Credit Risk Management and Its Impact on Financial Performance of Listed Banks in Ghana

George Ohene Djan¹, Frimpong Stephen², Jonas Bawuah³, Osman Babamu Halidu⁴, Peter Kwame Kuutol⁵

Abstract

The study empirically examines the impact of credit risk on performance of banks in Ghana. In the study parameters covered were; default rate, cost per loan assets and capital adequacy ratio. We used 9 banks listed on the Ghana Stock Exchange (GSE) as sample banks for a 10 year period (2005-2014). Comparing performance ratio to default rate, capital adequacy ratio and cost per loan assets which was presented in descriptive, correlation and regression was used to analyze the data. The study revealed that all these parameters have an inverse impact on banks’ performance; however, the default rate is the most predictor of bank financial performance. The recommendation is that banks should design and formulate strategies that is needed for enhancing credit risk management to maintain the prevailing banks financial performance.

Keywords: Return of Assets, Default Rate, Cost per Loans, Capital Adequacy Ratio,

1. Introduction

Risks in financial services are larger in scope and scale than ever before. Along with revenue maximization and operational cost minimization, risk management has moved to center stage in defining superior performance. Differences in risk management philosophy and technique can produce prosperity, mediocrity, or failure. No senior management of today’s financial institutions can perform its function without a vastly expanded understanding of the dimensions of risk and the various tools to manage it. Banks are in the business of risk. Many of these risks are of a traditional sort: credit risk, interest rate risk, and liquidity risk. However, numerous risks are more recent, such as regulatory risk, currency risk, and human resources risk. The past couple of decades have seen dramatic losses, in the global as well as local in the banking industry.

Das & Ghosh (2007) state that the well-being of financial system has important role to play in the country, as its failure can disrupt economic advancement of a country. Financial performance is company’s ability to generate new resources, from day-to-day operation over a given period of time and it is gauged by net income and cash from operation. The financial performance measure can be divided into traditional measures and market based measures (Aktan & Bulut, 2008). In the 1980’s and 1990’s and the recent past crises when the financial and banking crises became global issue, new technique of risk management banking was developed. To be able to manage the different types of risk one has to define them before one can manage them. The risks that are most applicable to banks are: credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk and solvency risk.

Management of risk is human activity which integrates acknowledgement of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources (Appa, 1996) whereas

¹Kumasi polytechnic, Accountancy Department, P.O. Box 854, Kumasi, Ghana
²Kumasi polytechnic, Accountancy Department, P.O. Box 854, Kumasi, Ghana,
³Kumasi polytechnic, Accountancy Department, P.O. Box 854, Kumasi, Ghana,
⁴Kumasi polytechnic, Accountancy Department, P.O. Box 854, Kumasi, Ghana,
⁵Ramseyer Training Centre, Finance Department, P.O. Box AT10, AbetifiKwahu, Ghana,
Campbell (2007) advanced that credit risk is the risk of loss due to debtor’s non-payment of a loan or other line of credit. Default rate is the possibility that a borrower will default, by failing to repay principal and interest in a timely manner. A bank is a commercial or state institution that provides financial services, including issuing money in various forms, receiving deposits of money, lending money and processing transactions and the creating of credit (Campbell, 2007). Credit risk management is very important to banks as it is an integral part of the loan process. It maximizes bank risk, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk. Bank is investing a lot of funds in credit risk management modeling.

Studies elsewhere suggest that credit risk management is a predictor of bank’s performance (e.g. Poudel, 2012; Haneef et al., 2012 and Raza and Hanif, 2013). For instance, non-performing loans, an indicator of credit risk can reduce the value of a bank and destabilizes the credit system. Agu (1998) stated that loan default reduces the resource base of a bank for further lending, weakens staff morale and affects the borrower’s confidence. The cost of managing overdue loans tends to be very high and this can reduce banks’ profitability levels. In some cases the cost on unpaid loans are shifted to other customers or borrowers in the form of higher interest margin charged on loans.

Nair and Fissha (2010) as cited in Afriyie and Akotey (2013), indicated in a similar study of the Ghanaian rural banking industry that, the degree of loan delinquencies or impaired loans in an RCB’s loan portfolio is often considered the best leading indicator of the institution’s financial performance. Nair and Fissha further revealed that the percentage of loan portfolio that was in default (among the sampled banks) were more than one month was 16 percent. This is too high and unacceptable given the global average of 3 percent for the worldwide micro-banking industry.

