THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Impact of COVID-19 on the Relationship between Credit Risk and Financial Performance of Commercial Banks in Kenya

Andrew Kubo
Accountant, Department of Finance & Economic Planning,
County Government of Taita Taveta, Kenya

Abstract:
The study sought to establish the impact of COVID-19 on the relationship between credit risk and the financial performance of commercial banks in Kenya. A descriptive research design that targeted all commercial banks in Kenya was adopted and focused on two eras, pre and post-COVID-19 and sought to find out the impact it had on the variables under study. The results indicated the existence of a positive and significant correlation between the Capital adequacy ratio and return on assets. It also established a moderately strong positive relationship between liquidity ratio and return on assets among the banks reviewed. It further established a weak positive relationship between the total assets held by the banks and the return on assets. On the other hand, the study established a negative slope and significant correlation between Non-Performing Loans ratio and Return on assets. Subsequently, the study established that Capital adequacy ratio, Liquidity ratios and Total assets had a significantly positive relationship with the Return on Assets of the identified banks operating within Kenya. In this regard, the study recommends further studies, especially on mobile loan products, in view of how well banks perform. One key area would be the impact of mobile loans on the credit risk to banks.

Keywords: *Financial performance, credit risk and commercial banks*

1. Introduction

Financial institutions generate revenue through interest earned on credit that has been extended to borrowers. The facilitation of lending is one of the important aspects for any financial institution if it wants to make a profit (Ramazan & Gulden, 2019). One of the most important threats facing banks is credit risk (Caruso, 2021). When a borrower is poorly assessed and is granted a loan, the borrower may experience difficulty in repaying the loan, and subsequently, the loan may be defaulted. When credit risk is not taken into account, loans to borrowers may not be repaid, thereby increasing bad debt and reducing bank profitability (Bhattarai, 2019). This then affects the revenue generated by banks. If the number of bad debts increases, the bank's profitability will decrease, and when bad debts remain low, the profitability will increase.

The pandemic began in late 2019 and went on to change the lives of everyone worldwide in 2020. The pandemic had significant cross-cutting effects, politically, socially and economically. Since everything was at a standstill due to lockdowns, some businesses were forced to shut down due to reduced revenues and subsequently, employees had to be let go. Since banks, in their nature of business, are at risk in case of any dynamics, they were greatly affected by the pandemic. The pandemic, which started in the Far East, quickly found itself in Africa, and the consequences were dire. Since the pandemic brought with it hard economic times, businesses were forced to downgrade and further lay off some of their employees, which forced individuals to dig into their savings, consuming everything they had in their accounts, thus affecting the bank's liquidity in a nutshell. Alternatively, those with financial obligations, such as loans, could not meet them as they had no income since most employees were laid off. This resulted in loans being defaulted, putting banks at risk. Subsequently, the financial performance of banks, which predominantly depends on interest earned from loan facilities, was affected.

This occurs in the event where one party is not able to pay back a loan facility offered by the lender (Peterdy, 2022). For an organization to be profitable, it must manage its risks. When resources are pooled to minimize and prevent borrower default, it is called credit management (Bashabe, Kalu & Amu, 2017). In order to limit credit risk, it is important for customers to be rigorously screened and evaluated to ascertain their payback ability. Banks use a concept known as the 5C of credit to assess anyone in need of a credit facility (Abiola et al., 2016). This rating model helps banks improve lending performance as they better understand their customers. The 5Cs of this credit are: character, ability, security, capital and condition.

Achou and Tenguh (2018) argued that credit risk affected the profitability of banks, creating the need for institutions to mitigate risk. According to Van Horne (2019), a company's credit policy has a major influence on the level of accounts receivable, which measures a manager's position in the optimal investment in receivables and can trade profit when income increases. This research project looked at the borrower's personality, capacity, collateral, capital and condition (5Cs of credit) as a measure of credit risk. This measure was important because its holistic approach eliminates

information asymmetry as it provides the lender with all relevant information about the borrower during the customer evaluation process. The credit report equips the lender with information that allows them to either approve or decline the facility application. When risk is high, lenders protect themselves by asking for a guarantee or raising interest rates.

