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Research article

Corporate governance mechanism and performance of insurers in Pakistan

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Abstract: This paper aims at investigating the relationship between corporate governance mechanisms (CGM) and the performance of insurers in Pakistan. Major corporate governance theories such as agency theory, resource dependence theory, and stewardship theory are used to address governance mechanisms. Data of listed insurers on the Pakistan Stock Exchange (PSX) was collected from annual reports for a period of 12 years from 2007–2018. Pooled OLS is used for analysis purpose, and findings indicate that board composition, ownership concentration, and executive compensation are the most influential internal CGM for the insurers' performance. Board composition and executive compensation are significantly negatively related to all performance measures, but ownership concentration significantly positively impact the performance of insurers in Pakistan. Control variables size and age positively impacts all performance measures while leverage negatively impacts all performance measures. In sum, the regression results of this study indicate that CGM has significant effects on the insurer's performance in Pakistan.

Keywords: CEO compensation; corporate governance; board structure; firm performance; ownership concentration

JEL Codes: G22, G30, M12

1. Introduction

Insurance not only transfers the risk and provides business safety, but it also increases deposit base, national welfare, and macroeconomic stability. In accordance, the insurance industry provides protection and enhances the performance of the businesses, which in turn improves the economic conditions of the country. Therefore, it is necessary to ensure the performance of this sector with good CGM practices (Adeyele and Maiturare, 2012). In the current evolving era, corporate governance has gained much attention due to the need for restoring the confidence of investors in the capital markets. Scandals and incidents like Enron, Harris Scarfe, WorldCom, One. Tel and HIH increased the need for the development of various standards and reforms internationally (Jackling, 2009). These major incidents happened due to weaker CGM, which arouses the need for an in-depth governance structure for restoring investors' confidence in the capital markets (Berkman et al., 2009). CGMs are the procedures, tools, and systems which direct and control the company in the right direction. Through these tools and system shareholders, investors and financial suppliers of the firms ensure and track return on their invested finances and also reduces principal-agent problems (PAP) (Rudkin et al., 2019; Waheed and Malik, 2019).

According to the agency theory perspective, complying with CGM codes enable firms to monitor managerial activities which reduces the chances of PAP. Thus, complying with CGM codes minimizes the cost of PAP and enhances the firm's performance (FP) (Hussain et al., 2019). Accordingly, stewardship theory suggests positive relations between FP and the role of the steward. This suggests larger board size can affect FP positively due to their experience, expertise, and diverse knowledge (Bhat et al., 2018). Alternatively, larger board size puts an extra burden on firms due to higher costs associated with them and in turn reduces the firm's level of efficiency (Rashid and Islam, 2013). Whereas having fewer board members minimizes the firm's costs and ultimately increases the firm's performance (Yermack, 1996). Resource dependence theory tells that firms' directors who are also board members of other firms can be utilized as resources in providing information regarding competitors due to their relationships with an extensive business network. Hence, the theory offers support for sufficient non-executive and independent directors in the firm's board as they are related to an increase in FP (Arora and Sharma, 2016). Alternatively, Vafeas (1999) suggests that independent directors are not in the greater interest of firms as they spend less time with other directors within a firm. The ownership structure of the firm, either concentrated or dispersed, is also related to the agency problem. According to Wiwattanakantang (2001), ownership concentration (OC) positively impacts the performance due to fewer shareholders with large share proportions, work for the common goals, and in turn company performance increases in the shape of higher returns. Alternatively, ownership concentration may negatively affect FP due to the conflicts between major shareholders and bad governance, which leads to agency problems (Lehmann & Weigand, 2000; Tam & Tan, 2007). CEO is regarded as the most critical asset of the firm, and there is a massive debate on CG issues related to CEO. To align the company and employee's objectives, the CEO should be compensated with excellent packages. CEO compensation has positive links with FP (Erick et al., 2014).

1.1. Research gap, motivation, and objectives of the study

In developed countries, corporate governance is the priority research area, and corporate governance mechanisms are majorly derived and implemented due to institutional similarities.

However, the results of the previous studies are not consistent and are equivocal (Arora and Sharma, 2016). On one side, studies support that CGMs enhance the firm's performance (e.g., Sheikh et al., 2013; Yasser et al., 2011; Singh et al., 2018). On the other side, studies show an insignificant relationship between CGM and firm performance (e.g., Akbar et al., 2016). However, in developing economies like Pakistan, empirical research related to corporate governance is still at infancy. This is maybe because of the non-availability of research data or weaker systems of CG practices in the country (Jackling and Johl, 2009; Sheikh et al., 2013; Sheikh and Karim, 2015; Arora and Sharma, 2016). There are some useful studies on CGM in the corporate sector and manufacturing firms in Pakistan, and their results are valuable, but these results can't be implemented on financial firms (Sheikh et al., 2013). Moreover, when we consider the financial sector mainly, there are some useful studies on conventional banking and the Islamic banking sector (Sheikh and Karim, 2015), but less attention is paid to other financial firms, including insurance, modarba, and takaful. Despite the importance of the insurance sector in Pakistan, there is a minimal amount of existing empirical research on financial firms. Therefore, inconsistent results arouse the demand for this study to examine the impact of CGM on the FP of insurers in Pakistan. Hence, this research aims at investigating whether CGMs have some material effects on the performance of Insurers in Pakistan. To achieve the research objectives, this study examines the board size, board composition, ownership concentration, CEO compensation, and executive compensation of insurers in Pakistan and then measures their impact on performance.