Apparenty, most studies in Ghana concentrated on credit risk management in rural banks and mostly uses primary data. Rural banks operate under different settings as compare to other commercial banks in Ghana with different market target altogether and some level of different regulations. There is therefore, the need to investigate whether investment in credit risk management is viable to the banks listed in Ghana. This study therefore seeks to investigate the impact of credit risk management on a bank’s financial performance taken evidence from Ghana Stock Exchange.

2. Literature Review

Credit risk and banks performance has been the concern of emerging studies both in developed and developing countries. Abor (2005) stated that risk management has received extensive attention from both the corporate world as well as the academia. From the studies on this subject matter we present some of the recent studies in this section In developed and developing nations commercial banks routinely perform investment banking activities by providing new debt to their customers (Gande, 2008). The credit creation process works efficiently when funds are transferred from decisive savers to borrower (Bernanke, 1993). There are many possible potential sources of risk as advanced in the study of Campbell (2007), including liquidity risk, credit risk, interest rate risk, market risk, foreign exchange risk and political risk. Campbell further advanced that credit risk is the risk that a loan which has been granted by a bank, will not be either partially repaid on time or fully. Asare-Bekoe (2010) also stated that risk associated with the business of banking can be grouped into credit risk, market risk which consists of foreign exchange risk, liquidity risk and interest rate risk), operational risk which sometimes includes legal risk and most recently strategic risk.

But it is undoubted that credit risk is the biggest risk faced by banks and financial intermediaries (Gray et al., 1997). The indicators of credit risk include the level of non-performing loans, problem loans or provision for loan losses (Jimenez & Saurina, 2006), and where there is a risk of customer or counterparty default (Gray, et al., 1997). Fatemi & Glaum (2000) have stressed the reasons why managers should take strong interest in risk management, because risk management is intended to help an organization meet its objectives such as the minimization of foreign exchange losses, reduction in the volatilities of cash flow, protection of earnings against fluctuations and to promote the survival of the firm through growth and profitability.
Prior to financial sector deregulation, banks were highly motivated to grant credit facility to clients who could easily express their creditworthiness (Bryant, 1999). Deregulation offered the opportunity to meet the demands for credit across a wide range of borrowers. Large amount of bad credit, as a result of boom-time advances in the 1980’s, caused the banks to be too cautious in extending credit (Bryant, 1999).

Credit risk management processes enforce the banks to establish a clear process in approving new credit as well as for the extension to existing credit. These processes also follow monitoring with particular care, and other appropriate steps are taken to control or mitigate the risk of connected lending (Basel, 1999).

Credit granting procedure and control systems are necessary for the assessment of loan application, which then guarantees a bank’s total loan portfolio as per the bank’s overall integrity (Boyd, 1993). It is necessary to establish a proper credit risk environment, sound credit granting processes, appropriate credit administration, measurement, monitoring and control over credit risk, policy and strategies that clearly summarize the scope and allocation of bank credit facilities as well as the approach in which a credit portfolio is managed i.e. how loans are originated, appraised, supervised and collected, a basic element for effective credit risk management (Basel, 1999). Credit scoring procedures, assessment of negative events probabilities, and the consequent losses given these negative migrations or default events, are all important factors involved in credit risk management systems (Altman et al., 1998). Campbell, (2007) stated that most studies have been inclined to focus on the problems of developing an effective method for the disposal of these bad debts, rather than for the provision of a regulatory and legal framework for their prevention and control. Cuthberston & Nitzsche (2003) opined that risk management technology has been renovated over the last decade. The quickness of information flow and the complexity of the international financial markets qualify banks to recognize, evaluate, manage and mitigate risk in a way that was just not possible ten years ago. Banks will have to decide what their risk enthusiasm is, how to assign their resources optimally and how to compete in market. Competitiveness of the market, a bank trade off the risk which allows much more competent risk transfer and portfolio optimization and for all these activities, banks must have a good knowledge about risk management, pricing of loan on competitive market, marginal risk adjusted contribution, monitoring of economic capital (Cuthberston & Nitzsche, 2003).

Credit risk is the likelihood that a borrower will not pay its debt on time or fail to make repayment at all (Sinkey 2002). Conford (2000) advanced the possibility that the actual return on a loan portfolio will deviate from the expected return, i.e loan delinquency and default by borrowers. While loan delinquencies indicate delay in repayments, default denotes non-payment, and the former if unchecked, leads to the latter (Padmanabhan, 1988). Credit risk refers to the delay of repayment on loan contract or the inability of a borrower to pay its debts, which can cause cash flow problems and affect a bank’s liquidity position. Credit risk management is the identification, measurement, monitoring and control of risk arising from the possibility of default payment on a loan contract (Coyle, 2000).