Financial performance is measured by the profit or loss of a business over a certain period of time (Yahaya & Lamida, 2015). It can be calculated by looking at various perspectives of a business using ratios (Omondi, 2013). This study adopted return on assets to evaluate how well an institution performs. It aimed to measure how a company generates income using its assets, which are loans. The justification for using this metric was earnings ratings used by regulators as an indicator of financial stability.

There are different tools a lender may employ as a way of mitigating risk when a borrower fails to meet their obligations. They can use quantitative measures, qualitative measures, or both to decide if a borrower meets their checklist, all with the goal of minimizing risk (Peterdy, 2022). When risk is well-managed, it increases the bank's revenue. In recent years, the market has been flooded by lenders, thus increasing competition; hence, there is a need to scrutinize borrowers to have a good loan portfolio (Huljak, Martin, Moccero and Pancaro, 2020). This is simply because bad loans tend to increase repayment costs while reducing the income from loans granted to borrowers.

Since banks, like all other financial institutions, depend on loans as assets to generate profits, the guarantee of reduction of bad debts confirms this (Verma, 2022). Bad debts affect an organization's profitability because loans make up a large portion of the balance sheet (Ntoiti & Jagongo, 2021). Effective credit risk management will result in high revenue as bad debts will be dealt with, and loan servicing costs, such as loan recovery costs, will also be reduced.

1.1. Research Problem

There are various ways in which banks can mitigate credit risks, such as managing the risks by employing various mechanisms like establishing credit assessments, staff training, credit standards, and conditions to reduce potential losses. Financial institutions constantly formulate ways to address credit risk, although they continue to face inherent challenges in managing risks, thus causing profitability to take a hit. This makes the management of credit risk an important component for financial institutions. Financial institutions often eliminate or mitigate risks related to their activities through prudent practices. To mitigate risk, a financial institution can adopt different rates depending on the magnitude of the sector the finances are being geared to. Higher risks attract higher rates and vice versa, hence the need for a healthy portfolio (Babbel & Fabozzi, 2019).

Muasya (2018) posits that Non-Performing Loans affect commercial banks in Kenya, suggesting an inverse relationship between the two variables. Oganda, Mogwambo, and Otieno (2019) also found that when Non-Performing Loans rise, financial performance drops. These studies focused on interest rates as an operational variable and whether they affect banks. This depicts a conceptual gap since the variables under study differed from the ones in my study.

Kyereboah-Coleman (2018) investigated the impact credit risk had on the financial performance of microfinance institutions in Sub-Saharan Africa. The results indicated a significant correlation between the variables under study.

Gleason (2018) used 2016-2017 data from retailers in 14 European countries to measure the correlation between financial performance and leverage. Again, the findings indicated a positive relationship, meaning that as the level of debt increases, financial performance will decrease. However, these studies depicted a contextual gap as they focused on the Sub-Saharan and European contexts. One study even further focuses solely on microfinance institutions, which are regulated differently from commercial banks.

In his study, Masinde (2017) established a relationship between credit risk and financial performance. The results of his findings suggested a positive correlation between the operating variables of his research but there exists a negative relationship between NPLs and financial performance. Njiru (2020) in his study posits that as NPLs increased, then financial performance decreased. His study looked at all commercial banks within the Kenyan context. The study adopted secondary data and used a scope of 5 years as a period of study. These studies depicted methodological gaps because one based its research on 29 commercial banks as opposed to a census while also working with a time frame of just 5 years. My study examined the impact COVID-19 had on the relationship between credit risk and profitability of commercial banks in Kenya using a scope of two years before and after the pandemic.

