Bank Risk Control and Shareholder Value Creation: The Case of Ghana

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Abstract

This paper examines bank risk factors that determined shareholder value in the Ghanaian banking industry between the years 2007 and 2015. The system-generalized method of moment is used to estimate a dynamic panel model, with shareholder value as a linear function of bank specific risk factors, industry specific and macroeconomic variables. Lags of risk factors were used as bank specific variables.

Surprisingly, the results indicate that shareholder value has a positive relationship with credit risk. Therefore, banks could mitigate this risk by increasing their loan portfolio, and making provisions to commensurate with expected losses in order to make their residual claimants (shareholders) happy. In addition, shareholder value is negatively impacted by capital risk, interest-rate risk and operational risk.

Keywords: shareholder value, credit risk, interest rate risk, capital risk, liquidity risk,EVA,

Introduction

Banks, by the extension of their activities, are exposed to a myriad of risks which can threaten their survival. As a result, banks have been described as being in the business of managing risk. Risk management comes with a cost which necessitates that banks exercise only those risk management practices that increase shareholder value (Fatemi & Luft, 2002; Fatemi & Fooladi, 2006). With increasing competition in the Ghanaian banking industry, globalization and influx of foreign banks, it is more important for banks in Ghana to take action towards the shareholder's interest since higher shareholder value creation may ease access to equity capital.

An increase in shareholder value also increases the confidence of existing shareholders (Arif & Afzal, 2012).The need for value creation for shareholders calls for banks to aim at increasing net operating profit after tax (NOPAT) and reducing cost. The difference between the NOPAT and the cost of capital is represented by the new and more reliable measure of shareholder value, Economic Value Added (EVA). Banks, being financial intermediaries, are the centre of a country's financial system, especially in countries where capital markets are underdeveloped (Zhang, Jiang, Quc &Wang, 2013).

There is a huge body of literature on the determinants of bank performance which consider a wide range of bank-specific, industry specific and macroeconomic drivers of bank performance. This was prompted by the recent financial crisis with the indication that there were corporate practice contradictions and weak financial risk management. If risk management is not active within the bank, shareholders could do well, if not better, to handle it themselves.

If the core business of banks is to manage risk in order to increase shareholder value, then identifying which risk factors (e.g. credit risk, capital risk, market risk, interest-rate risk, liquidity risk and operational risk) are most likely to create wealth for shareholders will lead to sustaining a sound and profitable banking industry. Though risk and its attendant effect on banking operations and survival have taken centre stage in banking, especially after the 2007-2009 financial turmoil, there seems to be limited literature on the risk exposures of banks in Ghana.

Furthermore , the established literature on factors that influence bank performance generally do not focus on shareholder value creation metrics as their performance indicators. In Ghana for instance, virtually all research on the performance of banks tend to focus on ROE or ROA. This study seeks to fill this gap by linking bank specific measures of risk to shareholder value, focusing on Shareholder Value Ratio (SVR) which is computed using EVA. Evidence of which risk-taking behavior of banks affects shareholder value would inform banks, regulators and other stakeholders in Ghana as to which risk exposures should be at the top of the priority list and how to manage such risk exposures.

On the hind side, the paper also tests the theoretical and empirical reasoning of risk management as a lever for shareholder value maximization in a different environment where the banking sector dominates the financial system. Risk management

and shareholder value nexus has been confirmed on the European markets by Fiordelisi and Molyneux (2010) between 1998 and 2005. Different results have also been found in the literature on the risk management and shareholder value relationship using data from different countries.

However, in most of these countries, the financial market seem to dominate the financial system. This research focuses on Ghana because, according to the Banking Survey report (2010) by Price waterhouse coopers (PWC), banks in Ghana are seriously managing their exposure to risk that may come from the complexities of their business. But the question that comes to the researcher's mind is which risk should be prioritize by banks since placing too much emphasis on all the risk components of banks may come with higher cost. This research is poised to investigate the value created for shareholders as a result of the rigorous risk management practices being adopted by Ghanaian banks.

