Corporate Governance Factors, Capital Regulation and Bank Risk Taking in Zimbabwe

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Abstract

The study is motivated by the importance of corporate governance indicators in influencing bank risk taking and performance. It seeks to establish the relationship between shareholder power, board characteristics and executive director power as indicators of bank corporate governance and risk taking by banks in Zimbabwe. Using bank level data for the country over the period 2010 to 2017 and accounting for the effects of bank capital regulation, the study finds that more executive director power reduces bank risk taking; while strong boards raise risk taking. On the effect of shareholder power, the study finds that individual bank ownerships increase bank risk taking; with risk increasing as bank statutory capital requirements increase. The bank risk taking effect of government bank ownership is inconclusive; while an increase in statutory bank capital requirements reduces risk taking in banks that are owned by the private institutions. The study results suggest that the effects of changes in bank corporate governance and or banking sector regulations has different bank risk taking outcomes that depend on the interactions between the various governance indicators and the sector regulatory environment.

Keywords: bank, governance, shareholder, executive director, indicators, Zimbabwe

JEL G3, G21, L11, G23

1. Introduction

The occurrence of the Global Financial Crisis had lessons, indicating that poor corporate governance at banks can be a major source of financial and macroeconomic instability as suggested by the literature which point to its role in fuelling the crisis (IMF, 2014). Consequently, there has been heightened research and policy attention on how to improve financial sector corporate governance since the crisis (Yin-Hua et al., 2011; Adams & Mehran, 2012 & IMF, 2014). Countries that include the USA and the European Union have, therefore, embarked on major financial sector governance reforms to strengthen their financial sector stability in order to reduce risks of adverse externalities from financial turbulences on macroeconomic stability. Compared to non-bank firms, bank corporate governance interacts with a number of unique features, which may make their risk taking outcomes different. Naturally, risk and banking are inseparable given that bank business involves more decision making on risky options than non-bank firms. In addition, bank instability or stability has larger economy wide welfare externalities on production, employment and macroeconomic stability than non-banks. The differences justify the need for stronger bank governance (IMF, 2014).

The question of what exactly constitutes optimal bank corporate governance, however, remains an empirical question; especially given the conditional relationship between risk taking, profitability and institutional stability. Similarly, Laeven, et al., (2008) and Saunders, et al., (1990) suggest that the presence of deposit insurance, statutory capital requirements and directed lending interacting with bank governance characteristics have an influence on bank risk taking. An increase in shareholder power and deposit insurance may cause shareholders to push for more bank risk against the optimal risk preference of the bank executive directors and bank regulators. The higher risk taking behaviour can even be worsened by higher bank capital requirements and directed lending, which impose an extra cost on shareholders. Most countries which embarked on major bank governance reforms after the global financial crisis have, therefore, jointly reformed their banking sector regulatory frameworks to align them with the new governance systems to improve the effectiveness of the reforms on risk management (Note 1).

Zimbabwe's banking sector corporate governance rules are based on the Companies Act [23:03], the Finance Act [23: 04] and Banking Act [24:20] as the principal Acts. The country's major governance instruments have not been spared by the post crisis reforms in line with the international governance reforms. The country launched the Zimbabwe National Code on Corporate Governance (ZIMCODE) in 2015. Before then the country did not have a legislated national code of corporate governance. It depended on rules of various professional bodies such as the Institute of Directors of Zimbabwe, the United Kingdom Cadbury Report, the South African King Report and the Commonwealth Secretariat (Maune, 2012). The current Banking Act [24: 20] covers ownership and shareholding structure, board directorship composition and rules, including the distribution of director voting rights for banks meant to safeguard depositors and shareholders' wealth. The Act requires banks to operate within approved functions, which restricts the types of assets they can hold. In addition, it limits the executive director power and possible influence of board decisions by dominant shareholders by way of prescribing the minimum size and constitution of the bank board and its chairpersonship. The Act also has rules on multiple directorship by the bank directors that seek to address conflicts of interest and possible excessive block shareholding through pyramidal ownerships, cross company shareholdings and appointment of trustees.

Despite the bank corporate governance reforms, most African countries including Zimbabwe continue to face multiple banking sector governance challenges and weaknesses due to poor institutions and malfunctioning legal systems (Claessens and Yurtoglu, 2013, Acemoglu, et al, 2005, Rossouw, 2005). Lack of adequate disclosure, transparency and market discipline necessary for good corporate governance as well as bureaucratic inefficiencies and corruption add to the corporate governance impediments for the countries (Kaufmann, et al., 2011). In addition, the generally underdeveloped financial markets prevailing in the countries, especially the underdeveloped and corruption-infested stock markets hinder the working of external corporate governance mechanisms such as take-overs and buy-outs that are needed to force banks to balance between risk and profitability. Under such environments, internal governance mechanisms working through bank board and ownership structures become more critical.