The banks very frequently suffer from poor lending practice (Koford&Tschoegl, 1999). Monitoring, and other appropriate steps, are necessary to control or mitigate the risk of connected lending when it goes to companies or individuals (Basel, 1999). Central bank in Ghana, has issued guidelines which give attention to general principles that are prepared for governing the implementation of more detailed lending procedures and practices within the banks. In Ghana every bank has Credit Policies Guidelines for making investment and lending decisions and which reflect a bank tolerance for credit risk. Prior to consent to a credit facility, the bank should make an assessment of risk profile of its customers, such as of their business, and which can be done through the credit procedure set out by the bank.

Credit risk in the banking industry is mostly caused by adverse selection and moral hazards due to information asymmetry. The credit risk situation of a bank can be exacerbated by inadequate institutional capacity, inefficient credit guidelines, inefficient board of directors, low capital adequacy ratios, compulsory quota-lending as a result of government interference and lack of proper supervision by the central bank (Sandstorm, 2009; Kithinji, 2010). Various authors have outlined credit risk management principles like Santomero&Babbel (1997) and Dowelet et al. (2008). According to Santomero and Babbel (1997) these principles are set up to measure risk exposures, define procedures to manage these exposures, limit exposures.
to acceptable levels and encourage decision-makers to manage risk in a manner consistent with the firm’s
goals and objectives.

Benedikt et al. (2007) studied the credit risk management policies for ten banks in the United States and
found that advance credit risk management techniques (proxies by at least one collateralized loan) help
permanently to achieve their target in loan level. The findings confirm the general efficiency-enhancing
implications of new risk management techniques in a world with frictions suggested in the theoretical
literature. Macaulay (1988) in the United States found credit risk management as best practice in bank and
above 90% of the bank in country have accepted the best practice. Private Banks are more serious to
implement effective credit risk management practice than state owned banks. A study conducted by Kuo&
Enders (2004) of credit risk management policies for state banks in China found that mushrooming of the
financial market; the state owned commercial banks in China are faced with the unprecedented challenges
and tough for them to compete with foreign bank unless they make some thoughtful change. In this
thoughtful change, the reform of credit risk management is a major step that determines whether the state
owned commercial banks in China would survive the challenges or not. This is not different in the case of
Ghana as many state owned banks have been sold with recent example of Merchant Bank.

Theoretical and empirical evidence elsewhere suggest that credit risk management is a predictor of
bank’s performance. For instance non-performing loans, an indicator of credit risk can reduce the value of a
bank and destabilizes the credit system. Padmanabham (1998) explains that loan default reduces the resource
base of a bank for further lending, weakens staff morale and affects the borrower’s confidence.

- Credit Risk and Performance

Poudel (2012) in his studies examine the factors affecting bank performance in Nepal for the period of
2001 to 2012 and followed a linear regression analysis technique. The study shows significant inverse
relationship between bank performance measured by ROA and credit risk measured by default rate and
capital adequacy ratio. Hosna et al. (2009) findings was indifferent with Poudel. In his study of four Swedish
banks covering a period of 2000 to 2008, the result showed that the rate of non-performing loan and capital
adequacy ratios were inversely related to ROE though the degrees vary from one bank to the other. Musyoki
and Kadubo (2012) also found inverse relationships between performance and credit risk. Empirical studies
evidencing the negative and significance relationship of Credit risk and banks performance is quite a lot.
However, other studies have found a positive relationship. Boahene (2012) found evidence of significant
positive relationship of banks performance and credit risk in Ghanaian commercial banks covering a period
of 2005-2009. The study employed panel data analysis model and shows that non-performing loan rate, net
charge-off rate, and pre-provision profit as a percentage of net total loans and advances were positively
related with profitability measured by ROE. He claimed that Ghanaian banks enjoy high profitability at time
when the levels of credit risk indicators are high. In another study in Kenya the relationship between
profitability and credit risk was complicated further by Kithinji (2010). Kithinji regression analysis in Kenya
for the period of 2004 to 2008 concluded that profitability of banks measured by ROA did not show
significant relationship with credit risk variables.

3. Methodology

The study seeks to examine the impact of risk management on performance of banks listed on the
Ghana Stock Exchange (GSE). The principal data used for the study was taken from the fact book compiled
by the GSE and annual report of the banks. These include the financial statements of the selected companies
from 2005 to 2014. Out of 27 banks operating in Ghana only nine are listed. The listed banks were
considered for the study because of readily availability of data and the researcher could not get the data for
non-listed banks in the relevant years.

