Causative Factors of Concentration Risk in Deposit Taking Rural Banks: Evidence from Ghana

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Abstract

This study looks at the deposit concentration risk of rural banks in the Eastern Region of Ghana. Using a descriptive and exploratory research design, it examines the difficulties brought on by deposit risk as a result of large depositors' making unexpected and/or early withdrawals. According to the survey's findings and the F value calculated at a 5 percent level of significance, the majority of the rural banks chosen for the study had a high deposit concentration risk. Additionally, it has been found that deposit concentration risk affects how well the chosen rural banks operate. In other words, poor operational performance is likely to come from a high deposit concentration risk, whereas a low deposit concentration risk is likely to result in excellent operational performance because a low deposit concentration risk implies funding liquidity on the part of rural banks. Thus, the study found that the major causes of the deposit concentration risk experienced by the chosen rural banks were low-interest rates on investments, closely followed by a decline in customer confidence in rural banking. The impact of poor corporate governance, on the other hand, had the lowest ranking among the six factors creating deposit concentration risk.

Keywords

Deposit risk, Rural bank, Concentration risk, Interest rate, and Corporate governance.

1. Introduction

In 2017, the pre-tax return on shareholders' equity (ROE) of the rural banking industry was 22.11 percent (Apex Rural Bank, Apex Bank, 4th quarter 2017 Performance Review). This performance was significantly below the regulator's minimum benchmark of 30.0 percent. Also, only 29 rural community banks, out of a total of 141, were rated strong. A few observers have accused the industry's poor performance on a variety of factors, including structural bottlenecks (Hoang et al., 2017; Yu, 2013).

According to the (Committee of European Banking Supervisors, 2011), concentration risk is well-defined as an exposure (s) that can lead to serious losses that involve financial problems or changes in the risk profile of an institution. In a more literal sense, concentration risk can be defined as the risk associated with any individual exposure or group of exposures, such as depositing clients and borrowers, with the likelihood of producing sufficient losses to threaten the central operations of a financial institution. The issue of deposit concentration risk is not only limited to the rural banking sector in Ghana but also to the commercial banks in Ghana. For instance, customer deposits, according to the Bank of Africa (BOA) Group's 2015 annual report, went up by 14.1 percent from GHS 548.2 million in 2014 to GHS 625.6 million in 2015. Again, the overall customer's deposits as at December 2016 was GH 679,980,171 compared to GH 743,278,000 for the period June 30, 2017. This clearly indicates that deposits have been increasing over the years by a significant percentage. Nevertheless, the success story is destabilized by an invisible challenge, so to speak, as just about 9 percent of the depositors from Bank of Africa, Ghana accounted for 52 percent of total deposits of June 30, 2017. The scenario is almost the same in most financial institutions in Ghana, with rural banks not being an exception. Apex Bank's EMU Report (2010) reveals that although rural banks have been able to increase their customer base from 2,493,004 in 2006 to 3,386,674 in 2010, they have not documented large deposits from many depositors to equal the numbers. This suggests, therefore, that few depositors credit large sums of money relative to a large number of customers. It is therefore of great importance to investigate the situation of deposit concentration risk as it can negatively impact Ghana's rural banks' performance in the long run. This survey observes the effect of deposit concentration risk on the operational performance of some rural banks in the Eastern Region of Ghana. It looks at the challenges arising from deposit risk as a result of large depositors making sudden and/or early withdrawals and how to mitigate it by way of making recommendations. The large deposits could pose a threat to rural banks' capital base across all of their branches; thus, an early withdrawal may perhaps be anything earlier than the account owner's realization of an arranged maturity of a fixed-term investment or simply a withdrawal of credit just after making deposits (Boohene et al., 2018).