The Zimbabwean case typifies the nature of bank corporate governance challenges that may pose stability challenges for the sector and the economy. The country's Banking Act, for example, has loopholes that make it possible for individual shareholders to indirectly have excessive control over bank boards, through indirect, pyramidal and cross-company ownerships which have direct or indirect influence on bank boards. In addition, post-crisis amendments to the Finance Act such as the 2018 Finance Act amendment, which allow shareholders to appoint non-executive directors on the bank boards and which repealed limitations on the maximum tenure of bank executive directorships, tend to undermine good bank governance. The amendments increase the powers of the bank shareholders and executive directors and have a bearing on the bank's risk taking. As a result, Zimbabwe has had a number of bank mergers, closures and takeovers post its financial sector reforms and ironically, most of the bank failures have been blamed on poor corporate governance (Note 2) (Nhavira, et al, 2014).

The continued weak bank corporate governance in the developing countries suggests the need for further governance reforms in the countries. We, however, argue that such reforms can only be effective if they are informed by country specific circumstances. Studies such as ours are important in establish the interrelationships between the various bank corporate governance factors and bank risk taking in the countries and; hence in informing about better banking sector governance policies. We note that there is still a significant literature gap on the subject. A large body of existing literature on governance has either considered non-banking firms (Nguyen and Nakano, 2012; Mishra, 2011 and Cheng, 2008) or have considered the effects of other governance aspects such as the inter-relationships between governance factors, executive contracts and the agency problem on profit performance instead of risk taking (Cunha, 2017; and Adams and Mehran, 2012). The studies that have considered bank governance and risk have mostly failed to account for the role of bank capital regulation.

This study is motivated by the literature gaps that exist on the relationship between bank governance factors and risk taking in Zimbabwe; and particularly the interaction of the governance indicators and bank capital regulation. We are persuaded by Laeven and Levine (2008) who suggest that the relationship between bank governance and bank risk taking is conditional on the influence of bank capital regulations. In more specific terms, the study investigates the relationships that exists between shareholder power, executive director power and board strength; and bank risk taking conditional on changes in the statutory bank capital requirements. We use bank level data over the period 2010 to 2017.

The study results suggest that an increase in bank executive director power reduces bank risk. We follow Jassaud (2014) and argue that the result is driven by the nature and type of employment contracts for the bank executives,

which tend to promote over-conservatism among the well paid bank executive directors with permanent employment contracts. On the contrary, strong bank board increase bank risk taking, which is critical in counteracting the conservative behaviors of the executive directors. The effect of shareholder power on bank risk is inconclusive and depends on the bank ownership type and bank capital requirements.

The rest of the study is organized as follows. Section 2 presents related literature while section 3 presents study methods and data discussion. Section 4 deals with estimation and discussion of results while in section 5 concludes the study.

2. Related Literature

The workhorse theory on corporate governance is the agency theory. The theory predicts the existence of conflict of interest between a bank's executives and the shareholders; dominant shareholders with internal influence on the bank and the minority shareholders; and between shareholders and the creditors, which without good bank corporate governance may result in suboptimal risk taking (John, et al., 2008; and Jensen and Meckling, 1976). The fear is that bank executives and or dominant shareholders acting on the basis of their interests may take too much or too little risk that negates on the interests of minority shareholders and other outside interest parties. In this respect, good bank governance is one which effectively plays the oversight and monitoring roles on the bank's internal managers and dominant shareholders. Thus, the size of the board, its constitution, shareholding structure and the distribution of voting powers within bank boards and among its shareholders are structured in ways that are perceived to be effective for the oversight and monitoring functions of corporate governance.

The resource dependence theory on the other hand suggests that the size and composition of corporate boards are guided by the need to provide effective advice and access to resources for better management of the bank instead of being a mere tool for oversight and monitoring (Coles et al., 2008; Pugliese, 2013). Thus large bank boards are meant to assist internal executives with more and diversified skills and expertise. Such large boards also allow banks to constitute monitoring and management advisory committees that assist internal managers. The view also favours institutional shareholding for bringing greater expertise and advisory services from the institutional shareholders. Both the agency and resource dependency theories, however, do not prescribe the exact size of the board, its exact composition or the exact bank shareholding structure, which is optimal for optimal risk taking. They are both qualitative in their predications. In addition, the theories do not explicitly account for the unique banking sector environment and how the environment can influence changes in risk taking behaviours.

There is wide consensus that internal governance mechanisms are more effective than external control mechanisms, especially in the developing countries where external mechanisms are weak (Nakano and Nguyen, 2012). However, most of the studies on corporate governance are non-bank firms. For example, Nakano and Nguyen (2012) and Cheng (2008) consider the implications of large and independent corporate boards on risk taking for the Japanese and US firms, respectively. The studies by Gormely, et al (2013) and Hayes, et al (2012) examine the effects of executive incentives on firm risk. Kim and Lu (2011) investigate the effects of external governance mechanisms on CEO ownership and corporate risk-taking and Jiraporn, et al (2015) combines multiple governance factors to assess the impact of firm corporate governance on firm risk-taking. The studies on bank corporate governance and bank risk taking remain few despite the differences in the operating environments for banks and non-bank firms.

Among the studies that consider banking sector governance and risk, Pathan and Skully (2009) considers the effects of governance factors on risk taking for the US banks. The study finds that strong bank boards with strong shareholder influence tend to assume more risk. According to the study, large bank boards may increase or reduce bank risk depending on the influence of shareholders. Powerful bank executive directors are likely to undermine the independency of bank boards. The study by Demsertz and Lehn (1985) and May (1995) suggest that bank managers have undiversified wealth portfolios, which force them to prefer less risk than shareholders whose wealth portfolios are often diversified. The study by IMF (IMF, 2014) on Italian Banks finds that powerful CEOs may take more or less risk depending on the nature of the executive employment contracts. The study, which is confirmed by Srivastav and Hagendorf (2016) suggests that employment contracts that tie the remuneration of bank executives to the risk profile of bank assets tend to reduce bank risk while those that are performance linked tend to lead to higher bank risk as the executive power increases.

