IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 23, Issue 4. Ser. IV (April 2021), PP 38-46
www.iosrjournals.org

Second-tier banks' balance sheet risk assessment in Bukavu city.

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Abstract
The measurement of the profitability of banks in the DRC is based on traditional analysis tools, ie the income statement and management ratios. It's true that the latter make it possible to rate the profits that the bank gets, but do not make it possible to aim a goal of improving profitability. The instability of the banking system is appeared an acute liquidity crisis until the mid-1990s and embased all the continents in general and particularity Africa above all the DRC.
In fact, this work aims at estimating the balance sheet risk of second tier banks in Bukavu city. Identifying the various factors and other risks associated with balance sheet risk; and analyzing the models that explain,clearly the relationship between balance sheet risk and the set of factors that explain it.
We performed the Ordinary Least Squares (OLS) method to identify the relationship between balance sheet risk and the bank internal, external and specific factors of the bank. Thus, the determinants of the balance sheet risk of second-tier banks are: credit risk, bank capitalization, bank profitability, bad debts, volatility of resources and the size of the Bank.
Our results showed that the level of balance sheet risk of second-tier banks in the Bukavu city is high because of the increase in credit by the per population, whose purchasing power has fallen down significantly during these eight years of studies. .
Keywords: *Estimation, balance sheet risks, second-tier banks, Bukavu city*

Date of Submission: 02-04-2021 Date of Acceptance: 16-04-2021

I. Introduction

The amplification of financial globalization at the start of the 1980s, was characterized by strong liberalization, led to significant volatility in banking services and new threats or forms of risk for banks (H., V., Greuning, S ., B., Bratanovic, 2004). This instability of the banking system appeardin an acute liquidity crisis until the mid-1990s and a verwhelmed all continents especially Africa and paricularloy in the DRC. While the positive effect of privatization on the performance of non-bank enterprises has been sufficiently verified (al G. v., 2005), the post-privatization performance of banks remains subject to conditionalities. According to N., Boubakri and al. (2005), a privatization of the bank in a developing country, which implies a local majority control, causes the bank to face, in the short term, a significant balance sheet risk at a high interest rate so that it may weaken profitability and liquidity which were needed. (I. Otchere, 2005) Checks that in low-income countries, the privatization of banks is a source of long-term underperformance because after five years of holding the shares acquired during the privatization, there is a loss in value is 24%. The studies of G., Clarke, R., Cull, M., Shirley, (2005) helped us that the positive effects of the privatization of a bank in a developing country depend on 4 factors especially: the ensrance of strategic investors into the capital; the abandonment of state intervention in the control of the bank; the presence of the foreign banks in the privatization process and the non-restriction of competition by the state.

The 2007and 2008 banking crisis has also caused considerable losses for the banking sector, the scale of measures taken to support the banking system was very worse.As time went on,, banks have pursued activities other than their traditional activities of financial intermediaries. The expansion of activities has been accompanied by an increase in leverage, while the capital base of banks has not increased in parallel (Costisor, 2010)

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In addition, the crisis has also shown that a large part of banks' stock of capital is effectively unable to absorb losses. Their increased reliance on short-term funding has also increased banks' exposure to liquidity shocks. Throughout this crisis, the authors note write: "We have seen that the banks have not provisioned sufficient liquidity reserves. The main problem is that liquidity is expensive to maintain". The only incentive to get banks to keep it out of government intervention is to protect against high price volatility.when howeverthere is high price volatility, crises arise. When prices drop to lower levels, it can bankrupt financial institutions. (wanda, 2007).

