Role of discretionary earning management in corporate governance-value and corporate governance-risk relationships

Affaf Asghar, Seemab Sajjad, Aamer Shahzad and Bolaji Tunde Matemilola

Abstract

Purpose – Corporate governance (CG) is an ongoing interesting topic getting the attention of market participant, business regulators and researchers in today's business environment. The purpose of this study is to analyze the moderating role of earnings management on CG-value and CG-risk relationship in the emerging economy of Pakistan.

Design/methodology/approach – A panel data analysis is used in this study. A panel data of 71 non-financial listed companies of Pakistan for the 2008-2017 period is considered for this study. Secondary data is collected from the annual reports of non-financial firms listed on PSX. Seven econometric equations are developed to test the research hypothesis.

Findings – The results reveal that CG significantly enhances the firm value and performance measures. Moreover, CG mitigates the practices of earning management and eliminates the risk that develops opportunistic behavior among managers to commit frauds.

Practical implications – The results of this study suggest that the board of directors (BODs) should intensify their governance role and ensure that the executives perform their duties to maximize the wealth of the shareholders and not engage in any misrepresentation of accounts that may lower the company position and decrease the firm value. Moreover, the managers should be informed about their accountability and acknowledged that at the end of the year, they would be audited by an expert's auditors for their responsibilities. Concerning regulatory bodies, regulatory authorities should ensure that there must be at least one independent member on the board. The better-governed system reduces both agency conflicts and enhances firm value.

Originality/value – A number of studies have already been undertaken by multiple investigators to build connection among CG with firm performance, but there is not even a single study in the literature that considers CG, firm value, firm Risk and discretionary earning management as a whole in one model to generalize its results in the emerging economy of Pakistan. A fundamental element of current analyzation process addresses that this is the very first graft of study conducted in Pakistan having combination of four variables together in one revision. There is minimal work that focuses on moderating effects of earning management on the CG-value and CG-risk relationships. This study uses two standard measures of firm performance (i.e. ROA and Tobin's Q), one proxy of earning management (DEM) and three attributes of CG (board size, audit quality and ownership structure). Previously, researchers have not investigated a model that combines variables (CG as independent and Firm performance and Firm Risk as dependent along with DEM as moderator) in a single study.

Keywords Firm performance, Corporate Governance, Tobin's Q, Discretionary Earning Management, Return on assets (ROA)

Paper type Research paper

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1. Introduction

Corporate governance (CG) is a mechanism that connects every stakeholder by giving them equal strength to minimize agency conflicts. CG provides a governance control mechanism to an organization and influences the relationship of not the only the Board of Directors (BODs) and shareholders but also the employees, suppliers, customers and most

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importantly to community and society as a whole. Over the years, concern for CG has been increasing in emerging economies because of problems such as inefficient control of management and the issue of reoccurring bankruptcy. These problems have occurred because of the absence of a sound CG system and corporate rules and regulations in the corporation (Buallay et al., 2017).

Mechanism of good corporate structure explains that management is doing their best to appropriately use its available resources. CG mechanism helps companies to reduce the issue that arises between empowered management and shareholders. The effective use of CG not only mitigates the information asymmetry for enhancing managerial efficiency but maximizes the shareholder's wealth by refraining management to get involved in fraudulent acts. A majority of practitioners have concluded these remarks as market participants in the capital market assigned a higher value to the firm in the presence of a better-governed system.

The term CG refers to the set of rules, policies, laws, procedures and instructions and how the firm's tasks are managed and controlled. BODs use CG practices to safeguard the interest of shareholders and stakeholders, to ensure the transparent system and to maintain equality and concern for accountability (Reilly et al., 2018). Good CG discourages earning management practices because it examines, analyzes or monitors financial figures, ensured by generally accepted accounting principles (GAAP). In the absence of CG practices, management could influence the reported earnings or manipulate the accounting information over the interest of the firm by discretionally making investors choose (Patrick et al., 2015).