We also undertake this research in Ghana because its banking sector dominates the financial system, and their survival and what they return to the shareholder is vital to the economy. We believe our results add to existing literature in this area because the research is conducted in an environment where the banking sector dominates the financial system, unlike earlier papers, where in their environment, other components of the financial system are well pronounced.

The organisation of the paper is as follows: Section II discusses the existing literature of risk factors that impact bank performance. Section III describes the data and model specification while section IV pre-

sents the empirical results. Section V concludes the paper.

Literature Review

The shareholder value maximization hypothesis states that firms should engage in risk management activities only if it creates value for the firm and also its shareholders. Banks have been described as being in the business of managing risk. Risk management generally encompasses the process of identifying risks to the bank, measuring exposures to those risks (where possible), ensuring that an effective capital planning and monitoring programme is in place.

Monitoring risk exposures and corresponding capital needs an on-going basis, taking steps to control or mitigate risk exposures and reporting to senior management and the board on the bank's risk exposures and capital positions (Basel Committee on Banking Supervision (BCBS), 2011). Resti & Sironi (2007, pp. xxii) indicate that "banks must be able to identify, measure, control and above all price all the risks taken aboard, more or less consciously, in and off its balance sheet". Banks are exposed to several risks but the main risk factors stipulated in the Basel Accords are credit risk, capital risk, liquidity risk, market risk, interest rate risk and operational risk.

Credit risk is the most important risk that banks are exposed to because of their operations. Resti & Sironi (2007) define credit risk as the possibility that an unexpected change in counterparty's creditworthiness may generate an unexpected change in market value. Credit risk comprise the following main risks; default risk, migration

risk, spread risk, recovery risk, pre-settlement risk and substitution risk. Fatemi & Fooladi (2006) argue that the increasing variety in the types of counterparties and the ever-expanding variety in the forms of obligations have meant that credit risk management has jumped to the forefront of risk management activities carried out by firms in the financial services industry. Therefore, an increase in the value of the provision for loan losses relative to total loans is an indication that the bank's assets are becoming more difficult to collect (Tsorhe *et al.*, 2011).

Applying the probit model, Samad (2012) finds that three measures of credit risk, namely credit loss provision to net charge off, loan loss allowance to non-current loans and non-current loans to loans, predict 80.17 percent of US bank failure. Empirical literature is mixed on the effect of credit risk on the performance of banks. For instance, Berger & De Young (1997), Altunbas *et al.* (2000), Brissimis *et al.* (2008), Anthansoglou *et al.* (2008), Alper & Anbar (2011), Nawaz *et al.* (2012), Zhang *et al.* (2013) find a negative relationship with bank performance. On the other hand, Fiordelisi & Molyneux (2010a) find a positive relationship between credit risk and bank performance.

Liquidity risk has recently garnered attention from researchers, regulators, and financial institutions after the 2007-2009 financial turmoil (Arif & Anees, 2012). The difficulties experienced by some banks during this financial crisis have been attributed to lapses in liquidity risk management. A bank may lose the confidence of its depositors if the bank is not able to meet its obligation of providing funds when demanded. During the finan-

cial crisis, inefficiency in the allocation of liquidity cost highlighted how inefficient banks were in managing their liquidity exposure. Focusing on European banks, Fiordelisi & Molyneux (2010a) and Cipollini & Fiordelisi (2012), find a negative and significant relationship between liquidity risk and bank performance. On the other hand, Brissimis *et al.* (2008) posits that increased liquid assets seem to reduce bank performance, hence bank capital may have a strategic role in cases of liquidity shortages and increased credit risk.