Moreover, after this crisis, banking intermediaries tried to maintain their productions while regulators tried to maintain a stable banking system.For this reason, the World Bank caused a failure of the global financial system, causing numerous bank raptly., As a result, a lot of strategies were needed to strengthen the financial sector. The anecdotal evidence of bank failures during this financial crisis supports these theoretical and empirical findings. The Official reports of FDIC(Federal deposit Insurance corporation) and OCC (Congolese control office) report on bank failures (referring to as "material loss reports") may explicitly be stated that the majority of commercial bank failures during the recent crisis were caused in part by the occurrence of balance sheet liquidity risks. For example, large loss reports from the Federal Deposit Insurance Corporation (FDIC) indicate that liquidity risk and credit risk contributed to most commercial bank failures in the course of the recent crisis.(Rauch; 2013) In this way, banks are socially useful, if they aim at transforming short-term resources in to medium and long-term credits and therefore transforming maturities, which are exposed to liquidity risk. It is noteworthy that the international harmonization of banking regulations, through the Basel I (1988) or Basel II (2004) agreements, has excluded such liquidity risk from its scope. (Hennie, 2004)

In a financial and information asymmetric environment, two types of liquidity shocks threaten banks: they are : the first shock is the idiosyncratic shock, which affects a bank individually via self-fulfilling bank rushes (Dybvig, 1983) or based on informationabout how well is the bank. The second shock is the dangerous systematic shock. This shock paralyzes the whole banking system. These two types of shocks are not independentof one another. The first can particulary provoke the second by contagion. . In addition, the accumulation of liquidity in some banks that is liquidityhoarding can catalyze the systemic crisis by blocking the functioning of the interbank money market, asit was shown in the recent banking crisis. This accumulation of liquidity is explained by a lack of confidence in other banks or the fear of not being able to meet one's own liquidity needs in the future (Heider, 2009).

This behavior leads to a natural blockage of interbank loans in the interbank market by depriving them of a significant source of liquidity.

On one hand,, Congolese banks are also exposed to balance sheet risks that arise due to the risk a great number of withdrawal of liquidity resulting from the inability of banks to handle liquidity; credit risk, which results from banks' problem in managing funding; the risk of asset-liability mismatch, and the limited accessibility of the money market in accordance with the principles of the interbank market (Hesse, 2008)

On the other hand, these reasons for the appearance of balance sheet risks in the Congolese banking system have highlighted the need for their management procedures. These various reasons justify the implementation of this study to analyze the extent of the balance sheet risks of second-tier banks in the DRC in general, particularly in the Bukavu city.

The writers try to make some questions and answer them this way :

- What is the level of second-tier banks' balance sheet risk in the Bukavu city?
- What are the determinants of the balance sheet risk of second-tier banks in the Bukavu city?

H1: The level of balance sheet risk of second-tier banks in the Bukavu city is high because the increase of credit risk bypopulation, whose purchasing power has fallen down

H2: The determinants of the balance sheet risk of second-tier banks has insufficient liquidity (liquidity risks), bad debts in total assets (which is a good measure of the level of balance sheet risk), the volatility of bank resources. measured by the amount of sight deposit to the total amount of deposit, the ratio that measures credit quality, as well as the size of the bank measured by the level of a bank's assets over a given period, its bank capitalization and bank profitability.

In general, , this study deals with estimating the balance sheet risk of second-tier banks in Bukavu city.

The specific objectives of this study are ::

- Identify the various factors and other risks related to balance sheet risk;
- Determine the determinants of the balance sheet risk of second-tier banks in Bukavu city. Analyze models that clearly explain the relationship between balance sheet risk and the set of factors that explain it.

We considered a period from 2012 to 2019, that is eight years for observations. The study took this time in order to conduct good research in order to get good results.

I. THEORETICAL FRAMEWORK

- Definition of a bank and its role

A bank is known for its activity as a financial intermediary, linking workers who excess funding and workers in need of funding. It is a financial intermediary insofar as its traditional function is to grant loans and collect deposits. (Yumba, 2016)

According to the Dictionary of Economics, "The bank is an enterprise that gets funds from people, in the form of deposits or savings. It re-uses depositors' money by distributing loans and carrying out various financial transactions. It manages and makes means of payment available to its customers (check, bank accounts, transfer, etc.).