A major weakness of most of the studies that have considered the relationships between governance factors and bank risk taking relates to their failure to account for the role of the banking sector environment in influencing the governance-risk taking relationships; especially the influence of bank capital regulation. The importance of the banking sector environment in influencing and shaping bank risk, especially the presents of deposit insurance and capital regulation is motivated in Laeven and Levine (2008) and Anderson and Fraser (2000). Laeven and Levine

(2008) find that the relationship between bank risk taking and capital regulations depends on the bank's ownership structure and on whether the bank shareholders perceive the changes in the bank's capital requirements as an extra implied cost of capital or not. The authors suggest that the shareholders may decide to play it "safe" by reducing risk taking to protect their capita when they are highly liquid or may seek to take more risk in anticipation of higher expected returns to recover-up the extra cost of capital when the required bank capital is raised. These arguments are supported by Anderson and Fraser (2000), who find that managerial ownerships may increase or reduce bank risk depending on bank regulation and liquidity.

In light of the findings by Laeven and Levine (2008) and Anderson and Fraser (2000), this study hypothesizes that the degree of bank risk taking should positively depend on shareholder power, executive director power and board strength and that bank capital regulation changes may amplify or dampen the relationship depending on shareholder perceptions on the cost implications of the capital regulation changes. Unlike the previous studies, which were on the developed countries and or countries with deeper financial sectors and capital markets, out study considers the case of a developing country with relatively limited scope for external governance mechanisms based on the equities market.

3. Study Methods and Data

3.1 Empirical Model Specification

The relationship between bank corporate governance factors and bank risk-taking is estimated using empirical model (1). The model follows specifications by Nakano et at., (2012) and Pathan et al., (2009):

$$RSK_{it} = \beta_0 + \sum_{j=1}^{J} \beta_j X^j_{it} + \sum_{s=1}^{S} \beta_s X^s_{t} + \sum_{c=1}^{C} \beta_c X^c_{t} + \lambda_T + \lambda_i + \varepsilon_{it} \tag{1}$$

The determinants of bank risk are classified into bank characteristics, which include board factors, shareholding structure, bank size, bank capitalization, loan exposure and efficiency indicators; market factors, which notably include the degree of financial sector competition; and economy wide factors, namely inflation and economic activity. The risk measure (RSK_{it}) is measured using alternative indicators as described below. The coefficients β_j, β_s and β_c are the marginal effects of bank, market and economy wide factors on bank risk taking, respectively. The parameters λ_T and λ_i are the time and bank fixed effects, respectively while ε_{it} is the random error term.

3.2 Data and Definition of Variables

The study utilizes an unbalanced panel data for Zimbabwe's banks over the period 2010 to 2017. The data was obtained from the published annual reports of banks and is on all deposit taking banks; namely commercial banks, merchant banks, discount houses and building societies. The panel consisted of 31 banks at most and varies in some years due to bank mergers, takeovers and closures. The variables of interest contained from the annual reports include bank board size, number of board executive directors, number of other boards on which the bank's executive directors and chairperson serve, number of board committees, bank shareholding structure, loan diversification, bank assets and equity capital. The economy wide factors; namely GDP and inflation were obtained from Zimbabwe Statistics Agency (ZimStat).

Bank Risk

Bank risk can be measured as total risk (TRSK), idiosyncratic risk (IDRSK), systematic risk (SYRSK) and interest risk (INTRSK). Following Konishi, et al,. (2004) and Chen, et al., (2006), the study utilizes total risk measured as the volatility of bank returns as follows:

$$TRSK_{it} = \left[\frac{1}{n}\sum_{t=1}^{n}\left(R_{it} - \overline{R}_i\right)^2\right]^{1/2} \tag{2}$$

Where, R_{it} is quarterly bank return and $\overline{R}_i$ is the average bank return over all the quarters of the year. We utilized the return on assets as the measure for bank return and the highest frequency for the measure was quarterly. We preferred to use the variance of the return on assets over the variance of the return on equity as the latter was found to be 'noisy'. The noise in the return on equity resulted from the high incidences of distressed banks over the years, which in some cases would have missing or negative capital. The study could also not utilize the stock market based returns on equity due to the fact that some banks in the country are not listed on the stock market. The use of the return on equity would leave out the banks.

As an alternative to the standard deviation of the return on assets, we also used the absolute deviation of expected returns (ADER) to measure bank total risk. According to Adams et al. (2005), this is defined as the absolute value of residuals from the estimated bank's return on asset equation specified as in (3):

$$ROA_{it} = \beta_0 + \sum_{j=1}^{J} \beta_j X^j_{it} + \sum_{s=1}^{S} \beta_s X^s_t + \sum_{c=1}^{C} \beta_c X^c_t + \lambda_T + \lambda_i + \varepsilon_{it} \qquad (3)$$

With the ADER measure computed as the absolute values of the residuals $|\varepsilon_{it}|$ in equation (3).