Earnings management is the alteration of firms' reported economic performance by insiders either to mislead stakeholders or to influence promised outcomes (Leuz et al., 2003). Earning management arises when management uses their estimations in shaping the financial broadcasting results either to mislead the shareholders and stakeholders or to manipulate the aspects that can be influenced by accounting numbers (Healy and Wahlen, 1999). Capital markets are the important factors that majorly rely on financial statements or the credibility of accounting information. The financial problem that happened in the USA and Europe (e.g. Enron, WorldCom and Parmalat) were attributed to weak CG control in a specific slot of the 2000s. The practices of earning management proved to be riskier factor in the financial industry than any other industry because financial institutions such as banks are responsible for ensuring economic stability. If managers of financial establishments will not sincerely perform their duties and hide the extremist risky information, then they might create a bubble that will burst and thus collapse the whole economy. To prevent such economic adversities, shareholders should plan systemized strategies to control and avoid the discretionary behaviour of managers. To avoid such opportunisms behaviour of managers and staff agency theory contemplates, CG is most probably the best mechanism in reducing earning management practices at workplaces (Mersni and Ben Othman, 2016).

Financial scandals increase the importance of improving quality of financial reporting by specifically focusing on earning quality because companies with better-earning quality are ranked high in the capital market.

To avoid losses faced by investors, the "Sarbanes-Oxley Act" was introduced in 2002 in the USA. This reform provides instructions to maintain the strong internal control system and provide guidance to the board for corporate accountability improvements that are directly related the reduction of risk of insolvency in the organization. Other regulatory reforms have highlighted the role of CG and corporate risk management as seen in the Financial Reporting Council published in the UK in 2011. This reform underlined numerous accountabilities that board or management ought to adopt to mitigate risk factor and enhance working proficiency. CG is quite a new term in Pakistan. In March 2002, the Security and Exchange Commission of Pakistan recognized the code for all listed

companies in Pakistan Stock Exchange (PSX) for ensuring good CG control. Thus, a topic focusing on CG and value creation of the firm is necessary for Pakistan. CG is most probably the best mechanism for reducing earning management practices at workplaces (Mersni and Ben Othman, 2016).

A number of studies focus on the relationship between CG and firm value or on earning management and firm value. However, a study that investigates the moderating effect of earning management on CG-value and CG-risk relationship is overlooked in the literature. The risk elements, i.e. corporate risk or cash flow volatility have significant influence, especially in developing countries. Thus, this study investigates the impact of CG on firm value and firm risk; investigates the impact of earning management on firm value and firm risk and analyzes the moderating role of earning management on the relationship between CG and firm value and CG and firm risk.

2. Literature review

A number of studies show that CG affects firm value. Ammann et al. (2011) used data from 22 emerging countries based on 6663 firms' data from 2003 to 2007. CG indices positive influence firm value (proxy by a market measure of firm performance, Tobin's Q). Sami et al. (2011) used 245 Chinese companies data for a period ranging from 2001 to 2003 to explore the governance-value relationship. By applying regression analysis to create a corporate governance score, the results reveal that CG has a significant impact on both return on equity (ROE) and return on assets (ROA).

Danoshana and Ravivathani (2013) explored the effect of CG mechanism on firm performance of listed financial firms using a sample of 25 companies from Sri Lanka for five years covering the 2008 to 2012 period. They used ROE and ROA as proxies for measuring performance and document a significant relationship between CG and the company's performance (Narwal and Jindal, 2015). Jensen (2013) argued that small board size leads toward better firm performance and board efficiency because it enhances the decision-making ability by communicating with all board members. Arora and Sharma (2016) support Jensen's argument. The characteristics of CG such as board size and audit committee have a momentous positive relationship on firm performance.