As much as many studies covered this topic, gaps have still emerged. Some were based in different countries, demonstrating contextual gaps since the regulations of commercial banks may differ from one country to another, while others focused on SACCOs, which have different reporting frameworks from commercial banks. Therefore, what my research sought to establish was whether credit risk, such as NPLs, had any impact on banks' profitability during the COVID-19 era. Hence, the question: What impact did COVID-19 have on the relationship between credit risk and the financial performance of commercial banks in Kenya?

1.2. Research Objective

- To ascertain whether COVID-19 had an impact on the relationship between credit risk and the financial performance of commercial banks in Kenya.

2. Theoretical Review

This study was anchored on three theories: portfolio theory, credit management theory and theory of asymmetrical information. These theories will be discussed in depth in this chapter.

2.1. Portfolio Theory

Markowitz (1927) argued that combining and valuing assets can reduce individual risks associated with them. Therefore, to diversify risk, investors should invest in a combination of assets. Having an investment portfolio allows profits to be increased while minimizing risk. This theory is based on several assumptions. Balancing risk as well as return is the foundation of portfolio theory. Depositors who wish to exploit their portfolio income will need to have an efficient portfolio with medium volatility. This will allow stakeholders to work and exploit the company's profits while minimizing risk (Markowitz, 1952). This theory is very important for banks.

This theory was vital to this study as it allowed banks to extend their credit facilities to customers from different sectors to diversify risk. This means that if one sector is in crisis, other sectors will pass those losses on to the bank. For example, if an investor decides to invest in a number of different stocks, he or she could be exposed to serious risk if the share price declines across the market. However, if the same investors diversify their investments into the stock and bond markets, this can help reduce the risk of total loss in the event that stock prices fall and bond prices rise (Kim, 2019). This theory helps portfolio managers understand investment diversification as a financial strategy to achieve frontier efficiency by ensuring that the chosen portfolio has unsystematic returns and can be balanced at any time to maximize profits. However, portfolio theory does not deal with the real world since all transactions used by portfolio theory are based on expected principles or mathematical statements about what is expected rather than actual or dominant. Stakeholders should use approximate values based on past recoverability and the unpredictability of calculations, meaning they may be affected by variables that are not currently known, acknowledged or intentional at the time of calculation.

2.2. Credit Scoring Theory

Satyajit (2014) proposed that all borrowers be subjected to a screening process to determine whether they are worthy of a credit facility. Before credit is granted to a borrower, a bank needs to find out their previous obligations and whether they were honored in a timely fashion. Such information will dictate to the lender whether or not they can extend the credit facility to the borrower and at what rate to mitigate any default risk. Before anything, customers must be screened to make sure they have the will, ability and debt repayment capacity. Banks use the 5C credit model to assess customers as potential borrowers (Doll et al., 2016). 5C helps banks improve loan performance by better understanding the borrower.

Credit scores give lenders the ability to select customers based on their lending performance. Through the screening process, lenders are able to know the credit history of the borrower to see if they are able to repay the loan (Nawaz et al., 2018). Customer screening gives lenders the ability to screen borrowers with good credit history, thereby reducing bad debt and increasing profits for the bank. However, these scores may sometimes be very subjective to borrowers. A borrower may have a poor credit score because they defaulted on payment of a loan they undertook when facing hard times. These scores will affect their ability to be granted a loan presently based on the poor ratings they have, even though they may be in a position to repay the loan presently.

2.3. Theory of Asymmetrical Information

This theory was developed by three economists, George Arkelof, Michael Spence and Joseph Stiglitz. In Arkelof's article "Lemon Market" (1970), he used a comparison between car sellers and buyers. He argued that car sellers possessed different information than buyers, allowing them to sell the inferior products he called lemons without lowering prices to compensate for their inferiority.

Information symmetry was important to this study because it emphasized that both parties (lender and borrower) need to have the same level of information to reduce or avoid bad debt and increase bank profitability. If the borrower discloses full information pertaining to the credit facility, then the lender is in a better position to make an informed decision, taking into consideration the risks at hand, if any. However, in an ideal state, this is almost never the case. A borrower who may have inside information about the demise of the company he works for in the near future may decide to take a long-term loan when it becomes clear that he will default (Islam and Setiawan, 2021). This poses a moral hazard problem since the parties in this exchange are not at par with the information at hand. In this case, the borrower has more information than the lender, bringing about the possibility of defaulting.