According to the Basel Committee on Banking Supervision (2008), deposit concentration risk is one type of liquidity risk usually faced by financial institutions where a small number of depositors can make huge withdrawals at any given time. To put it another way, it refers to the risk of likely cash outflows from a financial institution brought on by changes in depositor behavior. Its component

parts include run risk, rollover risk, and early withdrawal or redemption risk. According to the Birla Institute of Scientific Research, the achievement of significantly high growth in deposits, advances, branches, etc. has clearly shown the high quality of entrepreneurship and management of these banks. This suggests the expansion in deposits plays a significant role in the stability of financial institutions.

2. Review of the Literature

2.1 Empirical Review

A key feature of the new regulations is that the required liquidity depends not only on the type and maturity of bank financing but also on the type of depositors that a bank serves; banks with closer ties to depositors may have less liquidity. Related deposits are presumed to be a more stable source of financing (BIS, 2013). In order to give a more thorough analysis of retail deposit withdrawals from troubled banks, Iyer et al. (2013); Davenport & McDill (2006) use client-level administrative data. Davenport and McDill (2006) document that the outcome of deposit insurance on withdrawals is mainly due to commercial accounts as opposed to retail deposit accounts. Iyer et al. (2013) show that, in addition to deposit insurance, customer information about the bank can affect the withdrawal of money from a troubled bank.

According to a geographic mapping of sub-prime and Alt-A loans in the Phoenix metropolitan area (Gwinner & Saunders, 2008), sub-prime loans are heavily concentrated in lower to middle-income groups of the population (or small business owners who don't relish disclosing all of their income), newly constructed houses (many of them are refinancing), and especially in urban areas, according to a report by Gwinner & Saunders (2008). This example highlights the significance of monitoring concentration risk in bank credit portfolios because it can result from links between asset classes across sectors, geographies, income levels, and population groups, in addition to exposures to a single creditor or asset class. The losses are greater when multiple borrowers default at once. Lopez (2004) empirically derived asset correlations for portfolios of US, Japanese, and European enterprises using the structural model's structure. His paper illustrates that for relatively large organizations, the correlation of activities is high.

According to his explanation, the reason for this report derives from the fact that high-quality companies are more likely to be influenced by common macroeconomic conditions. Concentration risk's emergence is closely correlated with banks' emphasis on corporate strategy. International experience suggests concentration risk has a direct impact on a bank’s portfolio loss and hence core capital and solvency position. Managing

concentration risk entails reducing the effects of idiosyncratic risk brought on by significant exposure to certain systematic risk brought on by dependency on losses across loans.

According to Bandyopadhyay (2010), the majority of Indian banks have generated and are now holding loan exposures that are a function of their geography and industry orientation.

2.2 Theoretical Review

Forms of Deposit Risk

An early withdrawal risk of time deposits is a risk that a depositor will withdraw his deposit from an account before the agreed maturity date. It could occur when the corresponding option has been declared in a deposit agreement or determined by local laws. When an advance withdrawal is made, the depositor usually incurs a commission or early withdrawal penalty.

Depositors who refuse to roll over their matured time deposits run the danger of losing their money. It is connected to debt refinancing and is frequently encountered by nations and businesses when their existing debt is ready for maturity and must be rolled over into new debt.

They would have to refinance their loan at a higher rate and pay more interest moving forward if interest rates rose negatively.

The run risk of non-maturity deposits is the chance that a depositor will withdraw funds at any moment from their accounts. Therefore, a "run" risk combines the traits of a rollover risk and an early withdrawal risk.

For example, it happens when depositors anticipate that a bank will fail, Diamond et al. (1983). In this sense, if a financial institution is unable to take in fresh deposits in place of withdrawn ones, these risks could cause its liquidity to decline or even disappear. Wherein, the impossibility of the financial institution to refinance by borrowing in order to repay existing deposits is called a refinancing risk. Early withdrawal risk affects turnover risk by reducing the cash flows that will be repaid in the future. The risks of early withdrawal and turnover depend on a delay at the end of the deposits. The higher the degree of maturity, the higher the risk of early withdrawal and the lower the risk of turnover, and vice versa. The primary financial determinants of early withdrawal and carryover risk are the interest rates of the financial institution and its competitors; the maturity and age of the deposit; the creditworthiness of the financial institution; and the amount of deposit insurance.