Chief Executive Officer Power

The chief or executive director power is computed as an index. The CEO power depends on whether the chief executive officer chairs the board or not, the number of executive directors on the board, the number of years he/she has been in position, the amount of bank equity he/she holds, whether the CEO was hired internally or externally and his or her dominance or popularity. However, in our case the country's Banking Act does not allow the CEO to chair the board. In addition, information on whether the CEO was hired internally or externally was not available. The number of years the CEO has served the bank was also not available for many banks. The commonly available data on indicators of CEO power was on the number of executive directors on the boards and the number of other boards served by the CEO, which we took as a proxy for the dominance or popularity of the CEO in the industry.

The study, therefore, utilized the percentage of executive director representation on bank boards and the number of other directorships outside the bank for the CEO. The percentage of executive directors on the bank board reflects the CEO power in the sense that the CEO being the 'boss' to the other executive directors, they are likely to follow his pattern of voting when the board makes critical decisions for the banks. The number of the CEO's, other directorships outside the bank reflects the power of the CEO in the sense that a popular CEO is more likely to influence the decisions of the other board directors. In addition, the more the number of other boards the CEO sits on the more he/she is likely to influence bank lending that favour the other companies served. Ironically, in most cases the other companies are usually companies with interlocking ownerships with the bank ownerships. The overall CEO power index is computed by aggregating the individual indices on the two indicators calculated as binary scores of zero and one using the median score as the cut-off point.   The overall index of CEO power, therefore, had values of zero (weak CEO); one (CEO with moderate power) and 2 (powerful CEO).

Shareholder Power

Following John et al (2008) and Laeven and Levine (2008), shareholder power is measured by the percentage of dominant shareholding (bloc) in the bank. The larger the percentage of block shareholding, the more powerful the shareholder. Zimbabwe's Banking Act restricts block shareholding for individuals to 25%, while institutions and the government can hold up to 100%. However, in practice individuals can indirectly increase their bank shareholding, through shareholdings in trustees and other companies which are shareholders of the bank. We, therefore, tried to pick-up the indirect ownerships by taking the percentage of shareholding held by the top 5 shareholders as the measure of block ownership in the banks.

Board Strength

Following Pathan and Skully (2009), we constructed an index of bank board strength using the size of the board, the number of board committees, whether the board had separate risk and audit committees or not; and the number of directorships by the board chair. We constructed binary indices taking values of zero or one for each of the separate indicators using the median cut-off in each year. The overall board strength index was computed by adding up the four scores. The overall index ranges from zero for the weakest board to four for strongest board.

Bank Capital Regulation

We followed Laeven and Levine (2008) and utilized the statutory bank minimum capital ratio to measure the effect of bank regulation on bank risk. The Reserve Bank of Zimbabwe raised the minimum bank capital by US$100 million at the beginning of the study period and the banks were required to raise their capital towards the new capital level over a fairly long period. The phased period approach gave use enough variation in the minimum capital ratio over the sample period and the banks adjusted towards the statutory requirement. To the extent that banks had significant liquidity constraints during the period due to the effects of dollarization, it is likely that the new capital requirement was a major constraint on banks' liquidity and cost of capital. Its variations across banks and over time, therefore, could allow us to identify the effects of the bank capital regulation on bank risk taking behaviour.

Market Concentration

To measure the degree of market concentration, the Herfindahl-Hirschman index (HINDEX) is utilized. The index is based on lending shares and computed for each banking sub-sector separately, given differences in the nature of competition within each subsector, i.e. $HINDEX_{it} = \sum_{i=1}^{j} S_{it}^2$, with S representing lending share for each bank in its subsector. An increase in the index towards 10 000 represents greater concentration and less competition.

Summary Statistics

Table 1 below summarizes statistics on the study variables. The correlation matrix for the variables is presented in table 2. From table 1, the average of the standard deviation of the return on assets is 1.5. Its standard deviation is 2.4. The mean of the ADER is 2.9 and its standard deviation is 3.7. From the correlation matrix table, the two measures are highly correlated with a positive coefficient of 0.81, which justify their alternative use to measure risk.

Table 1. Summary Statistics

Variable	Mean	Std.Dev.	Min	Max	No. of Obs.
Std. Dev of ROA	1.488	2.444	0	14.10	164
Absolute Dev of Exp. Return	2.855	3.738	0.0003	25.99	157
Adverse Loan Ratio	13.81	19.68	0	104.4	164
Block Shareholding	89.68	15.49	33.48	100	165
Board Index	3.198	1.007	0	4	164
Strong Board (%)	63.51	4.83	0	1	211
Board Size	10.04	2.027	6	16	167
No. of Board Committees	5.503	1.622	0	9	167
Separate Risk/Audit Com. (%)	79.30	4.07	0	1	164
Chair Other Boards	3.076	3.248	0	25	167
Capital Adequacy Ratio	21.22	2.21	0	76.3	164
Exec. Director Ratio (%)	31.3	4.65	0	100	164
CEO Other Boards	2.763	3.953	0	19	164
Largest Loan Exposure to Capital	29.60	37.01	0	204.3	164
HH Index of Concentration	5 642	2198	0	6979	164
Inflation	1.075	2.186	-2.4	3.7	164