The rest of the paper is organized as follows. Section 2 presents the review of literature in the context of CGMs and FP. Section 3 explains the variables, data and methodology. Section 4 presents the empirical results of the study. Finally, the conclusion is presented in Section 5.

2. Review of literature

This section presents the review of related literature on corporate governance and its relationship with firm performance. Although there is plenty of research on corporate governance, which tried to elaborate the relationship between CGMs and FP but their results are inconsistent and equivocal. The authors have critically discussed the results of previous studies. According to some researcher's CGM have a positive impact on FP. In contrast, some researchers suggest CGMs have negative effects on firm's performance. For example, according to research conducted in Iran by Mashayekhi and Bazaz (2008), board size is negatively associated to the performance. Alternatively, Sheikh et al. (2013) found a significant impact of CGMs on FP in KSE listed companies in Pakistan. He further found a positive relationship between board size and FP. Besides, he found out that ownership concentration and managerial ownership has a negative impact on FP. Doğan and Yildiz (2013) study of banks listed on the Istanbul Stock Exchange suggests that board size is negatively associated to FP. Likewise, Liang et al. (2013) also found a negative impact of board size on the performance of Chinese listed banks.

The existence of non-executive and outside directors is very crucial to the success of the firm. Therefore, researchers have included it as an essential part of CGMs research. The board composition of the firm is considered a positive influencer to the FP (Rosentein and Wyatt, 1990; Mashayekhi and Bazaz, 2008). In contrast, Agrawal and Knoeber (1996), in their research on "Firm performance and mechanisms to control agency problems between managers and shareholders," found out that more executive directors have a negative relationship with FP. Research on companies

listed on the Kuwait Stock Exchange during 2005–2010 stated that ownership concentration has no significant relationship with performance, negating the agency theory (Al-Saidi and Al-Shammari, 2015). Xiao et al. (2013) analyzed the corporate governance mechanism on Chinese listed companies during 2006–2010 and found out that CEO compensation is positively associated with FP. Another study, namely "CEO compensation, customer satisfaction, and firm value," investigates the relationship between CEO compensation and FP. Empirical results of the study indicate that CEO compensation positively impacts FP (Basuroy et al., 2014). Executive compensation is considered an important factor when evaluating firm performance, both positive and negative results are found in the previous literature. Likewise, Lee and Isa (2015) have researched the performance of Malaysian banks from 2003 to 2011, and they have found out that executive compensation has direct links with the firm's performance. Huang et al. (2007) examined the relation between firm performance and corporate governance in life insurance companies in Taiwan. Taking a more in-depth view of ownership structure, he has used shareholding patterns, family ownership, foreign ownership, and age as independent variables. Empirical results indicate that these measures have a positive impact in the case of technical efficiency on the performance of life insurance companies in Taiwan. Grace et al. (2018) examined corporate governance and the performance of financial institutions in Kenya. Data was collected through a five-point Likert scale questionnaire, and empirical results of the study indicate that corporate governance has a material impact on the performance of companies. Results suggest that the board committee has a negative impact on performance. However, board skills are positively related to firm performance, but board size remained statistically insignificant.

Though there are some useful studies on CGM and firm performance, their focus is relatively on non-financial firms. Few studies represent the banking sector, and less attention is paid to other financial sectors, including insurance, modaraba, and takaful. E.g., Sheikh et al. (2013) study titled "the impact of internal attributes of corporate governance on firm performance: evidence from Pakistan" represents that board size, ownership concentration, and CEO duality are positive, while outside directors and managerial ownership are negatively related to firm performance. A positive association of board size, family-controlled firms, and CEO duality with firm performance is observed in a study naming "Impact of corporate governance on the performance of firms: A case study of cement industry in Pakistan" (Cheema and Din, 2013). In a study entitled "effects of Internal governance indicators on performance of commercial banks in Pakistan," a positive association of board size, CEO duality, managerial ownership, and institutional ownership to firm performance is observed. Moreover, ownership concentration remains negative to performance (Sheikh and Karim, 2015). Another research examines the impact of CEO duality on board characteristics and its relationship with firm performance through dynamic penal estimation for listed non-financial firms. The results of the study indicate that CEO duality compromises the efficiency of board independence and also the non-linear relationship of managerial ownership with performance (Akbar et al., 2020). Furthermore, Bakhsh et al. (2017) extended the impact of CGM on firm performance to triple bottom line performance in their study titled "Corporate Governance and its impact on Triple Bottom Line: Evidence from Firms Listed with Pakistan Stock Exchange." The results of the study indicate that board meetings, board size, and institutional ownership are important CGMs for triple bottom line performance.

From the above discussion, it can be analyzed that the focus of most studies is on non-financial firms, and they have ignored the financial firms in their research. Moreover, the results of these studies inconsistent and requires further clarification. Therefore, this research aims at filling the

research gap and focuses on financial firms (generally) and insurers (mainly). The next section provides a review of the most common internal corporate governance mechanisms.

