AN ASSESSMENT OF THE EFFECT OF COVID 19 ON CREDIT RISK MANAGEMENT IN THE BANKING INDUSTRY. A CASE OF 6 COMMMERCIAL BANKS IN LUSAKA, ZAMBIA

Abstract

The Corona-virus disease (covid-19) affected most of the industries in the world including the banking industry. The study sought to assess the effect of Covid- 19 on credit management by Commercial Banks. Six commercial banks were sampled out of the total 19 banks operating in Zambia. The study collected primary data using an online-administered questionnaire. The data was analyzed using descriptive statistics and factor analysis. The study found that there an increase in the non performing loans at the beginning of the pandemic. However, the restructuring of these loan by the banks helped to reduce the number of non performing loans.

Keywords: Corona-virus Disease 2019 (COVID 19), Credit Risk, Debt restructuring

Introduction

The Coronavirus Disease 2019 (Covid-19) pandemic has had serious impact on the credit risk of commercial banks. A decade ago, Banking and Financial Industry witnessed a similar unprecedented financial crisis and as an outcome of that there were a stream of regulations which were introduced by regulators worldwide to monitor and contain the impacts of such crisis. According to the International Monetary Fund (IMF,2021) regulations like stress testing have helped banks to brace up for such scenarios to some extent but given the nature of this pandemic the stress test scenarios and models will need to be enhanced to understand the impact of COVID19 scenario on the Banking Book. Global Regulators have been very proactive, and many have also announced a host of measures aimed at injecting the necessary liquidity and supporting the financial system from rate cuts, freeing up capital buffers and deferring stress testing exercises, all of which is aimed to avoid any breakdown in the Banking Sector (IMF,2021) .Typically Banking Book captures a bigger pie of the overall exposures and hence the focus on credit Risk Management practices is more prominent in the ongoing crisis.

The banking sector in Zambia has seen tremendous growth and expansion in the last fifty years. The sector has seen more and more players entering the market with each one of them offering product and services that add value to the consumers as well as to the wider economy (BOZ, 2020)). As soon as the COVID 19 pandemic was declared the bank of Zambia's Monetary Policy Committee (MPC) too some steps. Icing measures through the creation of a Medium-Term Bank Accommodation (MBA) window to support banks with productive sector funding requirements. In this regard, banking institutions were encouraged to re-orient their lending portfolios to the productive sectors of the economy. Banking institutions were further encouraged to partner with the private sector players across the value chains, as part of the strategy to increase productivity and export earnings in the national economy. Financial institutions are also expected to increase their support to the Micro, Small and Medium Enterprises (MSMEs) in order to deepen financial

inclusion. Support to the MSME sector has the potential to promote value addition to the key sectors of the economy through diversification, export earnings and import substitution, which are all critical for increased economic output.

During a press conference held on 20th March, 2020, the President of the Republic of Zambia issued an outline of the Government's response to the COVID-19 pandemic. In his address, the President covered various measures and highlighted among others, the deep dive that the Ministry of Finance would have over the Cabinet-approved COVID-19 contingency plan. This includes the implementation of a budget to mobilize resources that would help various stakeholders contain and combat the spread of the disease in a multi spectral and coordinated manner. Governments across the world with reported cases of COVID-19 have took a number of measures to avert both economic and healthy catastrophe (Mukwena R & Sinkala M, 2020)

The COVID-19 pandemic had caused widespread economic disruption. Millions of businesses were forced to shut down and unemployment soared. The weakened economic conditions had implications on the financial system, including on Commercial Banks. Most bank assets are loans to households and businesses, and banks rely on the inflow of repayments on those loans to make profits and meet their obligations to depositors and creditors. If repayments suddenly decline, banks can become distressed and potentially fail. Hence the study assessed the impact of COVID-19 on credit risk management for Commercial Banks in Zambia.