Table 2. Variable Correlation Matrix

	1	2	3	4	5	6	7
Std.Dev ROA (1)	1						
Absolute Dev. (2)	0.810	1					
Adverse Loan (3)	0.508	0.460	1				
Bloc Share (4)	0.024	-0.130	-0.012	1			
Strong Board (5)	-0.063	0.006	0.024	-0.255	1		
Board Size (6)	-0.031	0.015	-0.152	-0.231	0.302	1	
Board Com. (7)	0.145	0.232	-0.094	-0.414	0.446	0.079	1
Sep. Risk/Aud.(8)	0.018	0.125	0.110	-0.045	0.453	-0.033	0.217
Chair Boards (9)	-0.129	-0.097	-0.164	0.024	-0.025	-0.001	-0.009
Capital Ratio (10)	-0.422	-0.569	-0.561	0.041	0.215	0.079	0.107
CEO Power (11)	-0.028	-0.108	-0.050	-0.080	0.172	0.195	-0.215
CEO Boards (12)	-0.051	-0.006	-0.077	-0.109	0.019	-0.019	0.102
Exec. Dir. Rat. (13)	-0.120	-0.094	-0.135	-0.066	-0.236	0.085	-0.052
Loan Exposure (14)	-0.291	-0.273	-0.256	0.151	-0.076	-0.006	-0.169
HH Index (15)	0.141	0.216	0.156	-0.045	-0.288	-0.002	0.010
Inflation (16)	0.080	0.061	-0.216	-0.055	-0.238	0.135	0.002
	8	**9**	**10**	**11**	**12**	**13**	**14**
Sep. Risk/Aud.(8)	1						
Chair Boards (9)	0.031	1					
Capital Ratio (10)	-0.009	0.165	1				
CEO Power (11)	-0.384	-0.328	-0.026	1			
CEO Boards (12)	0.018	0.605	0.029	-0.229	1		
Exec. Dir. Rat. (13)	-0.305	-0.056	-0.124	0.681	-0.044	1	
Loan Exposure (14)	0.102	0.064	0.141	-0.006	0.001	-0.043	1
HH Index (15)	0.023	0.254	-0.142	-0.462	0.221	-0.096	0.042
Inflation (16)	-0.177	0.143	-0.151	-0.041	0.138	0.184	0.092
	15	**16**					
HH Index (15)	1						
Inflation (16)	0.178	1					

The index of board strength averages 3.2 on a scale of 0-4 scale, which suggests that the bank boards are relatively strong. At least 64% of the banks are above the median score on the board strength score. Table 1 shows that 31% of the banks have scored at least above the median score for the index of CEO power, implying that about 70% of the banks' CEO are not that powerful. On the basis of the index components, the proportion of the executive directors on boards averages 28%, while the average for other directorships for the CEO is 3.

Our measure of shareholder power shows that the top 5 shareholders hold about 90% of bank shares on average. The average shareholding for the largest shareholder 72%. The average for the HH index is 5642, which is above 5000; suggesting a relatively concentrated market. The average capital adequacy ratio is 21%, with a minimum of -1.3% and a maximum of 75.3%.

4. Results

4.1 Governance Indicators for Surviving and Failed Banks

Table 3 below summarizes the statistics on the corporate governance indicators for banks that survived through the study period and those that failed. A total of 8 banks failed or were merged with other banks between 2010 and 2017. We also include the t-statistics for the mean differences between the indicators of corporate governance for the two bank categories. The table shows that significant differences on the indicators were in respect of the index of board strength, board size, index of CEO power, and other directorships for the CEO and board chair.

Table 3. The Average Characteristics of Failed[1] and Surviving Bank (2009-2017)

Indicator	Survivors		Non-Survivors		$\bar{X} - \bar{Y}$
	Mean	Std. Err.	Mean	Std. Err.	P(|T|>|t|)
Adverse Loan Ratio	9.4	1.04	36.2	5.8	0.00***
Return on Asset Std. Dev.	0.94	0.06	4.92	1.09	0.00***
Absolute Dev. From Return	2.13	0.15	7.77	0.83	0.00***
Block Shareholding (%)	89.8	1.28	90.7	3.26	0.38
Board Index	2.7	0.09	2.1	0.17	0.01***
Board Size	10.1	0.17	9.3	0.42	0.02**
Percent of Powerful CEO	30.3	0.04	51.6	0.06	0.01**
No. of Executive Directors	2.9	0.11	2.5	0.21	0.03**
No. of Board Committees	5.5	0.13	5.7	0.41	0.26
Separate Risk Committee (%)	78.5	3.7	67.6	8.1	0.09*
Chair Other Boards	3.4	0.27	1.9	0.34	0.00***
Exec. Dir. Other Boards	3.2	0.35	1.6	0.28	0.01**

These are banks which were closed, put under curatorship or taken over between 2010/17.

4.2 Econometric Results and Analysis

The Generalised Least Squares (GLS) random effects estimation approach was used to estimate model 1. The estimation procedure follows from Baltagi and Wu (1999). It is robust to 1st order serial correlation and cross-sectional heteroskedasticity in unbalanced panels, which is suitable for our data. The Durbin–Wu–Hausman specification test (Durbin, 1954, Wu, 1973 and Hausman, 1978) was used to determine the appropriateness of the fixed effects and random effects specifications and the random effects models were recommended by the tests. The joint significance of variables was established on the basis of the Wald test (Wald, 1943).