Capital, which is the shareholders' funds, plays a pivotal role in almost every aspect of banking. Capital needs to be appropriately allocated to various bank business units to maximize its rate of return (Resti & Sironi, 2007). Highly capitalized banks are better able to withstand negative shocks. As a result, the introduction of the Basel III Accord by the BCBS after the financial crisis proposes new capital requirements for banks. The capital requirement and capital buffer requires banks to hold relatively higher amounts of capital than under Basel II. Empirical studies that have examined the impact of capital risk on bank performance include Altunbas *et al.* (2007), Brissimis *et al.* (2008), Fiordelisi *et al.* (2011) and Zhang *et al.* (2013). Mester (1996), Altunbas *et al.* (2000), Brissimis *et al.* (2008) find a negative impact on performance. In contrast, Altunbas *et al.* (2007) find a positive relationship.

Market risk is the risk that a financial instrument's value will fluctuate as a result of changes in market price, regardless of whether these changes are caused by factors typical for individual instruments or

their issuer (counterparty), or by factors pertaining to all the instruments traded on the market (Milanova, 2010). Most of the aforementioned studies looked at the impact of risk factors on bank performance and considered just a few risk factors as bank-specific drivers of performance; Fiordelisi & Molyneux (2010a), however, included the operational and market risk of both listed and unlisted banks.

Their results depict a negative relationship between shareholder value ratio and market risk. Though interest rate risk and foreign exchange risk can be subsumed under market risk (Resti & Sironi, 2007), some studies deal with the effect market risk, interest rate risk and foreign exchange risk have on performance of listed banks (Sukcharoensin, 2013). Operational risk has also become an area of growing concern in banking. The increase in the sophistication and complexity of banking practices has raised both regulatory and industry awareness of the need for an effective operational risk management and measurement system (Moscadelli, 2004).

The Basel II Accord defines operational risk as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk but excludes strategic and reputational risk (BCBS, 2006). In their analysis of the implication of the Advanced Measurement Method measure of operational risk, Chapelle *et al.* (2008) find that an effective management of operational risk can save banks a substantial amount of money. de Fontnouvelle *et al.* (2003) confirms this by concluding that operational losses are an important source of risk for large, international active banks, and that the capital charge for

operational risk will often be greater than the charge for market risk.

Despite the clear importance of risk on bank performance, there seem to be nostudies that use SVR as a measure of performance in Ghana. This paper, thus, seeks to contribute in closing these gaps.

Data and Methodology

This paper relies on data obtained from the Banking Supervisory Department and Research Department of the Bank of Ghana. Data spanning 2007 to 2015 for each bank was obtained from their financial statements. Out of 26 licensed banks, 25 were included in the analysis as a result of limited data on a new entrant bank. Both listed and non-listed banks were considered. Monthly stock prices of 6 listed banks, monthly returns of the Ghana Stock Exchange All Share Index (GSE-ASI), and the 91-day Treasury Bill Rates were obtained from the Ghana Stock Exchange (GSE). Data on GDP per capita was obtained from the World Bank Database.

The relationship between bank risk exposures and shareholder value was tested following the approach of Fiordelisi & Molyneux (2010a).The model stipulates a linear relationship between shareholder value measured as SVR and various bank idiosyncratic risk measures, macro-level risk measures and macroeconomic variables. Specifically, we estimated a panel regression model below, where i represents the cross section of banks in Ghana, and takes on values. The subscript t denotes the time dimension? is the unobserved bank specific effect.

We lag the explanatory variables since risk factors may take time to influence shareholder value. This is because some actions taken by banks to increase shareholder value may take time to pay off. For instance, when the borrower of a loan which matures in a year's time defaults, this affects the NOPAT of the bank at the end of the year. Though this does not happen immediately, the effect of changes in market risk such as a decline in exchange rates could immediately reduce the value of some of the bank's assets. We included the lag of SVR to look at the effect of past performance in terms of shareholder value on subsequent year's performance. As stated by Fiordelisi & Molyneux (2010a), a relatively large number of lags are required to determine how quickly banks' actions pay off. However, as a result of the limited sample size and the relatively short time span, we settled on just one lag. Moreover, the AIC and BIC results favour these lags.