Literature Review and Hypotheses Development

Measuring Financial Performance

From the past studies, there was an overwhelming evidence that credit risk management has a strong influence on bank profitability. Shafiq & Nasr, (2010) examined the key determinants of credit risk of Commercial banks on emerging economies banking systems compared with the developed economies. They found that regulation was important for banking systems that offer multi-products and services, management quality was critical in the cases of loan-dominant banks in emerging economies. Kargi, (2011) by using Return on Equity as a measure of bank's performance and a ratio of non-performing loans to total asset as proxy for credit risk management. They found that Non-performing loans (NPL) had a larger effect on profitability as measured by (ROE) than capital adequacy ratio (CAR) and the effect of credit risk management on profitability varied among Ghanaian banks included in their study. Kithinji (2010) examined the impact of credit risk management on the profitability of Commercial banks in Kenya between 2004 and 2008. Using regression analysis, he found that the larger part of the banks' profits was influenced by other variables other than credit and nonperforming loans COVID-19 is adversely.

Credit Risk Theory

Credit risk according to Anderson and Salas, & Saurina, (2002) refers to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily that of the lender and includes lost principal and interest, disrupt loss may be complete or partial and can arise in a number of circumstances, such as an insolvent bank unable to return funds to a depositor. To reduce the lenders risk,

the lender may perform a credit check on the prospective borrower, may require the borrower to take appropriate insurance, such as mortgage insurance or seek security or guarantees of third parties. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt. (Owojori, Akintoye & Adidu, (2011). This theory is relevant to my study because there is a high possibility of loan default as a result of slow business experienced by bank customers during the pandemic

Financial Risk Management Theory

Risk is the possibility that the actual return of an investment will differ from the expected return. Risk can also be defined as the realistic possibility of losing the principal invested and the amount of interests accrued on it either partially or completely. Credit risk is the risk that a borrower defaults and does not honor its obligation to service debt. It occurs when the borrower is unable to pay his debts as agreed or fails to make timely payment on his debt servicing. The default of a small number of customers may result in a very large loss for the bank (Boland (2012). Credit risk has been identified by Basel Committee as a main source of risk in the early stage of Basel Accord. Effective management of credit risk is inseparably linked to the development of banking technology which enables high speed loan decision making and simultaneously reduce the cost of controlling credit risk. This requires a complete base of partners and contractors (Das, & Ghosh, (2007). Credit risk is one of significant risks of banks by the nature of their activities. Through effective management of credit risk exposure, banks not only support the viability and profitability of their own business but also contribute to systemic stability and to an efficient allocation of capital in the economy (Iwedi, & Onuegbu, (2012). This theory is relevant to my study because there is a high possibility of loan default as a result of slow business experienced by bank customers during the pandemic.

Development of hypotheses

From the perspective of Financial Institutions especially banks, the conditions that the COVID-19 crisis triggered have specific implications for managing and mitigating credit risk. In the past months, banks have been adjusting to the new dynamics and exploring potential new approaches to the challenges (moody, 2021). The analyses gauge the impact of the crisis on national or regional economies as a whole, the impact by sector and sub sector, and specific credit-risk problems requiring real-time monitoring. The analyses are already revealing unique effects of on Covid- 19credit risk.

H1 there is a negative effect of Covid-19 on banks credit risk

There is a relationship between loan performance and credit risk

.Miller & Noulas (1997) depicted that if Financial Institutions are exposed more too high risk loans, there would be accumulation of unpaid loans along with less profits. Credit risk is most critical and expensive risk associated with Financial Institutions. Its impact is quite significant compared to any other risk associated to the banking sector as it is direct threat to solvency of the institution (Chijoriga, 2011). Credit risk is not only directly associated to solvency but it’s magnitude as well as level of loss is severe compared to other risks. It may results in loan losses of high level and even failure of Financial Institution (Richard et al., 2008; Chijoriga, 2011).

Loan portfolio is not only considered as a largest asset as well as pre-dominate source to generate revenue but one of the biggest risk source for the Financial Institution's soundness and safety as well (Richard et al., 2008). Hence credit risk management is considered to be one of the road maps for soundness and safety of the sector through prudent actions as well as monitoring and performance. Despite of the efforts made by the Financial Institutions number of problems increased significantly in both, emerging as well as matured economies of the world (Basel, 2004). Most important of all the risks associated to Financial Institutions is weak credit risk management, being a threat for the banking sector (Chijoriga, 1997).