Table 4 presents the results of the basic models without any interactions. Columns 1 and 3 of table 4 present results on the effects of board strength index, block shareholding and CEO power on bank risk; using the ROA standard deviation and the ADER, respectively. Results in columns 2 and 4 are disaggregate the composite governance indicators into their separate components. In all the estimated models, we control for other bank characteristics, market and economic factors that have a bearing on bank risk. The results on loan largest exposure suggest that banks with higher loan concentration have returns that are less volatile. This suggests that lending by the banks is anchored on a few large loans. This increases the vulnerability of banks adverse shocks on the loans and is practically not a good scenario for the banks. The results also suggest that a reduction in competition reduces bank risk taking while an increase in bank capital reduces risk taking. The result on bank capital suggests that the banks on average tend to play it safe when the statutory minimum capital is raised in order to protect their capital.

Table 4. GLS Random Effects Regression Results on Effects of Board, Shareholder and Executive Director Power Factors on Bank Risk on

Dependent Variable	ROA Standard Deviation		Absolute Dev. from Exp. Return	
	(1)	(2)	(3)	(4)
Block Shareholding	-0.0112(0.0183)		-0.0478(0.0465)	
Individual Block Shareholding		0.0250(0.0126)**		0.0321(0.0086)***
Institutional Block Shareholding		-0.0148(0.0258)		-0.0942(0.0553)*
Govt Block Shareholding		-0.0417(0.0116)***		-0.0467(0.0462)
CEO Power Index	-0.4072(0.2011)**		-0.7041(0.3100)**	
No. of Other Directorships for Executive Director		-0.0479(0.0320)		-0.0374(0.0477)
Percentage of Exec. Dir. On Board		-0.4871(0.2174)**		-0.8407(0.3866)**
Index of Board Strength	0.5859(0.2038)***		1.1336(0.3717)***	
Board Size		0.4911(0.2209)**		0.3068(0.1698)*
No. of Board Committees		0.2535(0.1515)*		0.7714(0.3299)**
Separate Risk/Audit Committees		0.1637(0.2431)		0.0855(0.4820)
No. of Other Directorships for Board Chair		0.0989(0.3155)**		0.3235(0.4718)
Bank Asset Ratio	-0.9400(0.2136)***	-0.9690(0.2048)***	-0.8263(0.4806)*	-1.0428(0.5414)**
Percentage of Largest Loan Exposure	-0.1992(0.0598)***	-0.2079(0.0599)***	-0.3433(0.1151)***	-0.3305(0.1067)***
Bank Capital Ratio	-4.1487(1.2236)***	-3.9545(1.2424)***	-10.8286(2.0574)***	-10.5112(1.9350)***
HH Index of Market Concentration	0.0002(0.0001)*	0.0002(0.0001)*	0.0003(0.0001)**	0.0003(0.0001)**
Constant	21.0740(5.6144)***	18.0339(4.3730)***	25.0723(12.4574)*	23.2837(9.8894)*
N	161	161	160	160
R^2	0.67	0.77	0.58	0.54
Time Effect	Yes	Yes	Yes	Yes
Test for Joint Significance[2]:				
Overall Model; F(10/16,160)	72.4***	316.7***	70.0***	331.7***
Strong Board Index; F(1, 160)	8.3***	N/A	9.3***	N/A
CEO Power Index; F(1, 160)	4.1**	N/A	5.2**	N/A
Bloc Shareholding; F(1, 160)	0.37	N/A	1.1	N/A
Board Factors; F(2,160)	N/A	11.6**	N/A	10.0**
Shareholding Factors; F(3, 160)	N/A	14.3***	N/A	18.9***
CEO Factors; F(2, 160)	N/A	7.2**	N/A	5.8*

Std. Error in parenthesis $^*p < 0.10,$ $^{**}p < 0.05,$ $^{***}p < 0.01,$. Joint sig. tests use Wald Test under the Ho of joint insignificance.

The Effect of Shareholder Power

hen block shareholding is not defined by type of ownership, its effect on bank risk taking is insignificant. The result confirms findings by John et al,. (2007) and contradicts Pathan and Skully (2009) who finds that an increase in bank block shareholding reduces risk. However, when block shareholding is disaggregated by type of bank ownership in columns 2 and 4 to account for possible differences in risk behaviours of individual, institutional and government shareholders, the result is different. The results suggest that an increase in block shareholding in the banks that are owned by individuals raises bank risk. The impact of block shareholding in banks that are owned by institutions

remains insignificant whilst block shareholding in the government owned banks reduces risk only when the ROA standard deviation is used and has no effect on bank risk when the ADER risk measure is used.

The result that block shareholding in banks that are owned by individual shareholders raises bank risk taking confirms Laeven and Levine (2008) who argue that block shareholders may raise bank risk taking to enhance their individual cash flow benefits arising from higher bank profitability associated with higher risk taking. This is anticipated when there is deposit protection insurance as in the case of Zimbabwe, which cushions shareholders in the event of bank failures. The result on block shareholding in the government and institutionally owned banks, however, seem to suggest that the banks' decisions are more rule based and not easily influenced by the actions or behaviours of individual shareholders.