2.1. Internal corporate governance mechanisms

2.1.1. Board size

Deciding the number of members in a company's board has been a hot topic in the corporate governance-related studies (e.g., Neville, 2011; Nadeem and Zongjun, 2012; Sheikh et al., 2013; Sheikh and Karim, 2015). According to some researchers, larger board size is beneficial for the company because it enhances the performance due to smart decision making and close monitoring (Pfeffer, 1972; Klein, 1998; Adams and Mehran, 2003; Anderson et al., 2004; Coles et al., 2001). Other groups of researchers suggest that smaller board size is suitable for company performance because larger board creates problems like communication, backbiting, free riding, and loafing (Lipton and Lorsch, 1992; Jensen, 1993). According to Mashayekhi and Bazaz (2008), board size is negatively related to the performance of the firm because it is challenging to manage the larger board itself due to the weaker control. Alternatively, a bunch of studies argues that a larger board size positively impacts FP as it is congruent with resource dependency (Jackling and Johl, 2009; Ehikioya, 2009). Larger board size has the ability to create a more substantial financial pool and more skills for the firm. Moreover, the firms with larger financial pools and diversified businesses find a problem in getting advice from a smaller board. Therefore, larger board size is required for greater discussions and creative ideas (Yermack, 1996). In accordance to the above discussion, this study postulates the following hypothesis:

H1: *Board size positively impacts insurers performance*

2.1.2. Board composition

Deciding the number of outside directors is a matter of importance and is getting more attention. Sheikh et al. (2013) suggests that outside directors have more abilities and knowledge about the market and inside director have a deep understanding of the firm and its activities. So, having sufficient non-executive directors in a board provides an excellent opportunity to monitor the firm's performance closely. According to Brickley and James (2012), managerial expenses are observed lower when there is a presence of sufficient outside directors in a board. Having more outside directors and executive directors in a firm board positively impacts FP as the executive directors monitor the firms' matters more closely and take necessary actions where needed. It is also observed that if the performance of a company is going weak, the CEO could be changed after sometimes (Weisbach, 1988). Alternatively, Agrawal and Knoeber (1996) suggested that expanding the board with more outside directors is a result of political affiliations and doesn't help in increasing FP. Moreover, sometimes more non-executive directors in a board negatively impact FP because they are not included in the day to day operations, and mangers may try to manage the firm's resources for their interest instead of the firm's interests (Anderson et al., 2004). In accordance to the above discussion, this study postulates the following hypothesis:

H2: *Board composition positively impacts insurers performance*

2.1.3.   Ownership concentration

Ownership concentration is considered as most effective CGM to FP. Ownership structure in the developing countries is quite different from developed countries, e.g., UK, USA, Germany, France, etc. In developed countries, the ownership structure is dispersed and spread over a large number of people, but in developing countries, ownership is not dispersed and is controlled by a few people. Mainly by 5 to 10 largest shareholders, indicating the weak legal system which suppresses the rights of small investors (Sheikh et al., 2013). According to Wiwattanakantang (2001), ownership concentration positively impacts FP because few large shareholders work for the common goals and in turn company performance increases in the shape of higher returns. Alternatively, ownership concentration may have a negative impact on firm performance due to the conflicts between major shareholders and lousy governance (Lehmann and Weigand, 2000). In accordance to the above discussion, this study postulates the following hypothesis:

H3: *Ownership concentration positively impacts insurers performance*

2.1.4.   CEO compensation

If companies do not provide healthy compensation plans to the CEOs, they will work for their interests, not for the company's interests, and it will lead to the agency problems. To align the company and CEO goals, CEO should be compensated with healthy packages (Erick et al., 2014). How well the CEO should be remunerated? It should be following the skills, intellectual, and efforts he put in the organization (Murphy and Zabojnik, 2004). Sun et al. (2013) study indicates that CEO compensation has a significantly positive relation with insurer's performance, which suggests giving a comprehensive package to CEO increase its level of motivation and loyalty, which let him work harder and fairer and ultimately FP increases. Alternatively, Erick et al. (2014) examined the relationship between CEO and insurance firms in Kenya, and according to the empirical results of the study, CEO compensation is insignificant to the insurer's performance. In accordance to the above discussion, this study postulates the following hypothesis:

H4: *CEO compensation positively impacts insurers performance*

2.1.5.   Executive compensation

Executive compensation consists of remuneration of executives other than non-executive members of board and firm, which include pay, bonuses, and other incentives. The incentives are usually better solutions for reducing the conflicts among management and the company goals (Jensen and Murphy, 2010). Ozkan (2007) study on executive compensation and insurance firm's performance states that executive compensation positively impacts the insurer's performance. Alternatively, Erick et al. (2014) conducted a study on the "relationship between executive compensation and financial performance of insurance companies in Kenya." Empirical results suggest that executive compensation is statistically insignificant with the performance. In accordance to the above discussion, this study postulates the following hypothesis:

H5: *Executive compensation positively impacts insurers performance*

2.2. Control variables

Prior studies on CGM and FP have used different control variables, e.g., size, age, and leverage, etc. The reason behind using these variables is their significant relationship with FP. According to Shiu (2004), larger companies have fewer financial problems, and their debt obligations are paid frequently, and they achieve economies of scale, which decreases the cost. Moreover, their talent pool is more extensive and they provide better solutions for the firm, which results in better performance of the firm. Alternatively, larger firms can also negatively impact FP due to their bureaucratic styles and insider politics. Shiu (2004); Sheikh et al. (2013); Afza and Asghar (2012); Akotey et al. (2013) and Sheikh and karim (2015) found the positive results for size and FP. Alternatively, Li Yuqi (2007) and Arora and Sharma (2016) found the negative relationship of size with firm performance. The age of the company is measured as from the year company established to the current year. Different researchers have found a positive relationship of age with insurance performance. This is because older firms have excellent know-how about the market, and they have the experience to solve the problems and tackle the different uncertain situations in the market. Moreover, older firms have more experience, skills, and abilities. That's why they enjoy the consequent learning and superior performance (Maja Pervan, 2010). On the other hand, age is negatively related to performance (Aljamali, 2012). The inverse relationship indicates that older firms are prone to inertia and the bureaucratic structure, which makes them inflexible, and that is the main hurdle in the performance of insurance companies. According to Jensen (1986), agency cost of debt is reduced by the debt due to the free flow of cash comprehensively by taking measures of reducing the flow of available cash flow which is spent on the managers. Leverage also has mixed results with performance Arora and Sharma (2016), and Sheikh et al. (2013) found negative results of leverage with performance while Sheikh and Karim (2015) found the positive effect of leverage on performance. In contrast to the above discussion, this study postulates following hypotheses:

H6: *Firm size is positively related to insurers performance*

H7: *Firm age is positively related to insurers performance*

H8: *Leverage is negatively related to insurers performance*

3. Data and methodology

3.1. Sample selection and data source

This study aims at investigating the relationship between CGMs, e.g., board size, board composition, ownership concentration, CEO compensation, executive compensation, and insurer's performance in Pakistan. Data relevant to CGM was collected from the published financial reports of the PSX listed insurers in Pakistan for a period of 12 years (2007–2018). All the listed companies on the PSX are required to submit the audited annual reports every year, so international accounting standards are adopted to take care of accuracy. Market share price data was arranged from the published diaries of PSX. After eliminating the companies with incomplete data, the final sample size consists of 18 insurers (3 life and 15 non-life) with 216 observations.

3.2. Selection of variables

To compare our results with the existing empirical studies, the definitions of variables used in this study are taken from the existing literature. Both accounting and market-based performance measures, e.g., return on assets (ROA), return on equity (ROE), and Market to book ratio (MBR), are taken as dependent variables. In contrast, board size, board composition, ownership concentration, CEO compensation, and executive compensation were taken as explanatory variables. To check the impact of firm-specific factors on insurance companies' performance, we have used size, age, and leverage as control variables in this study. The definitions of the variables are presented in Table 1.

Table 1. Definition of variables.

Variable Type	Variable	Proxy	Definition
Dependent variables	Return on assets	ROA_{it}	Profit before taxes/Total assets
	Return on equity	ROE_{it}	Profit before taxes/Total Shareholders equity
	Market to book ratio	MBR_{it}	Ratio of market price per share to book value per share
Explanatory variables	Board size	$BSIZ_{it}$	Log of board size
	Board composition	BC_{it}	Non-executive directors/Total number of directors in the board
	Ownership concentration	OC_{it}	Shares held by 10 largest shareholders
	CEO Compensation	CC_{it}	Log of CEO compensation in total
	Executive Compensation	EC_{it}	Log of total compensation of executives (other than CEO) in the company's board
Control variables	Size	SIZ_{it}	Natural log of total assets
	Age	AGE_{it}	Log of age, age is computed by taking the difference
	Leverage	LEV_{it}	Ratio of total debt to total assets

3.3. Model specifications

The data used in this study is overtime and across the firms, so to better estimate our data, we have used the panel data technique because it is an excellent technique to identify the results of a data which is not pure cross-sectional nor time series. The pooled ordinary least squares method is used to obtain the empirical results and analyze the relationship between corporate governance mechanism and performance of insurance companies of Pakistan.

$$Y_{jit} = \beta_0 + \beta_1 BSIZ_{it} + \beta_2 BC_{it} + \beta_3 OC_{it} + \beta_4 CC_{it} + \beta_5 EC_{it} + \sum_{J=1}^{3} \beta_6 Control_{it} + \mu_{it} \quad (1)$$

where, $j = 1,2,3$, $i = 1,2 ,..., 18$, $t = 1,2 ,…, 12$
Y_{1it} represents firm i return on assets at time t,
Y_{2it} represents firm i return on equity at time t,
Y_{3it} represents firm i market to book ratio at time t,
$BSIZ_{it}$ represents firm i board size at time t,
BC_{it} represents firm i board composition at time t,
OC_{it} represents firm i ownership concentration at time t,

CC_{it} represents firm i CEO compensation at time t,

EC_{it} represents firm i executive compensation at time t,

$Control_{it}$ represents i firm j^{th} control variable at time t,

$\beta_0 - \beta_6$ represents the coefficients of the concerned explanatory variable,

μ_{it} represents firm i random error at time t.

4. Analysis of empirical results

4.1. Descriptive statistics

Descriptive statistics of dependent, independent, and control variables are presented in Table 2 and also shown graphically in Figure 1. The mean value of *ROA*, *ROE*, and *MBR* is 0.007, 0.029, and 2.673, respectively, indicating the average return on assets, equity, and market share of insurance companies in Pakistan. The mean value of board size is 0.68, and board composition is 0.68, indicating that 68% board consists of non-executive directors. The average value of ownership concentration is 0.25, which suggests that almost 25% portion of insurance companies' shares are owned by 5 largest shares holders. It also indicates that there is a low-medium level of institutional and legal regulations implemented in the insurance industry. The mean value of CEO compensation and executive compensation are 6.81 and 7.43, respectively. The mean value of size and age is 18.90 and 1.33, respectively. The mean value of leverage is indicating that 56.6% of assets of the insurance companies are financed by the total debt. This might be due to the less trading inside the country and the non-establishment of equity markets on a larger scale.