The study analyzes the relationship that risk management influence firm performance, i.e. risk,
management has a negative effect on performance. This study uses Panel methodology because of the nature
of the data collected. The panel data framework makes it possible to allow for difference in the form of unobservable individual nation effect. Panel data have a number of advantages over time series and cross-sectional studies. Among them is the ability to control individual heterogeneity and time invariant variables (Baltagi, 2001).

The panel data analysis is conducted to reveal the impact of risk management on performance. The structure of unobservable heterogeneity is very vital for determining the appropriate method of panel data estimation. If there is a correlation between the explanatory variables in the estimated model and unobservable heterogeneity for each financial institution, fixed effects method is appropriate choice to reach the consistent estimation. However, if there is no correlation between them, then random effects method is more efficient than fixed effects since it is based on generalized least squares. Besides, Hausman’s specification test (1979) is used to decide the characters of the effects thus, random or fixed (Baltagi, 2001). Following Hausman test which states that the difference in coefficients between fixed effects and random effects is systematic, the fixed effects estimation is preferred. However, in this study both random and fixed effect is used to estimate the coefficients.

**Model Specification**

Since the study seeks to determine impact of risk management on performance of listed banks in Ghana over a eight year period, the study uses panel data regression analysis of cross-sectional and time series data. The general model for the study is:

\[ Y_{it} = \beta_0 + \sum \beta_i X_{it} + \varepsilon_{it} \quad \text{(Eq. 1)} \]

- **Y_{it}** : performances (ROA) ratio of bank i at fiscal year t
- **\beta_0** : The intercept of equation
- **\beta_i** : Coefficients of X_{it} variables
- **X_{it}** : The different independent variables for performance of financial institution i at fiscal year t
- **i** : Financial institution = 1, - 10 banks
- **t** : Time= 1,2,3,4,5,6,7,8,10 years
- **\varepsilon** : The error term

If the above equation (1) is translated to general least squares models into identified variables it becomes:

\[ \text{ROA} = \beta_0 + \beta_1 \text{DR} + \beta_2 \text{CLA} + \beta_3 \text{CAR} + \varepsilon_{it} \quad \text{(Eq. 2)} \]

### Table 1: Definition and Measurement of Variables

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>Return on Assets</td>
<td>This measures company earnings before interest and taxes (EBIT) against its total net assets. The ratio is considered an indicator of how efficient a company is using its assets to generate revenue before contractual obligation must be paid. It is calculated as: ROA= EBIT/ Total Assets</td>
</tr>
<tr>
<td>DRA</td>
<td>Default rate</td>
<td>It measures a particular lender to change the terms of a loan from the normal terms to the default terms that is, the terms and rates given to those who have missed payments on loan. It is calculated as Non-Performing Loans/ Total loan</td>
</tr>
<tr>
<td>CAR</td>
<td>Capital Adequacy Ratio</td>
<td>It measures the amount of bank’s capital expressed as a percentage of its risk weighted credit exposure. It is calculated as Capital fund/ Risk Weighted Assets</td>
</tr>
<tr>
<td>CLA</td>
<td>Cost per Loan Asset</td>
<td>It measures the average cost per loan advanced to customer in monetary term. It is calculated as Total Operating Cost/ Total amount of loans</td>
</tr>
</tbody>
</table>
4. Discussion of Results

Table 2: Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>.0513</td>
<td>.2216</td>
<td>.1487</td>
<td>.0442</td>
</tr>
<tr>
<td>DRA</td>
<td>.0123</td>
<td>.3144</td>
<td>.1956</td>
<td>.1175</td>
</tr>
<tr>
<td>CAR</td>
<td>.4997</td>
<td>1.043</td>
<td>.5189</td>
<td>.2319</td>
</tr>
<tr>
<td>CLA</td>
<td>.1197</td>
<td>.3998</td>
<td>.1761</td>
<td>.1091</td>
</tr>
</tbody>
</table>

Table 2 above presents some descriptive statistics for the variable used in this study. The mean ROA is 14.87% with minimum 5.13% and maximum 22.16%. On the average, the default rate is 19.56% and minimum and maximum is 1.23% and 31.44% respectively. The mean of capital adequacy ratio is 51.89% and which bears minimum and maximum 49.97% and 103.30% respectively. The cost per loan assets, produced average of 17.61% with minimum of 11.97% and maximum of 39.98%.