The Effect of CEO Power

The results suggest that on average powerful bank CEOs take less risk than otherwise. On the basis of columns 2 and 4, the result is driven by the proportion of the executive directors on bank boards. The number of the CEO's other directorships in other companies has no effect on bank risk, which suggest that whether a CEO is popular or not it does not matter on how much risk the bank takes. The result that more powerful CEOs prefer less risk is unusual. According to the results, it implies that an increase in the percentage of executive director's presence on bank boards, which gives the CEO more decision making power reduces bank risk taking to the contrary of the theoretical expectation that powerful CEOs have high appetite for risk. According to the study by the IMF (2014) and Srivastav and Hagendorf (2016) the relationship reflects the nature of employment and remuneration contracts for the average bank CEO in Zimbabwe. The result suggests that on average the bank CEOS are highly remunerated and their remunerations are generally less linked to performance and more linked to bank risk outcomes. According to Bertrand and Mullainathan (2003), CEOs operating under such contracts tend to opt for a 'quiet life' involving less risk taking at the expense of profitability.

The Effect of the Strength of the Board

The estimated results suggest that stronger boards lead to higher bank risk taking than weak boards. The result is consistent with the findings by Pathan and Skully (2009) and Mnasiri (2015). The finding prevails when the bank executives are self-serving and risk-reserved but undermining the quest for higher profitability by the shareholders. Under such circumstances, the strong boards act in the interest of shareholders by compelling bank executives to take more risk for higher profits. The results on the components of the index of board strength in columns 2 and 4 suggest that the factors that push for higher risk taking are board size, number of board committees, and the number of other board directorships for the board chairperson.

The separation of the audit and risk committees does not have significant effect on bank risk. Thus, what matters with respect to the influence of the board on bank risk is the composition of the board, its size and the popularity of the board chair. The result that more popular board chairpersons have the power to influence bank risk is critical for policy purposes for banks that may need to have extra governance mechanisms to keep the powers of such chairs under check.

4.2.1 Capital Regulation and Bank Risk Taking

Following Laeven and Levine (2008), we further interrogated the influence of bank capital regulation on how bank risk taking responds to shareholder influence in banks that are owned for individuals, institutions and the government. To address this question, we interacted block shareholding, bank ownership type and bank capital ratio in the estimated risk equations. The estimated results are presented in table 5. The results in columns 1 and 4 show that the joint increases in block shareholding and bank capital ratio in banks that are owned by individuals results in higher bank risk. The results hold for both the standard deviation ROA and ADER measures of risk. The results in columns 2 and 5 show that the joint increase in required capital and block shareholding for banks that are owned by institutions results in low bank risk.   Lastly, the effects of a joint increase in block shareholding and required capital for the government owned banks on bank risk in columns 3 and 6 is inconclusive between our two measures of risk. It raises bank risk on the basis of the ADER and has an insignificant effect on SD ROA.

Table 5. GLS Random Effects Results on the Effect of Bank Regulation on Bloc Shareholder Risk Behaviour

Dependent Variable	ROA Standard Deviation			Absolute Dev. from Exp. Return		
	(1)	(2)	(3)	(2)	(5)	(6)
Board Strength Index	0.527(0.187)***	0.571(0.204)***	0.505(0.181)***	1.151(0.336)***	1.148(0.368)***	1.093(0.359)***
CEO Power Index	-0.443(0.204)**	-0.420(0.199)**	-0.393(0.198)**	-0.773(0.302)**	-0.702(0.298)**	-0.711(0.319)**
Individual Block Shareholding	0.031(0.015)**	0.041(0.015)***	0.023(0.013)*	0.036(0.014)**	0.041(0.013)***	0.033(0.011)***
Institutional Block Shareholding	0.016(0.009)*	0.023(0.012)*	-0.013(0.025)	-0.043(0.045)	-0.073(0.051)	-0.095(0.053)*
Government Block Shareholding	-0.048(0.012)***	-0.041(0.011)***	-0.046(0.016)**	-0.070(0.046)	-0.041(0.051)	-0.054(0.049)
Ind. Block Shareholding *Capital Ratio	0.048(0.016)***			0.059(0.029)**		
Inst. Block Shareholding *Capital Ratio		-0.046(0.014)***			-0.042(0.025)*	
Gvt. Block Shareholding *Capital Ratio			0.037(0.026)			0.061(0.025)**
Bank Asset Ratio	-0.927(0.149)***	-0.904(0.149)***	-0.965(0.209)***	-0.861(0.479)*	-0.902(0.503)*	-0.968(0.526)*
Percentage of Largest Loan Exposure	-0.221(0.068)***	-0.219(0.067)***	-0.195(0.056)***	-0.368(0.136)***	-0.348(0.120)***	-0.318(0.093)***
Capital Ratio	-6.713(1.584)***	-2.415(1.151)**	-4.131(1.273)***	-13.401(2.313)***	-8.628(1.830)***	-10.451(1.919)***
HH Index of Market Concentration	0.0001(0.000)*	0.0001(0.000)*	0.0001(0.000)*	0.0002(0.000)**	0.0002(0.000)**	0.0002(0.000)**
Constant	17.096(4.099)***	15.549(3.820)***	18.345(4.400)***	17.863(9.790)*	18.034(10.103)*	20.038(10.616)*
N	161	161	161	160	160	160
R^2	0.88	0.87	0.73	0.62	0.55	0.52
Time Effect	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	No	No	No	No	No	No
Test for Joint Significance[2]:						
Overall Model; F(13,160)	597***	873***	561***	362***	320***	352***
Board Factors; F(1,160)	7.9***	7.9***	7.8***	11.7***	9.7***	9.3***
Ownership; F(4, 160)	39.7***	35.1***	15.8***	17.6***	18.3***	27.8***
CEO Factors; F(2, 160)	4.7**	4.4**	3.9**	6.6**	5.5**	5.0**