Table 2. Statistical summary.

| Variables	Obs.	Mean	Std.	Min	Max
ROA_{it}	216	0.0073	0.0281	−0.1072	0.0540
ROE_{it}	216	0.0298	0.0153	−0.0156	0.0702
MBR_{it}	216	2.6734	4.0145	0.1632	33.841
$BSIZ_{it}$	216	0.6803	0.1972	0.2232	0.9904
BC_{it}	216	0.6826	0.4539	0.1857	2.7870
OC_{it}	216	0.2533	0.0677	0.0160	0.7394
CC_{it}	216	6.8144	0.5412	4.8428	7.7916
EC_{it}	216	7.4361	0.8217	5.0453	8.9631
SIZ_{it}	216	18.9075	1.2012	15.5455	21.2117
AGE_{it}	216	1.3393	0.0310	1.2769	1.4067
LEV_{it}	216	0.5667	0.1967	0.1006	0.9484
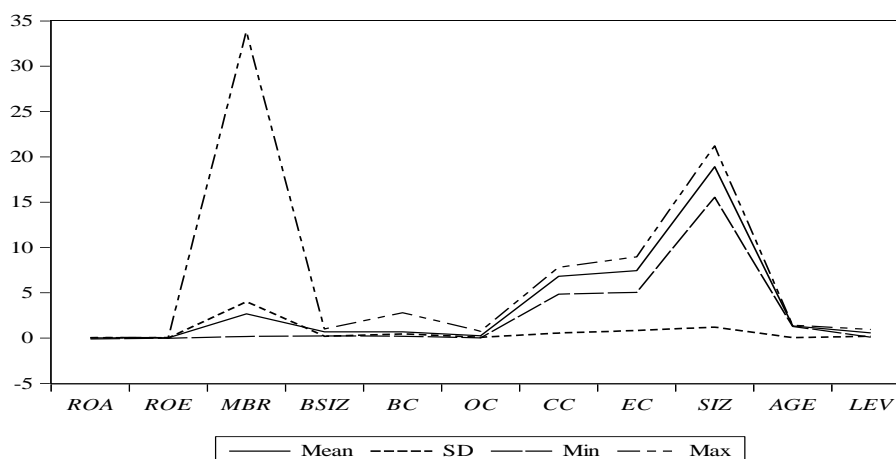
Figure 1. Statistical summary.

4.2. Correlation analysis

To check the multicollinearity, the Pearson correlation method was applied, and the results are presented in Table 3. The results indicate multicollinearity doesn't exist among the explanatory variables because obtained values for variables coefficients are minimal.

Table 3. Correlation analysis.

	ROA_{it}	ROE_{it}	MBR_{it}	$BSIZ_{it}$	BC_{it}	OC_{it}	CC_{it}	EC_{it}	SIZ_{it}	AGE_{it}	LEV_{it}
ROA_{it}	1										
ROE_{it}	0.6862 ***	1									
MBR_{it}	−0.0794	−0.1256 **	1								
$BSIZ_{it}$	−0.1500 **	−0.0595 *	−0.0640 *	1							
BC_{it}	−0.7405 ***	−0.5214 ***	0.2731* *	0.0836	1						
OC_{it}	−0.0832 **	0.1298 **	−0.1693 **	−0.0846 *	0.2019 ***	1					
CC_{it}	0.0081 *	−0.0235 *	0.2136* *	−0.2512 **	0.0581	−0.1475 **	1				
EC_{it}	0.0092	0.0326	0.2042* *	−0.2079 **	0.0568	−0.0782	0.2951 ***	1			
SIZ_{it}	0.5029 ***	0.5339 ***	0.0345	−0.0532	−0.5038 ***	−0.4224 ***	0.0894	0.1627 *	1		
AGE_{it}	0.1558 **	0.2247 **	0.2822 **	0.2232 **	−0.0240	−0.0598	0.1652 **	0.5101 ***	0.2975 ***	1	
LEV_{it}	−0.0160	−0.0362	0.2491 **	−0.0330	0.0748	0.0173	0.1900* *	0.0074	−0.0026	0.1579 **	1

Note: *, **, *** are the significance levels at 10%, 5% and 1%.

4.3. Analysis of regression results

To obtain the results in the data analysis process, three performance measures, ROA, ROE, and MBR, were used to regress against independent variables to check the impact of CGMs on the insurer's performance in Pakistan. Regression results are presented below in Tables 4, 5, and 6.

4.3.1.   Analysis of the influencing factors on return on assets

It can be observed in Table 4 that the probability of the t-statistics of variables BSIZ, CC, LEV is 0.230, 0.642, and 0.954, respectively, which are higher than 0.1, indicating that the influence of these variables on ROA is not significant. The adjoint probability of the t-statistics of the variables BC, OC, EC, SIZ, and AGE are 0.000, 0.018, 0.032, 0.003, 0.013, respectively, all are less than 0.1, which indicates that influence of these variables on ROA is significant. Besides, the model is highly significant as its Prob. (F-statistics) is 0.0000, and R2 is 0.6085, which suggests that our model accounts for 60.85% of the total variability.

Table 4. Dependent variable *ROA*.