3. Methods

To examine whether there exists a relationship between the variables being studied, a descriptive research design was adopted. The population of the study was 43 banking institutions as opposed to sampling because it is imperative to take a broad view of many objects in research if they have a common set of characteristics (Cooper & Schindler, 2019). The period of study was two years during the COVID-19 era and two years post-COVID-19 era, 2018-2019 and 2021-2022, respectively.

Correlation analysis and multiple regression analysis were also used to determine whether performance was affected by risk. The following regression model was used:

$Y = \beta + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \mu$

Where:

Y = Financial performance

β = Constant

$\beta 1$, $\beta 2$, $\beta 3$ & $\beta 4$= Co-efficient to independent variables

$X1$ = non-performing loans

$X2$ = Capital adequacy

$X3$ = Size of bank
$X4$ = Liquidity
μ = Probable error

4. Results

The study used the Pearson Coefficient test to determine the level of correlation between the variables under study. Subsequently, table 1 shows the results.

		ROA	CAR	LIQUIDITY	NPL	TOTAL ASSETS
ROA1	Pearson Correlation	1	.610**	.450**	-.489**	.165
	Sig. (2-tailed)		<.001	.002	<.001	.291
	N		41	41	41	41
CAR	Pearson Correlation	.*	1	.534**	-.192	.200
	Sig. (2-tailed)			<.001	.217	.199
	N			41	41	41
LIQUIDITY	Pearson Correlation			1	-.231	.123
	Sig. (2-tailed)				.135	.432
	N				41	41
NPL	Pearson Correlation				1	.119
	Sig. (2-tailed)					.449
	N					41
TOTAL ASSETS	Pearson Correlation					1
	Sig. (2-tailed)					
	N					
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 1: Correlation Analysis

According to table 1, there was a moderately significant and positive relationship between Return on Assets and Capital adequacy ratio (r=.610; p<0.05). The positive slope indicated that an increase in capital adequacy contributed towards heightened financial performance. Similarly, the results indicated that the Liquidity ratio had a moderately strong positive relationship with ROA (r=0.450; p<0.05). Subsequently, there was improved financial performance once the banks realized a strong liquidity position. Moreover, there was a significant correlation between on performing loans (NPL) ratio and Return on Asset (ROA) (r=-.489; p<0.05). The negative slope indicated that as the non-performing loans in the banks rise, the financial performance of such organizations reduces. Finally, the results indicated a weak but significant relationship between Total assets and Return on Assets (r=.165; p<0.05). The results indicated that an increase in total assets by the banks affected their financial performance positively.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.151	.034		4.492	<.001
	Liquidity Ratios	.021	.031	.078	.691	.004
	Capital Adequacy Ratio	.709	.102	.737	6.951	<.001
	NPLs Ratio	-.104	.060	-.207	-1.728	.003
	T/Assets	.053	.000	.092	.901	.000
a. Dependent Variable: Return on Assets						

Table 2: Regression Coefficients

According to the results above, in 2019, Capital Adequacy Ratios had an influence on ROA in a statistically significant manner (β=1.008, p<0.05), implying that a one-unit change in CAR led to a 1.008 change in ROA. In addition, Liquidity ratios indicated statistical significance (β=0.218, p<0.05). On the other hand, the NPLs ratio indicated a statistically significant negative influence on ROA at (β=-0.156, p<0.05), implying that a one-unit change in the non-performing loans correlated with a -0.156 change in ROA. Finally, the multiple regressions indicated that total assets had a statistically significant effect on ROA (β=0.535, p<0.05). Subsequently, the multiple regressions model developed was as provided:

$Y = \beta + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \mu$

Or

Financial Performance= 0.119+1.008X1+0.218X2-0.156X3+0.535X3+ μ

On the other hand, table 2 illustrates the results of the 2022 financial year, where Capital Adequacy Ratios had an influence on ROA in a statistically significant manner (β=0.709, p<0.05), implying that a one-unit change in CAR leads to a 0.709 change in ROA. In addition, Liquidity ratios indicated statistical significance (β=0.021, p<0.05). On the other hand, the NPLs ratio indicated a statistically significant negative influence on ROA at (β=-0.104, p<0.05), implying that a one-unit

change in the non-performing loans correlated with a -0.104 change in ROA. Finally, the multiple regressions indicated that total assets had a statistically significant effect on ROA (β=0.053, p<0.05).

$Y = \beta + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \mu$

Or

Financial Performance= 0.151+0.709X1+0.021X2-0.104X3+0.053X3+ μ

5. Conclusion and Recommendations

This study established the existence of a positive and significant correlation between the Capital adequacy ratio (r=.610; p<0.05) and Return on assets. In addition, the researcher identified a moderately strong positive relationship (r=0.450; p<0.05) between liquidity ratio and return on assets among the banks reviewed. Furthermore, it was established that there was a weak positive relationship (r=.165; p<0.05) between the total assets held by the banks and return assets. On the other hand, the researcher established a negative slope and significant correlation (r=-.489; p<0.05) between the NPL ratio and Return on assets. Subsequently, the researcher established that Capital adequacy ratio, Liquidity ratios and Total assets had a significantly positive relationship with the Return on Assets of the identified banks operating within Kenya.

Moreover, the study established that in the financial year 2018/2019, Capital adequacy ratio, Liquidity ratio, NPL ratio and Total assets had a strong correlation with Return on assets as indicated by R=0.880. The adjusted R2 was 0.775, which implied that 77.5% of the changes in the financial performance of the banks could be attributed to variations in the study predictor variables. Similarly, in the years after the COVID-19 outbreak 2021/2022, the study variables had a strong positive correlation R= 0.803 with a coefficient of determination of r2= 0.645. One can deduce that the financial performance of the banks has reduced after the COVID-19 outbreak compared to the previous period.

The multiple regressions test on the financial ratios of 2019 indicated that the Capital adequacy ratio had statistical significance on Return on assets (β=1.008, p<0.05). Liquidity ratio indicated statistical significance (β=0.218, p<0.05). Non-performing loans, on the other hand, had statistical significance on return on assets (β=-0.156; p<0.05). Total assets indicated statistical significance on return on assets (β=0.535, p<0.05). Furthermore, the researcher evaluated the multiple regressions for 2021/2022, which indicated capital adequacy ratios had a statistically significant effect on return on assets (β=0.709, p<0.05). In addition, Liquidity ratios indicated statistical significance (β=0.021, p<0.05). On the other hand, the NPLs ratio indicated a statistically significant negative influence on ROA at (β=-0.104, p<0.05). Finally, the multiple regressions indicated that total assets had a statistically significant effect on ROA (β=0.053, p<0.05).

The study concluded that Covid-19 had an impact on the variables under study. The financial institutions performed better before the COVID-19 pandemic, as shown by the multiple regression model that was developed. Moreover, the level of non-performing loans in the period after the pandemic increased, indicating a high credit risk for the banks. On the other hand, the level of total assets held by the financial institutions continues to increase even after the pandemic, indicating that the banks can return to improved financial performance going forward. The capital adequacy levels reduced after the pandemic, indicating that the capital base of the banks has been affected negatively by the pandemic. Similarly, the liquidity position of the banks reduced after the pandemic hence affecting the performance of the banks.

Banking institutions need to change strategies and policies based on the lessons learnt from the pandemic. It is imperative that banks review their credit policy when providing loans to their customers. The loan policies must be made more stringent to ensure that the loans are serviced so as not to overwhelm the banks and negatively affect their financial performance. Moreover, the banks should undertake interventions that boost their capital base to ensure that they can always cover any debts that they have to pay to other parties and institutions. Improved capital adequacy ratios will imply that the negative effects of the non-performing loans are countered by the financial institutions.