Exposures to deposit risk Chronological experience shows that deposit concentration risk has been one of the major causes of bank distress. This is true for both specific banks and the entire banking sector. Concentrations of deposit exposure can put any financial institution's profits and capital at risk from unanticipated withdrawals. The notable exposures to deposit risk include:

i. The amount of balances in time deposit accounts, excluding deposits that will be reimbursed at this date, represents the exposure to early withdrawal risk on a given date.
ii. The total cash flows from deposits that will mature at a certain date represent the exposure to rollover risk at that time.
iii. The total of the balances in non-maturity deposit accounts at a given date represents the exposure to run the risk at that time.

Liquidity risk Rejda (2008) defines liquidity risk as the possibility for an institution to incur a loss due to its inability to meet obligations upon maturity. The International Monetary Fund (IMF) also defines financial liquidity as "the ability of a solvent institution to make payments in a timely manner" (IMF, 2012). Others, like Holmstrom and Tirole (1998), also indicate that liquidity risk arises as a result of revenues and outlays not being synchronised.

Financial institutions have two fundamental purposes: to provide liquidity (funds) and to provide other financial services. However, the role of financial intermediation by various financial institutions, including banks, threatens their liquidity (Basel Committee, 2008). Until recently, banks could not afford to take risks due to the regulated environment. Nonetheless, banks are now exposed to the same competition and, therefore, are forced to face discrete types of financial and non-financial risks. That is, in our current world of globalization, considering the recent changes in the banking environment, banks have been more exposed to risks since they have tried to improve the performance of shareholders and, as such, have also been forced to support measures to manage these risks to minimize losses. (Casu et al., 2006). Rejda (2008) sees risk management as "a mechanism that identifies exposures with losses to an organization and chooses the most applicable and appropriate techniques for the treatment of such exposures." The author also states that since the term "risk" is a bit vague and can mean many things, many risk experts use the term "exposure to loss" to identify potential losses.

Liquidity in the banking sector is very important since a financial institution must maintain adequate liquidity or other liquid assets to meet customer withdrawal requests and loan applications. (Casu et al., 2006). The

International Monetary Fund (IMF) views or defines financing liquidity as an institution's capacity to make timely payments under contractual agreements while being solvent. (IMF, 2008, p. 11). As also reiterated by Drehmann and Nikolaou (2013), liquidity funding could be seen as the ability of banks to meet their obligations with immediacy, so by indication, funding liquidity risk is the possibility that a bank becomes unable to settle its obligations with immediacy within a certain time frame. When linked to banking, liquidity can be seen as the capacity of banks to meet withdrawal claims of customers, the absence of which can lead to a run on the bank. A "run on the bank" occurs when depositors of the bank try to pull back or withdraw their deposits because they fear that the bank will no longer be able to meet their withdrawal requirements in the future. Such a position or situation could actually lead to the failure of the bank, as the bank's liquidity problems can now pose a threat to the operations of financial institutions.

3. Research Methodology

The study was conducted using a descriptive and exploratory research design. A research questionnaire was used to obtain data from respondents from the deposit-taking selected banks. The sample size for the study was 138 respondents from 10 rural banks. Purposive sampling is involved in identifying and selecting individuals or groups of individuals that are knowledgeable about or experienced with a phenomenon of interest.