Variables	coefficient	SE	*t*-value	*p*-value
C	−0.2854	0.0885	−3.21**	0.002
$BSIZ_{it}$	−0.0824	0.0038	−1.20	0.230
BC_{it}	−0.0516	0.0033	−12.18***	0.000
OC_{it}	0.0517	0.0216	2.39*	0.018
CC_{it}	0.0016	0.0034	0.47	0.642
EC_{it}	−0.0068	0.0033	−2.10*	0.037
SIZ_{it}	0.0043	0.0014	2.99**	0.003
AGE_{it}	0.2075	0.0830	2.50*	0.013
LEV_{it}	−0.0003	0.0067	−0.06	0.954
R^2: 0.6085		*N*: 216		
$\overline{R}^2$: 0.5919		*F-Statistics*: 36.71		
		Prob. (F-Statistics) : 0.0000		
Root MSE: 0.0180				

Note: †, *, **, *** = statistically significant at less than the 0.10, 0.05, 0.01 and 0.001 level.

CGMs such as board size, board composition, and executive compensation negatively impact ROA but board size is statistically insignificant. $\beta_{21} = -0.0516$ means that if an insurance company adds one more non-executive director to the board, than the return on assets of the company will decrease by 5%. In contrast, OC and CC positively impact ROA, but only ownership concentration is statistically significant. $\beta_{31} = 0.0517$ means that an increase in ownership concentration by 1% will increase the ROA by 5%. In view of control variables size and age of insurance companies are positively and significantly related to return on assets, and $\beta_{611} = 0.0043$ and $\beta_{621} = 0.2075$ suggests one value increase in both increases the ROA by 0.4% and 20% respectively, but leverage is statistically insignificant and negatively related to ROA.

Graphical representation of residual, actual, and fitted values after regressing independent variables against the dependent variable are shown in Figure 2. It can be seen that residuals and the

fitted values are uncorrelated; they are in homoscedastic order, and errors are normally distributed. Most of the residual values are between −0.02 to 0.02.
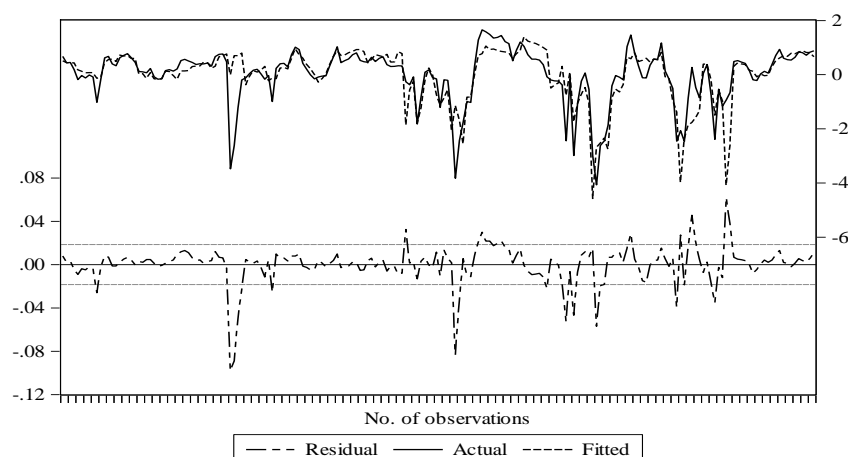

Figure 2. Residual, actual and fitted values of ROA.

4.3.2.   Analysis of the influencing factors on return on equity

It can be observed in Table 5 that the probability of the *t*-statistics of the variables *BSIZ*, *CC*, *LEV* is 0.330, 0.765, and 0.315, respectively, which is higher than 0.1, indicating that the influence of these variables on *ROE* is statistically not significant. The adjoint probability of the *t*-statistics of the variables *BC*, *OC*, *EC*, *SIZ*, and *AGE* is 0.000, 0.000, 0.006, 0.000, and 0.001, respectively. These are less than 0.05, indicating that the influence of these variables on *ROE* is significant. In addition, the model is highly significant as its *Prob*. (*F*-statistics) is 0.0000 and R^2 is 0.5520, suggesting that the model accounts for 55.20% of the total variability.

Table 5. Dependent variable *ROE.*

Variables	coefficient	SE	*t*-value	*p*-value
C	−0.2787	0.0515	−5.41***	0.000
$BSIZ_{it}$	0.0038	0.0039	0.98	0.330
BC_{it}	−0.0115	0.0019	−5.89***	0.000
OC_{it}	0.0922	0.0126	7.28***	0.000
CC_{it}	0.0006	0.0020	0.30	0.765
EC_{it}	−0.0052	0.0018	−2.77**	0.006
SIZ_{it}	0.0061	0.0008	7.29***	0.000
AGE_{it}	0.1685	0.0483	3.49**	0.001
LEV_{it}	−0.0039	0.0039	−1.10	0.315
R^2: 0.5520		*N*: 216		
$\overline{R}^2$: 0.5331		*F-Statistics*: 29.11		
		Prob. (F-Statistics): 0.0000		
Root MSE: 0.0104				

Note: †, *, **, *** = statistically significant at less than the 0.10, 0.05, 0.01 and 0.001 level.