H2 loan performance has a significant impact on credit risk

The relationship between debt restructuring and credit risk

Green (2009) emphasizes the distinction between the two forms of restructuring: restructuring by simple modification of loan characteristics (loan modification) and restructuring of bad loans (troubled debt). In his opinion, the restructuring of bad loans is a concession made in favor of a debtor, which the bank would not normally appeal, if the debtor wouldn't be faced with financial or economic difficulties in this study financial strain because of Covid 19 pandemic. The main feature of this type of restructuring consists in reducing interest rates or principal. Any other amendment to the original contractual terms, that do not involve changing the interest rate or principal level, enters in the category of the first type of restructuring.

In this case debt restructuring during the Covid can work in both ways; either favoring the bank or debtor.

H3 debt restructuring has a positive effect on credit risk

Method

The study used a descriptive research design. A mixed method approach was used to analyse data. The study was carried out among the six commercial banks identified at their Head Offices in Lusaka. The researchers selected a sample size of 157 employees drawn purposively from credit department of each commercial Bank as shown in the table below.

Table 1: Research design

Bank	Number of employees sampled
ABSA	26
ATLAS MARA	26
Investrust	26
Stanbic Bank	26
Standard Chartered Bank	26
ZANACO	27
Total	157

Results

Exploratory factor analysis (EFA) using a principal-axis factor extraction was conducted to determine the factor structure. Principal Component Analysis method of extracting loaded components with the Varimax

rotation criterion which assumes orthogonal relationships of the factors was chosen here. Primarily, the factorability of the items was examined. Several well-recognized criteria for the factorability of a correlation were used. Firstly, it was observed that all the items in the correlation matrix correlated at least 0.3 with at least one other item, suggesting reasonable factorability. Secondly, the Kaiser-Meyer-Olin measure of sampling adequacy was all above the commonly recommended value of 0.6, and Bartlett's test of sphericity was all significant. Finally, the commonalities were all above 0.3, further confirming that each item shared some common variance with other items. Given these overall pointers, factor analysis was considered to be appropriate with all items. Principal components analysis was used because the primary purpose was to identify and compute composite scores for the factors underlying. Items that did not meet the minimum criteria of having a primary factor loading of 0.4 or above were eliminated.

Items	Factor loading	Cronbach's Alpha
The banks have proactively assessed on how to work with clients who are affected by Covid 19	.813	.715
The banks have assessed the effect of Covid 19 on its clients and what financial stress it will have on them and its credit facility	.810	
The banks have also assessed the potential decline in the value of certain pledged collateral	.805	
The banks have assessed the potential delay in loan repayment or even clients accepting minimal payments due to the pandemic	.821	
Assessment of potential loan default because of Covid 19	.868	
Assessment on the increase in loan provision because of the Covid 19.	.829	

Table2: Covid 19 effect on banks credit risk Exploratory Factor Analysis Results

Table 2 above summaries the EFA results for all the 6 items under consideration. Kaiser Meyer-Olin measure of sampling adequacy was .849. All the 6 items are retained on the basis of commonalities of all the items were above .3 and on the basis of strong loading Cronbach's alpha score which gives an alpha value of 0.849, this supports the scale as being reliable.

Item	Factor loading	Cronbach's Alpha
Since the outbreak loans have been performing badly	.802	.823
Since the outbreak clients have failing to pay because	.795	
Of loss business that affects their profitability.		
Since the outbreak the loan portfolios have be constant because there are no new loan requests from old or new clients	.782	
Banks have noticed that clients are having second thoughts on boosting their businesses because they did not know the extent the outbreak will reach hence	.814	

declined in loan requests Banks have less or no information on some of their customers having loans at their respective banks because business premises are closed	.884	

Table 3: performance of loans Factor Analysis Results

The above table 3, summarize the EFA results for all the 5 concerned items of access to finances. Kaiser-Meyer-Olin measure of sampling adequacy was .823. All the 7 items are retained based on the commonalities of all the items were over .3 and based on the strong loading Cronbach's alpha score which provides an alpha value of 0.823, this demonstrates that the scale was reliable.

item	Factor loading	Cronbach's Alpha
Debt restructuring helps banks and customers minimize the credit risk	.930	.924
Extending the number of days for clients who are affected by the pandemic helps the banks minimize the default rate.	.927	
Debt restructuring help stakeholders understand the reports given out afterwards as compared to not restructuring at all with the pandemic restructuring is the best way to go for banks	.922	

Table 4: debt restructuring Factor Analysis Results

The above given table 4. Provides the summary of the EFA findings for all the 3 items of education levels which were considered. Kaiser-Meyer-Olin measure of sampling adequacy was 1.451. All the 3 items are retained based on the commonalities of the all items were above .3 and based on the strength of the loading Cronbach's alpha score which provides an alpha value of 1.451; this denotes that the scale was reliable.