$$SVR_{i,t} = \alpha SVR_{i,t-1} + \beta CRED_{i,t-1} + \gamma CAP_{i,t-1} + \sigma LIQ_{i,t-1} + \vartheta MARK_{i,t} + \rho INT_{i,t} + \delta ln(OP_{i,t-1}) + \varphi LB_t + \omega FB_t + \pi FC_t + \emptyset HHI_t + \tau GDPP_t + \mu_i + \varepsilon_{i,t} . \quad (1)$$

In the model above, Credit Risk *(CRED)* is measured as the ratio of annual loan loss provision to total loans of the bank. Capital Risk *(CAP)* is the ratio of total equity to total assets. Liquidity Risk *(LIQ)* is calculated as the ratio of total loans to total deposits. Market Risk *(MARK)* is calculated as the ratio of the total amount of security investments and total assets. Interest-Rate Risk *(INT)* is calculated using the gap ratio, which is given by the ratio of interest rate sensitive assets to interest rate sensitive liabilities. The capital charge requirement under Basel II was used to represent Operational Risk *(OP)*. Gross Domestic Product per capita *(GDPP)* and bank concentration represented by Herfindahl-Hirschman Index *(HHI)* was added as control variables since the macro environment in which the bank is operating may have an effect on shareholder value. The GDPP data was obtained from the World Bank's World Development indicators database. HHI was calculated focusing on bank deposits. Finally, we introduce dummy variables in the model; LB to capture whether a bank is listed on the GSE or not, FB represents an indigenous or foreign bank, and FC represents financial crisis or post-financial crisis.

The dependent variable, bank shareholder value ratio *(SVR)*, is calculated as the ratio of the difference between the bank's NOPAT and the capital charge to the capital invested in the period t-1. Thus,

$$SVR_{i,t-1} = \frac{EVA}{k_{i,t-1}} = \frac{NOPAT_{i,t} - k_{i,t-1}CoE_{i,t}}{k_{i,t-1}}$$

$NOPAT_{it}$ is the Net Operating Profit After Tax adjusted to reflect training expenses and Operating Lease Expenses. Training expenses are expenses which aim to spawn future growth, hence they represent intangible investments and should be included in the bank's income statement (Fiordelisi & Molyneux, 2008). Operating leases are disguised financial expenses since companies acquire a productive asset

and therefore, finance their future production by paying periodic rent (i.e. operating leases expenses). In the same way, the operating expenses were added to NOPAT to correct the distortions of accounting operating profits? is previous year's capital invested and finally the? is the cost of equity capital invested and is determined by using the capital asset pricing model (CAPM) as was done by Mensah & Frimpong (2013).

We estimate the model in equation (1) above using the system Generalized Method of Moments (GMM). From a methodology viewpoint, models used in the literature to determine the drivers of bank performance are usually OLS, fixed effect and random effect models. The nature of the dataset requires the use of the system Generalized Method of Moments' estimator developed by Arellano & Bover (1995) and Blundell & Bond (1998). The reason for using the system GMM is that some of the explanatory variables in equation 1are likely to be endogenous. To solve this problem, the system GMM uses the lagged levels of endogenous regressors in addition to the exogenous variables. This makes the endogenous variables predetermined and therefore, not correlated with the error term. Second, time-invariant characteristics may be correlated with the explanatory variables. To cope with this problem, the system GMM uses first difference to transform the equation. Third, the presence of lagged dependent variable creates the problem of autocorrelation. The system GMM corrects this by instrumenting with the past levels of the first differenced lagged dependent variable. Finally, the panel dataset has a short time dimension (7 years) and relatively large bank dimension (25 banks). The effect of time-invariant characteristics of a panel data that has a large time dimension dies off with time. Consequently, the correlation of the lagged dependent variable with the error term will be insignificant. The Arellano & Bover (1995) and Arellano & Bond (1991) estimator is designed to handle small-time dimension and large observation panels. The diagnostic tests such as Arellano-Bond test for zero autocorrelation in the first difference of the error terms and Sargan test of over identifying restriction is conducted to ensure consistency of the system GMM.