It creates money thanks to the loans it grants and by "buying" loans which are granted to non-financial agents (trade bill,) "(gherardi, 2000)

According to LE GOLVAN: "Banks are those establishments which make it their usual business to receive from the public, in the form of deposits or otherwise funds which they use for their own account in discounting, credit or financial transactions. This definition is essentially based on the money trade, a traditional and technical view of banking activity "(Golvan, 1988)

- Bank activity

Nowadays, banking activity is completely diversified, however its core businesses remain intermediation and management of payment means. Thus, banking regulations retain three operations, namely: the receipt of funds from people; Credit operations and the provision of customers as well as the management of payment means Its functions can be compared to the economical functions of financial intermediaries. In this way (parkin, 2003), says : because banks provide 4 services for which individuals and enterprises which members are able to pay, it is :;

-The creation of liquidity: The bank creates liquidity, that is to say that the assets that can be converted quickly into money and without noticing a great loss. In addition, some of the liabilities of financial institutions are themselves money; others are very liquid assets. Financial institutions create liquid by borrowing short term and lending long term. They borrow short term by accepting deposits which they undertake to repay with notice (even without notice in the case of demand deposits);

-Reducing the cost of borrowing: Financial institutions including banks reduce borrowing costs by allowing the business that needs money with a single lender.

-Reducing borrower monitoring costs: Lending money carries risks, as there is always the possibility that the borrower will not pay back what he owes.

-Share its risks: We have just said earlier that it is risky to lend the money, because if the borrower does not repay his debt, the money that he lent becomes a total loss, a loss which is dangerous to a particular person.3) Banking risk

Etymologically, the word risk comes from Latin "resecare" which means "to cut". Thus, in its current meaning, risk is the occurrence of a negative event, or even a danger, which "cuts" off, disrupting the normal course of an activity or a process.

The Banking risk can be defined synthetically as "the temporal uncertainty of an
event with a certain probability of occurring and putting the Bank into difficulty of functioning"(desmicht, 2004)

From this definition, one can point out two essential elements that characterize the
Risk in the banking sector:

• Random and unpredictable nature (which is the source of the risk);
• The issue linked to the bank's future results and losses (final consequence).

A banking risk is a risk to which a banking establishment faces during a banking activity.

The main banking risks are credit or counterparty risk, market risk, liquidity risk, operational risk, interest rate risk and foreign exchange risk.

- Bank exposure to balance sheet risk and the source of bank balance sheet risk

The weak balance sheet structure exposing banks to liquidity risk.

Banks create liquidity on the liabilities side through the issuance of deposits, payable debt securities and on the asset side through liquid credits granted to investors. These two elements of the liquidity creation function contribute independently to the liquidity service addressed to the depositor and investors. They also justify the weakness of the balance sheet structure.

On the liabilities side of the balance sheet, banks create liquidity by providing a liquidity insurance service for depositors through deposits. Indeed, depositors are used as a means of transaction and a store of value. Their value does not vary over time, that is, they are insensitive to public or private information (gary goston, 1990).

On the contrary toto capital markets, banks create safe, non-risky liquid assets, that are , independent of information asymmetries between informed and uninformed investors (Dang T, 2017)

➢ Bank balance sheet liquidity hoarding

By the financial environment, banks are encouraged to hoard more or less liquidity on their balance sheet assets. This behavior is, in fact, determined by the need of people and therefore the market price of liquidity changes inversely to the price of illiquid assets (Gale, Liquidity hoarding, 2013)

Thus, the volume of liquid assets held on the bank balance sheet is relatively low in times of growth and relatively high in times of recession. First, there is a precautionary motive in hoarding liquidity. On the one hand, banks refuse to lend any bank that may be affected by a source of credit risk. The liquidity risk on the interbank market can be explained by an increase in counterpart perceived by inventors (Heider, 2015).

In addition, liquidity hoarding is inefficient due to uncertainties about future liquidity shocks and the incentives to hoard. But also because of the existing market power and strategic behavior, banks with excess liquidity are incentivized to provide less liquidity to the interbank market which is then rendered inefficient. The holding of liquidity by banks thus depends on the liquidity of assets. When an asset liquidity is high, banks have less than social optimal level of liquidity. This is probably due to the illusion of continuity of liquidity during economical growth, where in assets are liquid, and there is risk aversion market turbulence, so assets become illiquid (Breton, 2007).)