In a related study, Javaid and Saboor (2015) focused on the role of CG in the determination of firm performance using 58 firms that are listed on Karachi Stock Exchange ranging from 2009 to 2013 and construct a CG index by including different CG and earning quality attributes. Their results show that there is a significantly positive relationship between CG index and firm performance measures (ROE and Tobin's Q). Similarly, Ahmed and Hamdan's (2015) results show that CG has a positive impact on a firm's financial performance. They considered 42 Bahrain listed companies for the 2007-2011 period and reported a significantly positive relationship between CG and financial performance. Belkhir (2009) explained that the role of CEO duality could cut the agency cost and would result in generating good firm performance. When a person enjoying both position simultaneously might be in a better position to manage the affairs of the company. Thus, studies have reported that the role of CEO duality could influence the corporate performance towards improvement (Bukair and Abdul Rahman, 2015).

However, very limited studies have been performed on CG and firm risk as per the researcher's knowledge. Ferreira and Laux (2007) results indicate that CG has a negative impact on firm risk and discover that idiosyncratic risk is negatively related with CG practices in the firm (Chang et al., 2015). Ferrero-Ferreroet al. (2012) revealed evidence that CG helps to reduce the firm systematic and idiosyncratic risk using the measure of the standard deviation of market prices as a proxy variable for identifying firm risk intensity. Similarly, Kusnadi (2015) determines the effect of CG on firm risk-taking behavior and argues that internal control restrictions tend to increase firm risk behavior. He documented a

significant negative relationship between CG and firm risk, which suggest that good CG mechanism lowers the firm risk.

Turning to earn management and firm value, few studies have taken either one or multiple measures of earnings and their impact on firm value via the cost of capital effect. Barth *et al.* (2013) indicates there is an insignificant linkage of earning quality with the cost of capital. However, as earning quality increases in financial reports, the cost of capital decreased because of a reduction in information asymmetry, which appears to increase the firm value. Moreover, financial accounting quality improves the information quality in a positive manner for the stakeholders and thus improves firm value.

Waweru and Riro (2013) explained the fact that organizations who have large proportionate of concentrated ownership are more involved in committing earning management practices. Compared to certain shareholders, independent directors are likely to engage less in doing such ambiguous activities for increasing fund or strengthening their market position (Waweru and Prot, 2018). However, researchers investigate that large board size helps in diluting the influence of family capitalism effect on firm value. Because the large size of board members could influence their professional abilities on the dominant family economy of Pakistan. Thus, board size positively affects the firm's performance (Ciftci *et al.*, 2019).

Unlike previous studies, this study focuses on the moderating effects of earning management attributes on the relationship between CG and firm performance and firm risk. Earning management would be used as a moderating variable to investigate the influence of corporate governance on firm value and risk using panel data of the non-financial sector of an emerging economy, particularly Pakistan. If CG is affected by earning management and earning management separately influences firm value and risk, then what are the effects of earning management on the relationship between CG and firm value and CG and firm risk.

3. Research methodology

3.1 Data

The population of this study is the total number of non-financial firms listed in Pakistani stock exchange. There are 573 total listed firms in the Pakistani stock exchange, among which 129 are financial listed firms and 444 are non-financial firms listed on the Pakistani stock exchange website dated on November 23, 2018. However, the panel data of 71 non-financial firms listed on the Pakistani stock exchange are considered with higher market capitalization and complete data availability. Secondary data are collected from the annual reports of non-financial firms and monetary highlights. Annual share price data are extracted from the Pakistani stock exchange (PSX) website (www.psx.com.pk). This study does not include financial firms because of their special nature, their capital structure and different accounting styles and methods (Saggar and Singh, 2017; Said Mokhtar and Mellett, 2013).