Table 1: Descriptive Statistics of Variables used in the Analysis over the period 2007-2015

Variable	Obs	Mean	Std. Dev.	Min	Max
$SVR_{i,t}$	167	0.281979	0.307795	-0.56894	1.872704
$CRED_{i,t-1}$	142	0.025614	0.024151	0	0.113858
$CAP_{i,t-1}$	142	0.164694	0.137124	0.030405	0.870443
$LIQ_{i,t-1}$	142	0.760097	0.356851	0.056506	2.071362
$MARK_{i,t}$	167	0.243334	0.134341	0	0.770332
$INT_{i,t}$	167	1.30881	0.7093	0.432418	7.283841
$\ln(OP_{i,t-1})$	142	15.41953	1.260294	11.60084	17.77238
HHI_t	9	739.352	93.27159	651.4492	925.3105
$GDPP_t$	9	784.8436	761.66	10.83452	4667.551

Empirical Results

Table 1 displays the descriptive statistics of the variables used in the analysis. On average, banks in Ghana created value and profit for shareholders in the period of our sample as the mean shareholder value ratio is considerably positive. The shareholder value ratio ranges between -0.56 percent and 1.87percent. Turning to the risk taking variables, the financing ratio which serves as a proxy for liquidity risk indicates that on average, loans amount to 76 percent of total deposits. On average, approximately 2.6 percent of total loans

are made available for loan loss provision (proxy for credit risk).The minimum credit risk is zero, which means there was a period where banks were not making provisions for bad debts;possibly these were new entrant banks. FB is a dummy variable which represents bank ownership with 0 being an indigenous bank and 1 representing a foreign bank. As well, LB is a dummy variable with 0 representing a listed bank while 1 represents a non-listed bank whereas for FC, 0 represents post financial crisis and 1 represent thefinancial crisis period (2007-2008). HHI represents bank concentration.

Table 2: Bivariate Correlation of the Bank Specific Variables in the Model

Variable	$SVR_{i,t}$	$CRED_{t-1}$	CAP_{t-1}	LIQ_{t-1}	$MARK_{i,t}$	$INT_{i,t}$	$Ln(OP_{t-1})$
$SVR_{i,t}$	1						
$CRED_{t-1}$	-0.0951	1					
CAP_{t-1}	-0.2973***	0.0321	1				
LIQ_{t-1}	-0.1077	0.0555	-0.0191	1			
$MARK_{i,t}$	-0.0764	0.2219***	0.387***	-0.3245***	1		
$INT_{i,t}$	-0.1281*	0.1493*	0.3627***	-0.0636	0.4239***	1	
$ln(OP_{i,t-1})$	0.1583*	-0.0125	-0.5255***	0.0518	-0.0537	-0.0467	1

The symbols *, **, *** represent significance at 10%, 5%, and 1% respectively.

In Table 2 above, most of the independent variables considered show statistical significance correlations with the shareholder value measure (SVR).Table 3 reports the empirical results obtained from the estimated model. It includes the coefficients and standard errors of the explanatory variables considered in the analysis. We find a positive relationship between credit risk and shareholder value ratio which is in contrast to the negative relationship established in the literature. However, this is consistent with results obtained by

Fiordelisi & Molyneux (2010a) who also proxied credit risk by its lags. Studies that found a negative relationship looked at the immediate effect of credit risk on performance.