➢ Sources of balance sheet risk

Identifying the sources of liquidity makes it possible to highlight the elements that may expose a credit institution to liquidity risk. The main sources of liquidity risk are detailedas folaws :

- Transformation of maturities:

Credit institutions, particularly retail banks, collect resources that are essentially short-term (demand deposits) are likely to be withdrawn (special regime savings) and provide short-term but also medium-term and long-term financing (for example, buyer loans granted to households and equipment loans allocated to entreprises). An institution's policy may also ask for short-term loans to finance the storm of longer assets (the securities that the bank keeps until maturity). Of course, these assets can be loans granted to customers. However, if the objective is strictly to collect a yield differential by transforming the maturities, the assets will rather be interbank loans or securities (Calvet, 2002)

- Counterparty failures

Any credit is an anticipation that becomes a real credit in the futureand any credit involves risk. This income does not occur and no reimbursement or only a partial reimbursement is done when due. Likewise, each purchase of a security poses the risk to the bank that the issuer of the security will be unable to pay the income attached to this security or to repay it at maturity (hence an initially expected lack of liquidity.) (calvet, 2002)

- Access to capital

Another essential aspect is the ability of the bank to obtain additional resources. An ease of accessing to capital depends on the specific characteristics of an institution: its capital needs and regularities, that is the quality of their planning over time, its financial status, and its solvency. (Bratanovic, 2004)

➢ The attitude of default towards the credit institution

Significant losses, which result from counterparty defaults i.e. non-repayment of loans granted or adverse market developments, can raise doubts about an institution's solvency. (calvet, 2002)

➢ Economical crisis

During economical stress, getting funds on the markets becomes difficult and expensive for everyone. Market liquidity directly affects an institution's ability to raise capital. It manifests itself in the volumes traded, the level of rates and their regular fluctuations, the difficulty in finding reliable counterparties in a tight market (Bratanovic, 2004)

➢ The concentration of deposits and the volatility of funding

Concentration of deposits is dependence on a single source of funding. When a bank has several important depositors, and one or more of them withdraw their funds, the bank may face difficulties if it is not able to find quickly other financing alternatives to replace huge out flows. (Bratanovic, 2004)

II. Methodological Framework

II.2.1. Presentation of study variables

1 ° Endogenous variable

The endogenous variable retained within the framework of our study is the Balance Risk. We would like to remind the reader that balance sheet risk constitutes the dependent variable and is measured by the following ratio: bank liquidity (equivalent to liquidity risk) by using liquid assets in total assets. (Nabi, 2013) Have used this indicator the most popular for bank balance sheet risk. Thus, credit risk is measured using the ratio of non-performing loans to total gross loans (credit risk). Considering on the definition used previous, a decrease in bad debts suggests an improvement in the quality of bank assets. Researchers (al A. e., 2011); (Iqbal,

2012); (Munteanu, 2012) show that the ratio of non-performing loans has a negative relationship with liquidity risk.

2 ° Exogenous variables

In exogenous variables, our study has focused on estimating the balance sheet risk of second tier banks in the city of Bukavu, using a set of bank specific factors, namely: bank capitalization, asset quality, profitability, and size of the bank. The choice of these variables was motivated by the fact that they are under the control of the bank's management, so we could analyze how these internal factors influence the balance sheet risk of second-tier banks. We used as an indicator of liquidity risk (the quality of assets), the ratio of non-performing loans or bad debt.

Bank capitalization: it is calculated as the ratio of equity to total assets. Previous research by (al A. e., 2011) and Iqbal (2012) shows that the capital adequacy ratio has a positive and significant impact on balance sheet risk, this suggests a large CAR means that banks have a large capital, which means that the capital can be used to cover their due dates and the bank will have less difficulty.