3.2 Econometric equations

To analyze the research objectives, the paper specifies different econometric models shown below:

$$ROA, Tobin\ Q, VOL_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 DUL_{it} + \beta_3 BIND_{it} + \beta_4 FDIR_{it} + \beta_5 BM_{it}$$

$$+ \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 GRW_{it} + \varepsilon_{it} \tag{1}$$

$$ROA_{it}, Tobin's\text{-}q_{it}, VOL_{it} = \beta_0 + \beta_1 AUDM_{it} + \beta_2 AI_{it} + \beta_3 AM_{it} + \beta_4 AQ_{it} + \beta_5 SIZE_{it}$$

$$+ \beta_6 LEV_{it} + \beta_7 GRW_{it} + \varepsilon_{it} \tag{2}$$

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$$ROA_{it}, \text{Tobin's-}q_{it}, VOL_{it} = \beta_0 + \beta_1 LO_{it} + \beta_2 FMO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 GRW_{it} + \varepsilon_{it} \tag{3}$$

$$ROA_{it}, \text{Tobin's-}q_{it}, VOL_{it} = \beta_0 + \beta_1 DEM_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 GRW_{it} + \varepsilon_{it} \tag{4}$$

$$\begin{aligned} ROA_{it}, \text{Tobin's-}q_{it}, VOL_{it} = {} & \beta_0 + \beta_1 DEM_{it} + \beta_2 BS_{it} + \beta_3 BIND_{it} + \beta_4 DUL_{it} + \beta_5 FDIR_{it} \\ & + \beta_6 BS*DEM_{it} + \beta_7 BIND*DEM_{it} + \beta_8 DUL*DEM_{it} \\ & + \beta_9 FDIR*DEM_{it} + \beta_{10} SIZE_{it} + \beta_{11} LEV_{it} + \beta_{12} GRW_{it} + \varepsilon_{it} \end{aligned} \tag{5}$$

$$\begin{aligned} ROA_{it}, \text{Tobin's-}q_{it}, VOL_{it} = {} & \beta_0 + \beta_1 DEM_{it} + \beta_2 AUDM_{it} + \beta_3 AM_{it} + \beta_4 AQ_{it} \\ & + \beta_5 AUDM*DEM_{it} + \beta_6 AM*DEM_{it} + \beta_7 AQ*DEM_{it} \\ & + \beta_8 SIZE_{it} + \beta_9 LEV_{it} + \beta_{10} GRW_{it} + \varepsilon_{it} \end{aligned} \tag{6}$$

$$\begin{aligned} ROA_{it}, \text{Tobin's-}q_{it}, VOL_{it} = {} & \beta_0 + \beta_1 DEM_{it} + \beta_2 LO_{it} + \beta_3 FMO_{it} + \beta_4 LO*DEM_{it} \\ & + \beta_5 FMO*DEM_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 GRW_{it} + \varepsilon_{it} \end{aligned} \tag{7}$$

whereas:

ROA_{it} = Return on assets of firm i for time t;

$\text{Tobin's-}q_{it}$ = Market measure of the firm i for time t;

VOL_{it} = Volatility of firm I for time t;

B_0 = Intercept;

BS_{it} = Total directors or number of board members of firm i for time t;

DUL_{it} = dummy variable is taken as i if CEO and Chairman is the same person in the firm I for time t otherwise 0;

$BIND_{it}$ = The ratio of Independent directors in a board of company i for time t;

$FDIR_{it}$ = Female director of the company i for time t;

BM_{it} = Board meetings of firm i for time t;

$SIZE_{it}$ = Size of the company as a control variable for firm i for time t;

LEV_{it} = Leverage of firm i for time t;

GW_{it} = Growth of firm i for time t;

ε_{it} = Residual (error term);

$AUDM_{it}$ = Number of members in audit committee of the company i for time t;

AI_{it} = Independent audit members of the firm I for time t;

AM_{it} = Audit meeting held of the firm I for time t;

AQ_{it} = Audit quality of company I for time span t;

LO_{it} = largest shareholders in a firm i for time t;

FMO_{it} = family ownership structure of firm i for time t;

DEM_{it} = Discretionary earning management of firm i for time;

$BS*DEM_{it}$ = combine effect of the total number of directors in a board and discretionary earning management on firm value and firm risk of firm i for time t;

BIND * Dem$_{it}$ = combine effect of board independence and discretionary earning management on firm value and firm risk of firm i for time t;