We proxied credit risk by the ratio of loan loss provisions to total loans and used the first lag. The argument is that a bank would make huge provisions for bad loans if it expects to have a high level of defaults. A bank would therefore have a large portfolio of loans and borrowers so as

to minimize the effect of defaults. Thus, the bank is taking on high risk and expects to have higher income which in turn leads to higher shareholder value. This could explain the positive relationship between credit risk and shareholder value. Even if borrowers default, since the bank made provisions for these expected losses, the provisions are used to smooth profits and, therefore, minimize or completely remove the effect of credit risk on shareholders' value. The positive relationship also means the prior credit risk provision of a bank will have a positive impact on shareholder value in the ensuing year.

Table 3: Relationship between Shareholder Value and its Determinants

Variable	Coef.	Std. Err.	Z
$SVR_{i,t-1}$	0.3207***	0.0419	7.65
$CRED_{t-1}$	3.9602***	0.7379	5.37
CAP_{t-1}	-1.3512 ****	0.2479	-5.45
$INT_{i,t}$	-0.0879 ****	0.0383	-2.34
$Ln(OP_{t-1})$	-0.04526**	0.0199	-2.27
$LB_{i,t}$	-0.3559	0.3144	-1.13
$FB_{i,t}$	0.4823**	0.1983	2.43
$FC_{i,t}$	0.1033	0.0829	1.25
$HHI_{i,t}$	0.0010*	0.0005	2.00
$GDPP_{i,t}$	0.0004***	0.0001	4.24
Test	**p-value**		
Sargan Test	0.3447		
AB test AR(1)	0.0529		
AB test AR(2)	0.6205		
Wald χ^2	0		
Doornik-Hansen	0.5111		

The symbols *,**,*** represent significance at 10%, 5%, and 1% respectively

At 1% significance level, capital risk at time t-1 has a negative influence on the value created for shareholders in the Ghanaian banking industry. This conforms to results found in the literature by Brissimis *et al*. (2008). The negative impact of capital risk on shareholder value indicates that banks with low capital risk fair better in terms of value created for shareholders. The higher the ratio of

equity to total asset of banks, the higher its exposure to capital risk, and this badly affects value created for the bank's equity holders. A bank's exposure to capital risk can be reduced by minimizing this ratio.

Surprisingly, the results from the Table indicate that liquidity risk at time t-1 has an insignificant effect on shareholder value. Since we used the first lag, it is possible that banks in Ghana are able to handle their liquidity risk exposures such that their impact is eliminated in the ensuing year.

The results indicate a negative relationship between interest rate risk and shareholder value ratio. This comes as no surprise, since a major concern in the Ghanaian banking industry is banks' exposure to changes in interest rates. Managing these risks requires banks' efforts to reduce the amount of their interest bearing assets or increase their non-interest bearing assets or both. In contrast to previous studies (Sukcharoensin, 2013) that find a significant relationship between bank shareholder value and market risk, we find an insignificant relationship.

In the literature, operational risk has a negative impact on bank performance and reputation (e.g. Gillet *et al.*, 2009). Our estimated model also indicates a significant negative relationship between the first lag of operational risk and shareholder value. Any operational risk exposures of Ghanaian banks reduce the value created for shareholders at least in the first year.

In addition, we find the first lag of shareholder value ratio to be significant at one percent, which endorses the use of the system generalized method of moments. This

is in accordance with the findings of Anthasoglou *et al.* (2008). This positive effect suggests that an increase in shareholder value in a particular year would positively influence the value created for shareholders in the subsequent year. The positive relationship also suggests that an increase in the value created for shareholders could lead to access to more funds, which leads to increase value created in the subsequent year.

Finally, with regards to the control variables used, FB, HHI and GDP per Capital have a significant positive impact on shareholder value in the Ghanaian banking industry. Results indicate that an increase in concentration of banks in the country causes an increase in shareholder value. Moreover, foreign banks tend to create relatively higher value for their shareholders than do indigenous banks. There was also no significant relationship between LB and shareholder value, which is in accordance with the finding of Fiordelisi & Molyneux (2010a). Whether a bank is listed or not does not have any influence on shareholder value. This is true in the sense that listed banks on the GSE seem to be dormant in terms of the returns they yield for shareholders. Moreover, returns on the GSE have been stable and the trade off between risk and return does not apply to the GSE. Though financial institutions have been encouraged to list on the Exchange, our findings show that doing so would not have any significant effect on value created for shareholders. FC has an insignificant effect on bank performance which confirms the assertion the financial crisis had no effect on the Ghanaian banking industry.