	N	Mean	ST. Deviation	Skewness		Kurtosis	
	Statistics	Statistics	Statistics	Statistics	Std. error	Statistics	Std. error

Covid 19 impact on credit risk	157	3.7261	.78625	-.633	.209	.392	414
Performance of loans	157	2.1711	.93515	.800	.209	.211	414
Debt restructuring	157	3.8450	.68013	-.353	.209	-.170	414
Banks credit rsik	157	3.5045	.77412	-.311	.209	-210	414

Table 5:Descriptive Statistics of the Research Variables

The above table 5, presents the descriptive statistics which indicated that skewness and kurtosis were well within the reasonable range for assuming a normal distribution and assessment of the data suggested that the distribution appeared to be nearly normal. Results in table 5 above indicates that means for the variables Covid 19 impact on credit risk, Performance of loans , and Banks credit were all above 3.0 demonstrating that the respondents agree with all the items in the research instrument. However, the mean score for Debt restructuring was below 3.0 which signify that the respondents disagreed with some items in the questionnaire.

	Covid 19 impact	Performance of loans	Debt restructuring	Banks credit risk
Covid 19 impact on	**1**			
Performance of loans	**-.055**	**1**		
Debt restructuring.	**165**	**.148**	**1**	
Banks credit risk	**.336**	**-.361**		**.465**
1				

Table 6: Correlation

As presented in table 6 above, strong positive Debt restructuring Pearson Correlation of 0.465 was found and this was followed by Covid 19 impact which had a moderate Pearson Correlation of 0.336. While Performance of loans had moderate negative Pearson Correlation of 0.361

Table 7:

					Change Statistics		

Model	R	R Square	Adjusted R Square	Std. error of the estimate	R square change	F Change	df 1	df2	Sig.F Change	Durb inW atso n
1	.238 a	.111	.112	.72248	.111	12.575	2	186	0.000	
2	.616 b	.419	.418	.61377	.306	73.178	2	184	0.000	1.643

a. Predictors: (Constant), Covid 19 impact, Debt restructuring

b. Predictors: (constant), Debt restructuring, Covid 19 impact and Performance of loans

c. Dependent Variable: banks credit risk

The Durbin- Watson value show the extent of correlation between a provided time series and the wrapped version of itself over successive time intervals. The Durbin-Watson statistics is always in the range 0 to 4. Consequently, 1.643 demonstrates that there is no autocorrelation in the sample.

In this study, two models were conducted for regression, model 1 results indicated an R2 of 0.111 or 11.1%, it also indicate that the predictors (Covid 19 impact and Debt restructuring) in the first model are significant at F (1, 186) = 12.575, P < 0.05, the predictors in the initial model outlines 11.1% of the variance in the dependent variable. This demonstrates that Covid 19 impact and Debt restructuring has had influence on banks credit risk.

Model 2 with three predictor variables (Debt restructuring, Covid 19 impact and Performance of loans), was an improvement as compared to the initial model, with an R of 0.616 and an R2 change of 0.306. Multiple regression analysis for the second model above was utilized to test if the addition of Performance of loans increases the predictability.

Multiple regression model with all the three predictors explained 41.9% of the variance (R2= 41.9, F (1, 184) = 73.178, p < .05). When Covid 19 impact and Debt restructuring 41.9% of the variance (R2 change = .306, F (1, 184) = 73.178, p < .05) in the dependent. This demonstrates that the addition of Performance of loans adds more significant predictability on the banks credit risk. All the considered factors have an influence.