DUL * DEM$_{it}$ = combine effect of CEO duality and discretionary earning management on firm value and firm risk of firm i for time t;

FDIR * DEM$_{it}$ = moderate effect of discretionary earning management between female directors in a board and firm value and risk of firm i for time t;

AUDM * DEM$_{it}$ = moderate effect of discretionary earning management between audit member committee and firm value and risk of firm i for time t;

AM * DEM$_{it}$ = moderate effect of discretionary earning management between audit meeting schedule and firm value and risk of firm i for time t;

AQ * DEM$_{it}$ = combine effect of audit quality and discretionary earning management on firm value and firm risk of firm i for time t;

LO * DEM$_{it}$ = moderate effect of discretionary earning management between largest shareholders and firm value & risk of firm i for time t; and

FMO * DEM$_{it}$ = combine effect of family ownership and discretionary earning management on firm value and firm risk of firm i for time t.

4. Empirical results and discussion

4.1 Descriptive analysis

Table I lists the descriptive statistics such as mean and median with minimum and maximum values. There are three control variables sales (growth), leverage and firm size. ROA is the return on assets and the proxy of firm performance that is an important element of accounting measure. Tobin's-Q is the proxy for firm value, whereas Vol is the cash flow volatility. ROA, Tobin's-Q and VOL are the dependent variables while sales, leverage and size are three control variables.

Table I	Descriptive statistics				
Variables	Mean	Median	Max	Min	SD
GRW	0.118	0.113	0.337	−0.127	0.132
LEV	0.168	0.116	0.983	0	0.183
SIZE	23.704	23.744	29.467	19.595	1.435
LO	37.793	33.162	127.951	0.37	23.907
FMO	2.059	0.001	50.572	0	7.213
BS	9.151	9	19	7	2.314
B-IND	1.815	1	13	0	2.165
F-DIR	0.543	0	3	0	0.836
DUL	0.174	0	1	0	0.379
BM	5.684	5	17	4	2.441
AUDM	3.949	4	12	3	1.384
AI	1.25	1	5	1	0.812
AM	4.331	4	11	1	1.35
AQ	0.771	1	1	0	0.421
ROA	0.082	0.074	0.22	−0.066	0.078
Tobin's-q	1.341	0.913	4.935	0.212	1.108
VOL	0.075	0.056	0.199	0.004	0.06

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The mean average of growth is 0.118 with a median figure of 0.113. The variation in growth is 0.132 with a minimum value of −0.127 and maximum value of 0.337. The mean value of growth falls between the minimum and maximum range. The mean of leverage is 0.168 and median value of 0.116 with a minimum of 0 and maximum of 0.983, and the volatility is 0.183. Firm size is the third variable having a mean value of 23.704 and median of 23.744. The highest value is 29.467, the lowest value is 19.595 and the standard deviation is 1.435. The results are consistent with Kolsi and Grassa (2017). The average value of shares owned by the largest shareholder is 37.793, and the most considerable value is 127.952. Note that the lowest value is 0.37. The variation from the middle value of this variable is 23.907, which shows the higher dispersion from the central point of average; its median value is 33.162. Another variable of ownership structure is family ownership that presents the positioning of several shares owned by a family in total ownership contribution. The average mean (median) measure is 2.059 (0.001) with the standard deviation of 7.213 ranging from 0.0 to 50.572.

Several total directors on an average are seen as 9.151 with the measure of dispersion (2.314) from the smallest value of panel 7 to the highest value 19. The mean value of board size (9.151) falls between the minimum and maximum range. Independent directors who are the board independence characteristic has an average value of 1.185 with the lowest panel value as 0 and most significant value as 13. The data of this study show absent of outliers in sampled data. The standard deviation is showing the spread around a mean value of 2.165. The value of board independence does not exceed 1.8 to 2 every year – similarly, gender diversity, which refers to female director proportionate in a board serving. The average value of independent directors in the firms is 2, whereas the maximum number of independent directors is 13. The standard deviation shows that the volatility variable is 0.836. Board duality is considered as CEO duality ratio in a board having an average of 0.174 that lies between the minimum range (0) and maximum value (1) along with the dispersion of measure as 0.379. The average number of the meetings held by the board is showing the figure of 5.684, and the middle value is 2.441; however, the minimum value is 4 and the maximum value is 17.