Std. Error in parenthesis ($^*p < 0.10$, $p < 0.05$, ** $p < 0.01$, ***. ; Joint significance tests use Wald Test under the Ho of joint insignificance.

The increase in bank risk for the individually owned banks following the joint increase in the required minimum bank capital and block shareholding confirms Laeven and Levine (2008)'s implied cost of capital effect of changes in required bank capital. It suggests that the shareholders of the banks perceive the increase in capital as an additional cost of capital. According to Anderson and Fraser (2000), this occurs if the banks face liquidity constraints which requires them to borrow or source extra liquidity to fund the increase in the required capital. In that case the shareholders may respond by forcing the bank to lend more aggressively and take more risk in order to recover the extra cost of capital.

The reduction in bank risk for the institutionally owned banks following a joint increase in block shareholding and required bank capital on the other hand, suggests that the banks in this category are likely to be having excess liquidity and prefer to keep their capital safer in the event of increased minimum capital requirements. The shareholders of the banks perceive a bigger stake of their wealth at risk following the increase in minimum capital; which they protect by investing in less risky assets. An important result coming from table 5 is the non-symmetrical risk influence of bank capital on bank risk taking for which the type of bank ownership plays a role. It suggests that the use of the statutory bank capital requirement as a tool to influence bank risk taking can have unpredictable effects on bank risk taking and financial sector stability. Its effects ultimately depend on the type of ownership for most of

the banks and their liquidity conditions. Financial sector regulators should, therefore, be guided by these factors when they use the tool for influencing banks' risk taking behaviours.

5. Conclusion

The study employed two alternative measures of bank risk; namely the standard deviation of the return on assets and the absolute deviation of the expected returns to estimate the effects of different bank governance factors on bank risk taking. Qualitatively similar results were obtained across the two risk measures. The results suggest that the key governance determinants of bank risk taking are the strength of the board, the power of the CEO and bank black ownership type. The components of the three aggregated variables influence risk with varying signs, strengths and robustness. The effects of the interaction between bank ownership types and bank capital regulation on bank risk takings were also estimated and the results are mixed depending on type of bank ownership in the financial sector.

We have results suggesting that aggregate block shareholding has no effect on bank risk taking. However, when the variable is split by block ownership type; we find that individual block shareholders have an appetite for higher risk taking, while the results of institutional and government ownerships are inconclusive between our measures of risk. More powerful CEOs tend to prefer less risk taking. The result is driven by greater representation of executive directors on bank boards. We have linked the result to the prevalence of 'lucrative' executive employment contracts with benefits that are less linked to performance. The contracts persuade the bank executives to opt to play it safe by taking less risk at the expense of shareholder's profits. Strong boards driven by the size of the board, number of board committees and the popularity or dominance of the board chair result in higher bank risk. We suggest that the result is necessary in an environment where the bank CEO and executive directs are more self-serving and risk-reserved in order to compel the executive directors to take more optimal risk consistent with the interest of the shareholders.

The interaction between bank ownership types and bank statutory capital requirements has results suggesting that an increase in bank capital in the banks that are owned by individuals increase bank risk while the same change in bank capital reduces risk in institutionally owned banks. The risk effect in the government own banks is inconclusive between our two measures of risk. We have, therefore, argued that changes in bank capital as a tool to influence bank risk has results that are unpredictable depending on the bank ownership type and whether the change in required capital is a cost to the banks or not.

The study results are important policy wise. They suggest that the popular and in most cases uninformed policy strategies to weaken the power of the bank CEO or to strengthen the board in order to dampen bank risk taking may not yield the intended results unless the policies take into account the nature of the average employment contracts of the bank executives and the interests represented by the bank boards between those of the shareholders and the bank inside executives. Where the executives are well paid and their remuneration is not linked to bank performance, they may be reluctant to lend and assume more risk even if the government prefers them to lend more for purposes of stimulating the economy. Under such circumstance, powerful and influential boards serving the interests of shareholders may actually assist in meeting the government objective. The results also suggest that the regulators of the financial sector need to take into account ownership types of the majority of the banks and their liquidity conditions when they use statutory bank capital requirement to influence bank risk taking.

An important contribution of the study follows from the interrogation of the influence of the interaction of the bank capital requirements and bank ownership type on bank risk taking. The approach allowed us to establish the differences in bank risk taking that result from the differences in the risk behaviours of different types of block shareholdings.

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Notes

Note 1. See initiatives by Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS).

Note 2. The number of the country's banks fell from more than forty banks in 2004/05 to less than twenty by 2018.