Table 3: Correlations Matrices

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>DRA</th>
<th>CAR</th>
<th>CLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1.0000</td>
<td>-0.4432***</td>
<td>1.0000</td>
<td>-0.3299***</td>
</tr>
<tr>
<td>DRA</td>
<td>-0.4432***</td>
<td>1.0000</td>
<td>0.4071*</td>
<td>-0.3101**</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.3299***</td>
<td>0.4071*</td>
<td>1.0000</td>
<td>0.2339</td>
</tr>
<tr>
<td>CLA</td>
<td>-0.3101**</td>
<td>-0.3101**</td>
<td>0.2339</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

*** denotes significant at 1% level of significance
** denotes significant at 5% level of significance
* denotes significant at 10% level of significance

The correlation matrices Pearson’s in Table 3 indicates that the degree of correlation between pair of explanatory variable suggest the absence of multi-collinearity weakness in the model due to low correlation matrices (Bryman & Cramer, 2001). Evidence from table 3 demonstrates that there is significant relationship between return on assets and all explanatory variables (default rate, cost per loan assets and capital adequacy ratio). This finding therefore indicates that all the risk management indicators as in used in this study have inverse relationship with performance at 99% confidence level.

Table 4: Regression Analysis

<table>
<thead>
<tr>
<th></th>
<th>Fixed effect</th>
<th>Random effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>t-test</td>
</tr>
<tr>
<td>DRA</td>
<td>-.2875</td>
<td>-4.24</td>
</tr>
<tr>
<td>CAR</td>
<td>-.1398</td>
<td>-5.13</td>
</tr>
<tr>
<td>CLA</td>
<td>-.0678</td>
<td>-4.98</td>
</tr>
<tr>
<td>Constant</td>
<td>2.1182</td>
<td>6.16</td>
</tr>
<tr>
<td>R²</td>
<td>.3378</td>
<td></td>
</tr>
<tr>
<td>Sig.</td>
<td>.0000</td>
<td></td>
</tr>
</tbody>
</table>

Following result from table 4 above, it contains the coefficients of the independent variables in both fixed and random effect. The coefficients indicate predictive powers of the individual independent variables to the dependent variable. All the coefficients are negative implying an inverse relationship between the dependent variable (Return on Asset) and the independent variables (Default Rate, Capital Adequacy Ratio and Cost per loan Asset). Given the above result, a unit changes in default rate, capital adequacy ratio and cost per loan assets causes an inverse change in performance of the bank at 28.75%, 13.98% and 6.78% respectively using the fixed effect model and all at 99% confidence level. The finding is not much different when the random effect model is used. It suggest that changes in default rate, capital adequacy ratio and cost per loan assets can cause changes in return on assets at 19.93%, 10.92% and 9.89% respectively all at 1%
level of significance. The above finding is consistent with Poudel (2012) who also observe an inverse relation between performance and the explanatory variables. The t-test for all the explanatory variables i.e default rate, capital adequacy ratio and cost per loan asset indicate statistical significant negative relationship with return on assets.

From the result any decision made by an officer of a bank with regards to granting of loan if not carefully made could impede the profitability of the banks if the judgement fails to yield the desire result. All the explanatory variable are jointly significant in explaining changes in the dependent variable, thus, the independent variables are able to explain changes in return on assets not less than 31.01% in both model thus fixed and random effect.

5. Conclusion and Recommendations

The aim of the study was to establish the impact of credit risk management on financial performance of banks listed on Ghana Stock Exchange. The study sought to establish impact of default rate, capital adequacy ratio and cost per loan assets on financial performance. Finding from the result shows that credit risk management is a significant predictor of bank financial performance as measure by return on asset hence attainment of bank performance depends on how risk are managed. The study can confidently state that default rate, capital adequacy ratio rate and cost per loan asset as risk management indictors are key predictors of financial performance of a bank. Although all the risk management indicators used are statistically significant, default rate management seems to be the most important predictor of the bank performance as it gives the highest predictive power in the model. As Ezike and Oke (2013) stated, holding capital beyond the optimal level would inversely affect the efficiency and profitability of commercial banks. Taking the argument by Ezike and Oke (2013) the prevailing negative relationship between CAR and Performance (ROA) appears to result from having reserve beyond the necessary amount enough to handle unexpected risk that the banks may encounter.

Since risk management in general plays a key role to bank’s performance, banks should put more premiums on risk management. It is recommended that to reduce risk on loans and improve financial performance the banks should make more allocation to default rate management and try to maintain capital adequacy just at optimum level. It is further recommended that since the current study variables are able to account about 30% changes to bank performance, a research to efficiently manage the credit risk will aid in improving bank financial performance. We again suggest a rigor credit risk management process is of paramount significance. Thus, banks policy makers are advised to employ a modern credit risk management technique and diversify the earning activity of their respective banks.

Reference


Coyle, B. (2000), Framework for Credit Risk Management; Chartered Institute of Bankers, United Kingdom.