Bank profitability: it is measured using return on assets which is defined as the ratio of net profit to total assets (ROA). Other accounting-based indicators have been used in the literature as a proxy for profitability, including return on equity which is defined as the ratio of net profit to equity and net margin defined as interest income net in total productive assets. Shen et al. (2009) and Sharma and Gounder (2011) find that profitability has a positive impact on balance sheet risk.

The size of the bank: it is defined using the logarithm of the total assets of the bank. Ahmed et al. (2011); Akhtar et al. (2011); (al A. e., 2012) and Iqbal (2012) show that the bank size has a positive relationship with balance sheet risk.

Resource volatility: This variable is measured using the demand deposit to the total amount of deposits (DAV / total deposits). It is a continuous variable therefore the increase reflects the high weakness of resources for long-term loans. (Wanda, 2007). Have a positive impact on balance sheet risk.

II.2.2. Presentation of the selected model

In order to identify the relationship between balance sheet risk and internal, external and specific factors of the bank, we performed the ordinary least squares (OLS) method. Using this method, we can identify the determinants of balance sheet risk. Iqbal(2012) find that CB, RB, CB, VR and size have a significant effect on the bank's balance sheet. Thus, our model which was proposed is coherent with the general documentation on the determinants of balance sheet risk and takes the following form:

Balance sheet risk = f (CB; CD; RB; RL; VR; size;)

This study shows that the balance sheet risk (the inverse of bank liquidity) is a function of the ratio of the adequacy of bank capitalization (BC), of the ratio of the non-performing loan or bad debts (credit risk), the bank profitability (RB), bank size, resource volatility.

This equation is written as follows :$RL = \beta\_0 + \beta\_1 CDt + \beta\_2 RBt + \beta\_3 CB + \beta\_4 TB + \beta\_5 VRt + \beta\_6 RL + \varepsilon it$

In fact, our work is a study of panel data, the previous equation can be written as panel data in the following way:

$RL = \beta\_0 + \beta\_1 CDt + \beta\_2 RBt + \beta\_3 CB + \beta\_4 TB + \beta\_5 VRt + \beta\_6 RL + \varepsilon it$

Where i represents the bank which represent the 5 banks located in Bukavu represents time (our research period from 2012 to 2019); RL represents bank liquidity (the inverse of liquidity risk); CD stands for bad debt; RB represents bank profitability; CB represents bank capitalization and VR represents resource volatility :

Table 1: description of the variables

Variables	Acronyme	Nature	Description	Signe attendue
Risque Bilanciel	RB	Quantitative	(Liquid assets) / (Total assets)	Variable endogène
Risque de crédit(crédit et autres placement)	*RCAit*	Quantitative	Ratio of Credit Granted divided by Total Bank Assets	Négative
Capitalisation bancaire	*CBit*	Quantitative	capital / total assets	Négative
Rentabilité des banques	ROA_{it}	Quantitative	(net income) / (total net assets)	Positive

	ROE_{it}	Quantitative	(net income) / (equity)	
La taille de la banque	TBit	Quantitative	Neperien logarithm of the asset total	Négative
Volatilité de ressource	VR_{it}	Quantitative	Sight deposit / total deposit	Positive

Source : Our confection

II.2.3. Collection of Data

The data used in this research on the estimation of balance sheet risk in second-tier Congolese banks were collected from the World Bank database (World Development Indicators), specifically the Word Africa data base. They are annual observations covering the research period from 2012 to 2019. The choice of the World Bank database is justified by the concern for harmonization and availability of information at the level of each State. The empirical analysis concerns a sample made up of six commercial banks operating in the DRC and the data collected covers the research period between2012-2019, relating to five Congolese banks (Rawbank, TMB, BCDC, Procredit, Sofibanque), These banks constitute the essential banking fabric (AfDB report, 2019).

III. Results

This chapter is the main part of our work, because through it t we will present, analyze and interpret the results in order to obtain the results that we have been searching for eight years. After presentation and analysis of different variables for 8 years, that is from 2012 to 2019, , we proceeded to a selection and treatment of the relevant variables for our model.

