship between credit risk and bank ownership are statistically significant. The beta coefficient of -3.2452 suggests that a unit change in credit risk is associated with 3.382 decrease change on financial performance. In addition, beta coefficient of 3.2452 suggests that units change in bank ownership is associated with 3.2452 increase in FP.

In the third model, the results show that the regression model of credit risk, bank ownership and the interaction term CR*BO on financial performance was significant with (β_1=-2.3346, $p=0.000<0.05$: β_2=0.0297, $p=0.000<0.05$: β_3=0.4655, $p=0.000<0.05$). The model indicates that credit risk, bank ownership and the interaction term CR*BO explains 78.09 % of the variation in financial performance.

The study has demonstrated that ownership has a significant impact on the relationship between credit risk and FP. According to the findings, an increase in ownership structure has a positive impact on the subject relationship. The most recent major merger/acquisition in the banking sector in Kenya was in 2019 when CBA and NIC banks merged into NCBA Group PLC. The merger led to diversification of the ownership and management of the resultant bank.

Since the P value of the interaction term (CR*BO) is 0.000< 0.05 and the R^2 increased from 53.25% to 55.89% and 78.09% after the interaction term and thus, we conclude that bank ownership moderates the relationship between credit risk and FP. The null hypothesis was rejected.

The study's findings are in line with Micco et al. (2004) which obtained dataset on bank ownership and bank performance for 119 countries and used about 50,000 observations picked over 1995-2002 period. The conclusion was that ownership is significantly correlated with performance in developing countries compared to industrial countries. The results therefore indicate that at times the location or economic status of where the study is carried out counts. Mamatzakis *et al*. (2017) also concluded that banks with high state ownership had low profitability. The study also observed that the distinct types of shareholders usually possess diverse reasons for investing and therefore pursue different incentives. Other studies that have alluded to ownership structure affecting financial performance of commercial banks include Yahaya and Lawal (2018) in Nigeria, Dakhlallh, et al. (2019) in Jordan and Sarker and Nahar (2017) in Bangladesh.

According to the findings of the study, banks with diverse ownership structure compared to family-owned banks record better performance. The reason of including could be because a government owned or controlled bank at times could lead to inefficiencies that ultimately lead to increased costs which negatively impact the financial performance. This is not entirely true because evidence exists which has demonstrated that some banks with strong government involvement could also be efficient and profitable. The regulator should be able to continuously carry out a deep-dive assessment of the banks' performance based on the ownership structure and encourage diversity in ownership, where possible.

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