Board composition and executive compensation negatively impact *ROE* and are statistically significant, $\beta_{22} = 0.0115$ suggests increasing one non-executive director to the firm's board decreases the *ROE* by 1% and $\beta_{52} = 0.0052$ means that 1% increase in compensation of executives increases the expenses of the firm which reduces the *ROE* by 0.5%. On the other hand, *BSIZ, OC,* and *CC* positively impact *ROE,* but only ownership concentration is statistically significant. $\beta_{31} = 0.0922$ means that an increase in one percent share proportionate of major shareholders increases the *ROE* by 9%. Moreover, the size and age of the insurers are significantly positively impacting *ROE.* Alternatively, leverage is statistically insignificant and negatively related to *ROE.*

Graphical representation of residual, actual, and fitted values after regressing independent variables against the dependent variable are shown in Figure 3. It can be seen that residuals and the fitted values are uncorrelated; they are in homoscedastic order, and errors are normally distributed. Most of the residual values are between −0.01 to 0.01.
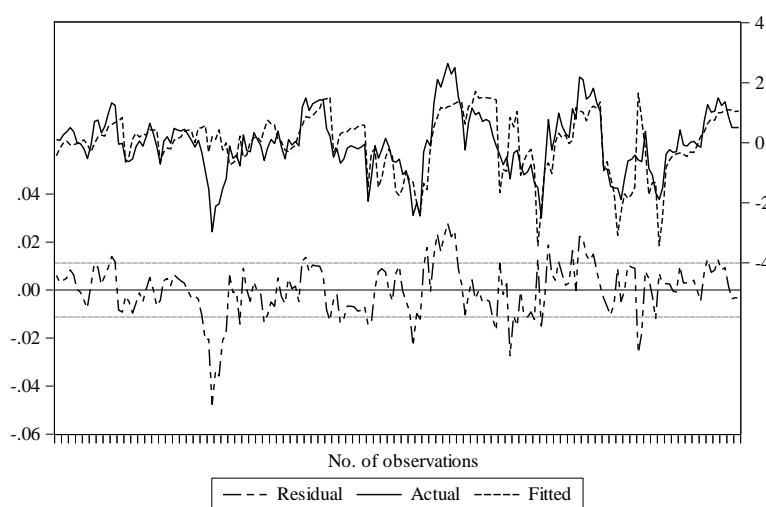

Figure 3. Residual, actual and fitted values of ROE.

### 4.3.3. Analysis of the influencing factors on the market to book ratio

It can be seen observed in Table 6 that the probability of the *t*-statistics of the variables *BSIZ, CC, SIZ* is 0.391, 0.963, and 0.777, respectively which is greater than 0.1, indicating that the influence of these variables on *MBR* is not significant. The probability of the *t*-statistics of the variables *BC, OC, EC, AGE,* and *LEV* is 0.000, 0.002, 0.015, 0.012, and 0.007, respectively, which are less than 0.05, indicating that influence of these variables on *MBR* is significant. In addition, the model is highly significant as its *Prob.* (*F*-statistics) is 0.0000 and R^2 is 0.2520. The model accounts for 25.29% of the total variability.

Table 6. Dependent variable *MBR*.

Variables	coefficient	SE	*t*-value	*p*-value
C	−61.0202	17.4402	−3.50**	0.001
$BSIZ_{it}$	−1.1615	1.3500	−0.86	0.391
BC_{it}	−3.0276	0.6582	−4.60***	0.000
OC_{it}	13.4798	4.2774	3.15**	0.002
CC_{it}	0.0320	0.6823	0.05	0.963
EC_{it}	−0.9279	0.6415	−1.45*	0.015
SIZ_{it}	0.0807	0.2842	0.28	0.777
AGE_{it}	49.915	16.358	3.05**	0.003
LEV_{it}	−3.6429	1.3346	−2.73**	0.007
R^2: 0.2520		*N*: 216		
$\overline{R}^2$: 0.2203		*F-Statistics*: 7.90		
		Prob. (F-Statistics): 0.0000		
Root MSE: 3.5449				

Note: †, *, **, *** = statistically significant at less than the 0.10, 0.05, 0.01 and 0.001 level.

Board composition and executive compensation negatively significantly impact *MBR*, $\beta_{23} = -3.0276$ means that increasing one non-executive director to the firm's board decreases the value of *MBR* by 3.02. $\beta_{53} = -0.9279$ means that a 1% increase in compensation of executives increases the expenses of the firm, which reduces the *MBR* by 0.92. On the other hand, *OC*, *CC* positively impacts *MBR* but only ownership concentration is statistically significant. $\beta_{33} = 13.4798$ means that an increase in one percent share proportionate of major shareholders increases the value of *MBR* by 13.4. Moreover, the size and age of the insurers are positively related to *MBR,* but only age is statistically significant. Leverage is statistically insignificant and negatively related to *MBR*. $\beta_{633} = -3.6429$, indicating a one percent increase in leverage decreases the Value of *MBR* by 3.64.
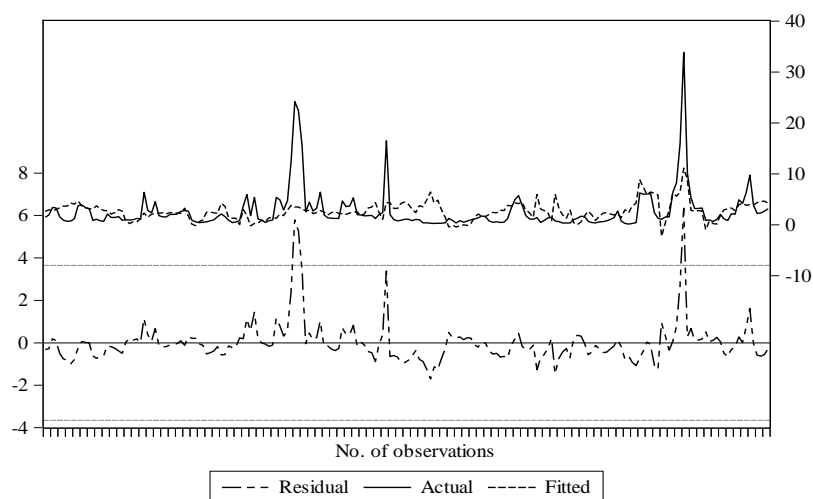
Figure 4. Residual, actual and fitted values of MBR.