III.1. Analysis of the stationarity of variables

Table 2. Analysis of the stationarity of the variables

Variables	Stat. ADF	**Critical value**	**With trend**	**With constant**	**conclusion**
RL	-5.449422	-3.5478	NO	Yes	I(1)
CB	-4.057360	-3.543680*	NO	Yes	I(0)
RB	-6.795447	-3.5478	NO	Yes	I(1)
CD	-5.79347	-3.0478	NO	Yes	I(1)
VR	-4.023427	-3.5078	NO	Yes	I(1)
TB	-5.083190	-3.5478	NO	yes	I(1)

Source : our confection

Reading this table allowed us to distinguish between stationary variables and those which are not stationary in order to avoid any spurious regressions. Thus, we found that among the variables studied, only the bank capitalization is stationary in level while all the other variables are stationary in their first difference.

✓ JOHANSEN Co-integration test

The Co-integration test was carried out on variables that were not stationary in level but integrated in the same order.

Table 3 Test assumption: Linear deterministic trend in the data

Series : RL CB RB CD VR TB				
	Likelihood	5 Percent	1 Percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.201975	20.49799	29.68	35.65	None
0.081127	7.412268	15.41	20.04	Atmost 1
0.042271	2.505050	3.76	6.65	Atmost 2
*(**) denotes rejection of the hypothesis at 5%(1%) significance level				
L.R. Cointegrating at 5% significance level				

Result of the software Eviews 3.1

We applied this test for non-stationary at level but integrated variables of the same order. Thus, for the efficiency rate, the variables analyzed and integrated of the same order (1) are among others: bank profitability and bad debts. Therefore, Johansen's Co-integration test, which offers maximum likelihood estimators to test the Co-integration of series, performs a Co-integration rank test.

In addition,, as the rank of Co-integration for our series is equal to 1, we confirm that our series are Co-integrated, that is to say, the liquidity rate, bank profitability and bad debts have a certain relation to balance sheet risks.

Hence the following standardized Co-integration model:

Table 4 : Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

RL	CD	RB	CB
1.000000	58.79316	-7.574225	-159.4552

Result of the software Eviews 3.1

The evolution between these three what indicates that 1% increase in bad debts would generate 58.79% increase in the balance sheet risk of second-tier banks in the Bukavu city. While a 1% increase in bank profitability would lead to 7.57% drop in the balance sheet risk of second-tier banks in the same city

III.2. MCE ESTIMATION RESULTS

Table N ° 5: Estimation of the error correction model (MCE)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CD	0.480301	0.079959	6.006872	0.0000
RB	-0.261547	0.044328	-5.900298	0.0000
CB	4.173350	1.364839	3.057759	0.0043
TB	-44.15261	30.11079	-1.466339	0.1517
VR	0.182315	0.067631	2.695712	0.0108
RL	0.114825	0.053030	2.165296	0.0375
R-squared	0.769551	Meandependent var		66.98386
Adjusted R-squared	0.735662	S.D. dependent var		22.72955
S.E. of regression	11.68613	Akaike info criterion		7.892164
Sumsquaredresid	4643.234	Schwarz criterion		8.145496
Log likelihood	-151.8433	F-statistic		22.70765
Durbin-Watson stat	2.028635	Prob(F-statistic)		0.000000

Result of the software Eviews 3.1

The board given above relates to the estimation of the balance sheet risk model of second-tier banks in the city of Bukavu. In fact,, the results related to it which were show that the three variables considered individually are significant. They are bank profitability, bad debts and bank capitalization. The results show that their probabilities are below the threshold of 5%.

Then, one noticesa negative influence of profitability on the balance sheet risk of second-tier banks in the city of Bukavu (seer coefficient -0.26).

In addition, it should be noted that the coefficient of the cointegration model or coefficient of return force towards equilibrium (CD) is positive (0.48) and significant because prob (0.00) is below the threshold of 1%. It means that there is a long-term causality or cointegrating relationship, as in the case of the variable CB towards the balance sheet risk of these banks because they have a positive coefficient (4.17) and significant being it is less than 5%. (here 0.0043).