Hypothesis	T-Values	Beta	P-Values	Statistics	Results
Covid 19 impact	4.989	.343	000	P<.05	Supported
Debt restructuring	3.229	.236	.046	P<.05	Supported
Loan performance	-6.461	-.251	.000	P<.05	Supported
a. Dependent Variable: banks credit risk					

Table 8: Summary of hypotheses tests

Discussion

The study sought to establish the impact of Covid-19 impact on credit risk management. Credit risk is the risk that the borrower will fail to pay the principal and interest when economic circumstances change. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt. (Owojori, Akintoye & Adidu, (2011). The study established that there was a negative relationship between Covid-19 impact and credit risk. This finding agrees with other studies conducted in other countries such as United States Federal Reserve Bank (2021) who observed that economic crisis caused by the Covid-19 pandemic led to an unprecedented rise in unemployment and disruption in economic activity is putting a strain on the solvency of customers and companies, thereby increasing default rates and credit risk on the part of commercial banks**.**

As part of the study the relationship between loan performance and commercial banks credit risk during Covid- 19 pandemic was hypothesized. From the regression analysis performed, it was revealed that there was a strong relationship between loan performance and banks credit risk. Hence, the following alternative hypothesis was accepted. This meant that commercial banks in this study had reported an increase in non-performance loans during the period under review, March 2020 and October, 2021. Commercial Banks had less direct information on some of its customers having loans with the commercial banks under study because business premises had temporarily closed.

Furthermore , the relationship between loan restructuring and commercial banks credit risk during Covid-19 pandemic was hypothesized. The study concluded that there was a positive relationship between loan restructuring and credit risk. This happened because as loans where being restructured and interest suspended for a specific period of time, the category of loans classified as non-performing reduced. This finding is in tandem with measures that were taken by Central Bank of Singapore, (2020) to allow commercial banks to restructure customers' loans by extending the period of repayment. This helped to ease the cash flow problems experienced by SMEs during the pandemic.

5. Conclusion

The findings suggest that commercial banks have worked with their clients to restructure debt. In order to increase lending, banks need to have the balance sheet capacity to make new loans. Public policy measures can enhance this capacity by boosting capital ratios, relaxing the requirements on these ratios or granting banks accounting flexibility. When it comes to liquidity constraints, swift central bank action can ensure that funding liquidity is not an issue for bank.

The banks had assessed the potential delay in loan repayment or even clients accepting minimal payments due to the pandemic. Authorities could enhance the attractiveness of new loans by reducing their funding costs. An example, with additional incentives, was funding for lending programs, which usually offer banks

access to low-cost funding under certain conditions about how this funding was accessed and used. In terms of assessment of loan default due to Covid- 19 most commercials banks in the survey took measures to enhance banks' balance sheet capacity in emerging markets varied much more than in advanced economies. Most commercial banks implemented moratoriums on loan payments, provided relief from liquidity requirements and granted flexibility as regards the recognition of losses and the treatment of non-performing loans. For example ABSA deferred for three months customers capital repayment for both business and individual clients. The relief program was free from any additional fees,

Recommendations

Arising from the above this study recommends as follows:

- The firms in the banking industry need to improve their systems post Covid, the systems to capture information needs to be revamped. The concept of Customer Relationship Management (CRM) has its own technologies which are used to maintain dialogue with customers and track their credit behaviours during the Covid. For these firms with these systems in place there would be need to monitor which customers are returning and who is not returning and why? Such customer analytics would help the Bank to get back lost customers by initiating dialogue with those that have left so that they can come back.
- Commercial banks should engage government to allow them to continue to provide customers with relief measures such as payment deferrals, mortgage forbearance, loan modifications, late fee waivers, and suspension in reporting account delinquencies. Such interventions, while necessary to provide temporary relief to customers, must also be accompanied by enhanced risk management actions across impact areas.
- It is recommended that measures taken by the Central Bank measures aimed at strengthening and preserving banks' capital and encouraging flexibility in loss accounting must continue for as long as the Covid 19 situation lasts. Such measures are important because they support commercial banks residence during the pandemic.
- Commercial banks should have a strategy in place to engage with borrowers as soon as they show signs of distress, and any issues should be adequately addressed. Good strategies can only be developed if banks are able to differentiate between viable, non-viable, and viable but distressed debtors at a granular level, grouping borrowers with similar characteristics and resolving them in a comparable way. However, not all banks were able to achieve adequate borrower segmentation. In some cases, this led to the underlying risk not being sufficiently detailed and addressed in the strategy. In other cases, banks did not provide a realistic assessment of the operating environment, which would weaken any strategy and, in turn, limit the amount a bank could recover should a large number of borrowers ultimately defaul**t**

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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