Graphical representation of residual, actual, and fitted values after regressing independent variables against the dependent variable are shown in Figure 4. It can be seen that residuals and the

fitted values are uncorrelated; they are in homoscedastic order, and errors are normally distributed. Most of the residual values are between −0.4 to 4.

4.4. Discussion on regression results

According to the empirical results of the study board composition, ownership concentration and executive compensation are significant CGMs to insurer's performance. Whereas the relationship of board composition and executive compensation is negative, and ownership concentration is positive to the insurer's performance. The negative relationship of board composition suggests that more non-executive directors in the insurance company board have a negative impact on insurance company performance. This might be due to managers work for their personal benefits and use company resources for their personal matters instead of company goals. Because non-executive directors are not a part of the day to day operations and are only involved in policymaking and attend the meetings of the company, so they can't monitor company resources. This is a common scenario in developing countries due to inappropriate governance mechanisms and inadequate monitoring of company resources. The negative result for insurer performance and ownership concentration is consistent with the findings of Agrawal and Knoeber (1996), Coles et al. (2001), Ehikioya (2009), Kiel and Nicholson (2003) and Sheikh et al. (2013). Ownership concentration positively impacts the insurer's performance suggesting that few major shareholders have the ability to monitor the firm closely and take the necessary actions to increase the firm's value. The positive results are inconsistent with the agency theory explanation, which suggests that keeping the large ownership to a few people in the organization negatively impacts FP. But the scenario is different in Pakistan from the West because a few members hold the ownership of the company, and the average percentage for the 5 largest shareholders of insurance companies is 68%. The positive impact of ownership concentration and the insurer's performance is consistent with the empirical results of Wiwattanakantang (2001), Ehikioya (2009), and Sheikh et al. (2013).

Apart from CGMs, we have used three control variables including size, age, and leverage, to check the impact of firm-specific variables on the insurer's performance. Size and age both statistically positively impact the insurer's performance, while leverage is negatively related to the insurer's performance and its relationship is only significant with MBR. The positive impact of size on the insurer's performance is may be due to they have more capacity to deal with market fluctuations and uncertainty than smaller companies, and their talent pool is wider. They have more trained, skilled, experienced, and qualified employees than smaller companies. The results of the study are congruent with Shiu (2004) and Sheikh and Karim (2015). The age of the firm significantly positively impacts the performance of insurers in Pakistan. Older firms have more experiences, abilities, skills, and knowledge to deal with their stakeholders. These factors ultimately create a positive impact on the insurer's performance. The results are consistent with Afza and Asghar (2012) and Pervan et al. (2013).

5. Conclusions

This study has provided an investigation of the CGMs and performance of insurers in Pakistan. Empirical results state that board composition and executive compensation have a significantly negative impact on the insurer's performance. It suggests that more non-executive directors in the

insurance company board puts a negative impact on the insurer's performance. This might be due to managers work for their personal benefits and use company resources for their personal matters instead of company goals. Because non-executive directors are not a part of the day to day operations and are only involved in policymaking and attend the meetings of the company, so they can't monitor company resources. This is a common scenario in developing countries due to inappropriate governance mechanisms and inadequate monitoring of company resources. The negative relationship of executive compensation suggests that compensating executives without measuring their performance puts an extra burden on the firm, which in turn decreases insurer's overall performance. In contrast, ownership concentration is significantly positively associated with the insurer's performance, suggesting that a few major shareholders have the ability to closely monitor the firm's issues and take the necessary actions where needed. The positive results are inconsistent with the agency theory explanation, which suggests that keeping the large ownership to a few people in the organization creates a negative impact on firm performance. Notably, the results of board size and CEO compensation suggests no significant relation with the insurer's performance.

Furthermore, three control variables including size, age, and leverage, were used to check the impact of firm-specific variables on the insurer's performance. Size and age both show a statistically positive impact on an insurer's performance. The positive relationship of size with performance is may be due to they have more capacity to deal with market fluctuations and uncertainty than smaller companies, and their talent pool is wider. The positive relationship of age with performance is maybe due to older firms have more experiences, abilities, skills, and knowledge to deal with their stakeholders, creating a positive impact on the insurer's performance. In sum, the regression results of this study represent that CGMs have significant effects on the insurer's performance

5.1. Managerial and practical implications of the study

The findings of this study have several practical and managerial implications. First, this study is useful for the Security Exchange Commission of Pakistan (SECP) to form new rules and policies for the development of robust internal corporate governance mechanisms in insurance companies of Pakistan. Second, this is the first study that deals with CGMs and FP in the insurer in Pakistan with such detailed aspects. It gives managers a complete understanding of the structure of the board, its composition, ownership, and CEO and executive compensation. Insurance firms can formulate their structure and policies in guidance with this study. Third, this study could be used as a base for the development of further conceptual and empirical studies on financial firms, which is a quite underprivileged area in terms of research in Pakistan.

5.2. Limitations and future research avenues

Apart from the importance and implications, this study is subject to no. of limitations. First, the sample size is limited to 18 firms due to the non-availability of the data. Second, Takaful firms are excluded from this study. It is suggested for future researches to include Takaful firms in the research and also include the external governance mechanism to check their impact on the performance of financial firms in Pakistan.

Conflict of interest

All authors declare no conflicts of interest in this paper.

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