6. References

i. Abimbola, E. (2020). Impact of non-performing loan on bank performance in Nigeria. A case study of selected deposit money banks. *Journal of Business & Economic Policy, 7*(4), 7–11.
ii. Akerlof, G. A. (1970). The market for lemons: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics,* 84: 488–500.
iii. Bashabe S., Emenike O. Kalu, Christian U. Amu. Credit Risk Management and Financial Performance of Microfinance Institutions in Kampala, Uganda. Independent Journal of Management & Production 2017.
iv. Bhattaria, Y.R. (2021). Effect of credit risk on the performance of Nepalese Commercial Banks. https://pdfs.semanticscholar.org/2e79/19dea4a0534bc6a6b634d4ab8e2b4fcc8f1e.pdf.
v. Budiarto, A. (2021). The impact of non-performing loans towards financial performance of BPR in Central Java, the role of empathy credit risk. *Advances in Engineering Research,* 201, 251–258.
vi. Caruso, G., Gattone, S. A., Fortuna, F., & Di Battista, T. (2021). Cluster Analysis for mixed data: An application to credit risk evaluation. Socio-Economic Planning Sciences, 73, 100850.
vii. Central Bank of Kenya (2020): Bank Supervision Annual Report, 2020.
viii. Fincham J.E. (2008). Response rates and responsiveness for surveys, standards, and the journal. American Journal of Pharmaceutical Education, 72 (2), 43.
ix. Markowitz, H.M (1959). Portfolio selection: efficient diversification of investments – New York: John Wiley & Sons. (Reprinted by Yale University Press, 1970).
x. Nawaz, M., Munir, S., Siddiqui, S., & Afzal, F. (2018). Credit Risk and the Performance of Nigerian Banks. Interdisciplinary Journal of Contemporary Research in Business, 51–63.

xi. Nyabaga R. M, Wepukhulu J. M. Effect of Firm Characteristics on Financial Performance of Listed Commercial Banks in Kenya 2020. International Journal of Economics and Financial Issues, 2020, 10(3), 255–262.

xii. Oganda, J. A., Mogwambo, V, A., & Otieno, S. (2019). Effect of non-performing loans on the performance of commercial banks in Kenya: A comparative study between national bank Kenya limited, and equity bank Kenya limited. *The Strategic Journal of Business & Change Management, 6*(2), 2430–2443.

xiii. Ramazan. E., & Gulden. P., (2019). The Impact of Credit Risk on Deposit Bank Financial Performance in Turkey. Procedia Computer Science, 6(10), 979–987.

xiv. Rehman Z. U, Muhammad N, Sarwar B. Impact of risk management strategies on the credit risk faced by commercial banks of Balochistan. Financial Innovation, 2019, vol. 5, issue 1, 1–13.

xv. Singh S. K, Basuki B, Setiwan R. The Effect of Non-Performing Loan on Profitability: Empirical Evidence from Nepalese Commercial Banks. Journal of Asian Finance Economics and Business 8(4):709–716.

xvi. Shibutsea, Robert, Elizabeth Kalundab Dan George Achoki. (2019). Effect of leverage and firm size on the financial performance of deposit-taking savings and credit cooperatives in. International Journal of Research in Business and Social Science, Vol. 8, No. 5, ISSN: 2147–4478.

xvii. Trunfio, T.A., Scala, A., Giglio, C. et al. (2022). Multiple regression model to analyze the total LOS for patients undergoing laparoscopic appendectomy. *BMC Med Inform Decis Mak* 22, 141. https://doi.org/10.1186/s12911-022-01884-9

xviii. Verma, E. (2022). Financial Performance—Understanding its Concepts and Its Areas. San Francisco: Simplilearn Solutions Online Press.

xix. Wenshuai Wu (2022). Credit Risk Measurement, Decision Analysis, Transformation and Upgrading for Financial Big Data – Hindawi.com journals.