Table 1: Number of Rural Banks in Ghana (Region-wise)

Region	Concentration
Ashanti	27
Eastern	24
Brong Ahafo	21
Central	20
Western	14
Volta	14
Northern	5
Greater Accra	7
Upper East	5
Upper West	4
Total	141

***Source*:** ARB Apex Bank, 2017

4. Data Analysis and Discussion

Table 2: Descriptive Statistics Summary of Banks

Groups	Count	Sum	Average	Variance
R.Bank 1	14	25	1.785714	0.181319
R.Bank 2	13	25	1.785714	0.335165
R.Bank 3	14	29	2.071429	0.071422
R.Bank 4	14	20	1.428571	0.263736
R.Bank 5	14	27	1.928571	0.071429
R.Bank 6	13	21	1.615385	0.25641
R.Bank 7	14	20	1.428571	0.263736
R.Bank 8	14	26	1.857143	0.131868
R.Bank 9	14	25	1.785714	0.181319
R.Bank 10	14	24	1.714286	0.21978

Source: Field Data

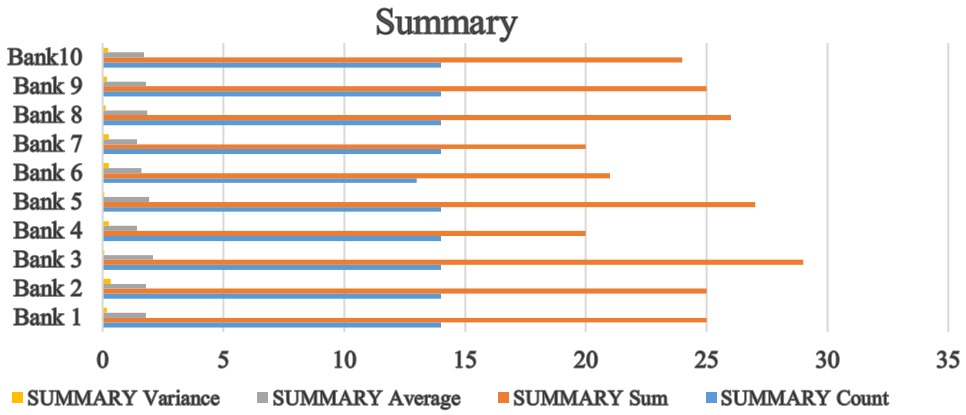

Figure 1: Summary

To determine the deposit concentration risk in selected Financial Institutions as per this study an analysis of variance was used to ascertain the findings. The results of the computed F value indicated high deposit concentration risk exits in the selected Financial Institutions. Thus, this is confirmed by the F value computed at 5 percent level of significance. Therefore, theoretically as per this study it is inferred that there is a high deposit concentration risk in most of the rural banks selected for the study.

Table 2: ANOVA

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	5.242193	9	0.582466	2.954231	0.003182	1.953182
Within Groups	25.43407	129	0.197163			
Total	30.67626	138				

Source: Field Data 2019

Table 2 indicates the extent to which the evidence support the existence of a high deposit concentration risk in the ten selected rural banks under study. Thus, given a scale of 1 to 3 where 1 represents low deposit concentration risk, 2 represents moderate deposit concentration risk and 3 represents high concentration risk it came to light per the analysis that there is a high deposit concentration risk amongst the ten (10) selected rural banks with Bank 3 having the highest mean value of (2.071429) and the lowest variance of (0.071422). The high deposit concentration risk is further confirmed by the F value computed the significance of R2 at 5 percent level of significance. The model was found fit on significance (0.000) which is less than (0.05) level of significance. Therefore, theoretically as per this study it is inferred that there is a high deposit concentration risk in most of the rural banks selected for the study.

Table 3: Test Statistics

	Low interest rate on investment	**BoG recapitaliz-ation policy**	**Reduction in customer confidence in rural banking**	**Poor treasury management by directors**	**Poor saving attitude among rural dwellers**	**Ripple effect of ineffective corporate governance**
Chi-Square	152.145[a]	110.913[b]	195.551[b]	127.362[b]	297.797[b]	113.232[b]
Df	3	4	4	4	4	4
Asymp Sig.	.000	.000	.000	.000	.000	.000
a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 34.5.						
b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 27.6.						

Table 3 shows the Chi-Square test statistic for the six variables ranked as factors causing deposit concentration risk in the rural banks as per this study. From the study, it was realized that the Chi-Square test statistic for all six factors was all significant at, X^2, p= 0.00; $p < 0.05$.