In order to judge the adequacy of our model, we report the Sargan test of over identification restrictions in Table 3. The null hypothesis of the test is that over identifying restrictions are valid. This tests whether the instrumental variables are not correlated with the residuals. We fail to reject the null hypothesis since the p-value is 0.2595 and conclude that the over identifying restrictions are valid. Failure to reject the null hypothesis of the Sargan test supports the use of the system GMM estimator. Similarly, we test for zero autocorrelation in the first-differenced errors. The GMM assumption is that the first difference errors should not be serially correlated. The hypothesis of the Arellano-Bond test for zero autocorrelation is that the differenced errors term is not first order or second order serially correlated. Again, we fail to reject the null hypothesis of no first order and second order, which supports the model specification. The Wald $\chi 2$ has a p-value of 0.000 which indicates the model's goodness of fit.

We also performed the Doornik-Hansen test for multivariate normality. We fail to reject the null hypothesis of multivariate normality of the data and conclude that the residuals are normally distributed.

Conclusion and Recommendation

This study investigates the relationship between shareholder value and risk factors of 25 listed and non-listed Ghanaian banks using data spanning the period 2007 to 2015. The GMM dynamic panel model was used to determine the drivers of shareholder value measured by Shareholder Value Ratio. As expected, most of the risk factors considered were found to be statistically significant drivers of share-

holder value and results are consistent with the literature.

Results show a positive relationship between credit risk and shareholder value. This is quite novel because literature has it that the relationship between credit risk and performance is negative. An explanation to this result is that Ghanaian banks have a large portfolio of loans and profits—and for that matter, shareholder value—is enhanced to compensate for the higher level of risk taken in giving credit. A further explanation could be that Ghanaian banks make provisions that are commensurate with possible loan losses hence, in the event of default, loan loss provisions are used to smoothen profits.

We also find a negative relationship between capital risk and shareholder value. The equity to asset ratio (capital risk) declined over the period considered in this analysis, supporting the conventional risk-return hypothesis that lower capital risk exposure has the tendency to increase shareholder value. Highly capitalised Ghanaian banks must make use of surplus capital to create value for their shareholders. Consequently, increasing shareholder value will ultimately build investor confidence and attract prospective investors. Thirdly, we find that liquidity risk has a negative but an insignificant impact on shareholder value. Since we used the first lag of liquidity risk, it is possible that banks in Ghana are able to handle their liquidity risk exposures such that its impact is eliminated in the ensuing year.

In addition, we find that operational risk has a negative effect on shareholder value. That is, operational risk exposures of Ghanaian banks reduce the value created for shareholders at least in the first year.

Nonetheless, over the period considered, there has not been any major report or announcement of operational failure in the banking industry. This could mean that the capital charge requirement stipulated in the Basel II Accord is possibly good at mitigating the operational risk exposure of banks. Similarly, interest risk has, at 5% significant level, a negative impact on shareholder value of Ghanaian banks.

We recommend that banks should concentrate on bank specific risk rather than the macro risk in order to increase shareholder value in the Ghanaian banking industry. Specifically, the analysis reveals that cred-

it, capital, interest rate and operational risks have an impact on shareholder value in the subsequent year and should be at the top of Ghanaian banks' risk-management priority list. We postulate that to increase shareholder value, banks in Ghana can accept the risk by approving more loans while making provisions that are commensurate with credit risk. Banks in Ghana can increase shareholder value by reducing the ratio of equity to total assets (capital risk). It is recommended that banks focus on reducing interest sensitive liabilities so as to absorb the impact of interest rate risk on shareholder value.

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