The R-Squared (0.769) gives us an idea about the explanatory power of the model; that is, the model is good; while the F-statistic (0.00000) below threshold of 5% indicates that the model is well specified. Moreover, Durbin-Watson stat (2.028635) lying around 2 shows that there is no autocorrelation.

III.3. GRANGER CAUSALITY TEST RESULT

Tableau N° 6 : test de causalité granger

NullHypothesis:	Obs	F-Statistic	Probability
RB does not Granger Cause RL	5	1.98730	0.14715
RL does not Granger Cause RB		1.02159	0.36700
CD does not Granger Cause RL	5	3.78764	0.02901
RL does not Granger Cause CD		0.81719	0.44716
CB does not Granger Cause RL	5	1.36658	0.26381
RL does not Granger Cause CB		1.47322	0.23842
CD does not Granger Cause RB	5	1.70987	0.19072
RB does not Granger Cause CD		0.32224	0.72593
CB does not Granger Cause RB	5	1.84330	0.16830
RB does not Granger Cause CB		0.53653	0.58792
CB does not Granger Cause CD	5	0.39552	0.67530
CD does not Granger Cause CB		6.60909	0.00274

Result of the software Eviews 3.1

The results presented in this board allow us to identify the direction of causality between balance sheet risk and the different indicators used in there search. Granger causality test allowed us to do this by testing the causality hypothesis between the variables. This hypothesis will be accepted if and only if the probability associated with the confidence threshold is less than 5%.

Morever, we find that there is a causality ranging from bad debts and balance sheet risk to a probability of less than 0.05. That is 0.02901

Increasing in bad debts in the second tier banks of Bukavu city causes an increase to their balance sheet risk.III.4.TEST ON THE CORRELATION OF THE SERIES

Table 8 : Breusch-Godfrey Serial Correlation LM

F-statistic	1.772348	Prob. F(2,28)	0.1885
Obs*R-squared	4.944305	Prob. Chi-Square(2)	0.1844

Result of the software Eviews 3.1

The above results show that the Fisher statistic is 1.772348 with an associated probability of 0.1885 and the Chi-Square probability of 0.1844 above the threshold; of 5% push us to confirm that the hypothesis of the non correction of the series is null.

IV. General Conclusion

The topic of this study was "second tier-tier banks'balance sheet risk assessment in Bukavu city", it aimed at estimating the balance sheet risk of second-tier banks in the city of Bukavu, identifying different factors as well as other risks related to that balance sheet –risk and analyzing models that clearly explain the relationship between balance sheet risk and all other factors that explain it. .

We have formulated the hypotheses according to which: the level of balance sheet risk of the second-tier banks in Bukavu city would be high because of the increase in credit risk by population whose purchasing power has fallen significantly. In addition, the determinants of the balance sheet risk of second-tier banks would be insufficient liquidity (liquidity risks) due to bank capitalization, and bank profitability ratios. the amount of bad debts in total assets (which measures the level of balance sheet risk), the volatility of bank resources measured by the amount of demand deposits to the total amount of deposit, the ratio that measures the quality of credit, as well as the size of the bank as measured by the level of a bank's assets over a period have also made a great contribution.

In order to check the hypotheses, the ordinary least squares method gave us the level of link between the different variables and helped estimate the balance sheet risk of second-tier banks Bukavu city. After analysis, we found that the level of balance sheet risk of second-tier banks in the city of Bukavu is high because of the increase in credit risk by population, whose purchasing power has fallen significantly down..

The determinants of the balance sheet risk of second-tier banks are: credit risk (0.0375), bank capitalization (0.0043), bank profitability (0.0000), bad debts (0.000), volatility of resources (0.0108) and the size of the Bank (0.1517).

In the end, one knows that the present work is a human being one, we think that we didn't talk about all its aspects perfectly. We have just contributed to make a research on it and suggest other researchers provide our readers as well as ourselves with its completion.

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Bahati Bishenjwa Justine, et. al. " Second-tier banks' balance sheet risk assessment in Bukavu city." *IOSR Journal of Business and Management (IOSR-JBM)*, 23(04), 2021, pp. 38-46.