Table 4: Mean Rank of Factors Associated with Deposit Concentration Risk

Variables	Mean Rank
BoG recapitalization policy	3.52
Reduction in customer confidence in rural banking	3.72
Poor treasury management by directors	2.75
Poor saving attitude among rural dwellers	3.59
Ripple effect of ineffective corporate governance	2.57
Low interest rate on investment	4.85

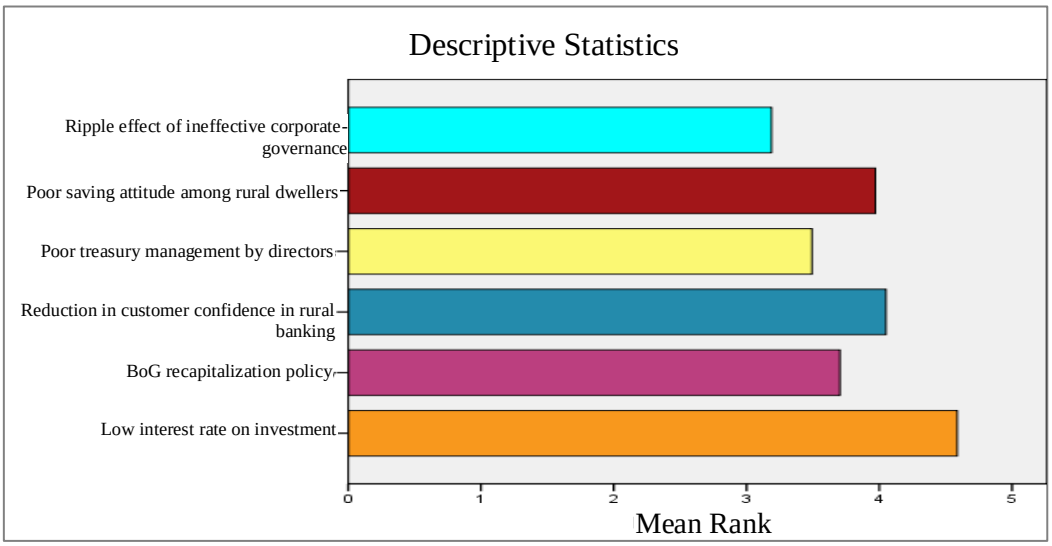

Table 4 ranks the perceived factors associated with deposit concentration risk in the selected rural banks. From the table, it's indicated that low interest rate on investment followed closely by reduction in customer confidence in rural banking are the main factors behind the deposit concentration risk experience in the selected rural banks. This is seen from their high mean value of (4.85) and (3.72) respectively. The least ranked among the six factors causing deposit concentration risk was ripple effect of ineffective corporate governance with corresponding mean value of 2.57.

5. Conclusion

From the findings on the objectives of the study, it can be concluded that there is a high deposit concentration risk in most of the rural banks selected for the study as confirmed by the F value computed at 5 percent level of significance. Also, it is observed that deposit concentration risk is a contributor to the operational performance of the selected rural banks. That is a high deposit concentration risk is likely to lead to a low operational performance and a low deposit concentration risk is likely to lead to a high operational performance as low deposit concentration risk implies funding liquidity on the part of the rural banks. Thus, the study indicated that low interest rate on investment followed closely by reduction in customer confidence in rural banking are the main factors behind the deposit concentration risk experience in the selected rural banks. On the other hand, the least ranked among the six factors causing deposit concentration risk was a ripple effect of ineffective corporate governance.

6. Recommendation

The study proposes monitoring of deposits made by clients so as to counter pro deposit concentration risk situations. Also, large depositors should be oriented on the effects of sudden withdrawals so as to reduce risk liquidity risks. Again, to ensure continuous unswerving cash flow as a measure against deposit concentration risk, financial institutions should seek new business initiatives that can generate lasting stable revenues.

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