On average 4 members are serving in the audit committee with the standard deviation of 1.384 and the minimum and maximum values 3 and 12, respectively. Independent audit is resolute as the ratio of audit committee independence and the value perceived on an average of 1.25; moreover, the standard deviation is 0.812 along with largest to the smallest value of 5 and 1, respectively. Several audit meetings were detected as the average of 4.331 with its spread value across the middle value of 1.35; the range starts from lowest to the highest value of 1 and 11, respectively. Dummy audit is the variable reflecting the proportion of audit quality, and the average mean is constituted as 0.771: its median is 1, the minimum value is 0, the maximum value is 1, and standard deviation of 0.421.

The average measure of ROA is 0.082 with the minimum and maximum value ranging from 0.066 to 0.22 and a standard deviation of 0.078. The results of this particular variable are more consistent with the values presented in the previous study (Buallay *et al.*, 2017; Naseem *et al.*, 2017). Market measure for monitoring the firm performance is Tobin's Q, and it has a mean (median) measure of 1.341 (0.913); the standard deviation is 1.108 with the minimum and maximum value of 0.212 and 4.935, respectively This descriptive statistics results are consistent with previous studies (Susilawati and Rakhman, 2017). The average mean of firm risk is showing the value of 0.075, the median is 0.056, the standard deviation is 0.06, the minimum value is 0.004 and the maximum value is 0.199. The mean value lies between the minimum and maximum values.

4.2 Correlation analysis

The purpose of analyzing correlation is to crisscross the association of independent variables with each other and to pattern the multicollinearity for most of the time.

Multicollinearity term generally delivers the concept that describes the relationship of independent variable with all other independent variables to verify the link of one predictor with other. Multicollinearity issue arises when there is a high correlation among one or more than one independent variables. While describing multicollinearity, this would be perfectly correlated when two explanatory variable's association lies between $+1$ and -1. Multicollinearity disrupts statistical data because the results become unreliable. Previous studies (Nazir and Afza, 2018) have interpreted correlation coefficients of 0.9 and 0.70 as an indication of the presence of multicollinearity issue. Table II shows that there is no multicollinearity issue because all correlation coefficient values of predictor variables are <0.70.

4.3 Regression analysis

4.3.1 Impact of corporate governance attributes on firm value and firm risk. This section describes the importance of CG evaluating the firm performance and risk associated with it. The researcher has used three attributes of a CG mechanism (Board, Audit and Ownership structure) to analyze the moderating role of earnings management on corporate governance (CG)-value and CG-Risk relationship in the emerging economy of Pakistan. Table III shows the results of models 1 to 4.

4.3.1.1 Board structure, firm performance and firm risk (model – 1). *Board size* is an important variable of CG mechanism that shows a significant negative effect on ROA. The reason behind this negative result is that a large board size cannot communicate with managers on time. Delay in information could damage the firm reputation and leads to a decrease in the firm value. In a large board size, agency issues arises and firm risk increase for producing significant positive results (Lipton and Lorsch, 1992). Previous practitioners postulated the point that small board size leads toward better firm performance or it leads toward board efficiency because it enhances the decision-making ability by communicating with all board members (Arora and Sharma, 2016; Outa *et al.*, 2017).

Board size is insignificantly and negatively related to the market measure of firm performance Tobin's Q and firm risk. The reason is that large board size increases the risk of collaborating firm's regulatory functions with all members on the board. The author found some controversial opinions relatable to this statement justifying the idea that a larger board size may attract greater number of dominant groups, which they can facilitate to fulfil their interests agreeably. It can also amalgamate different types of professional managers by seeking their abilities and potential for exercising experiences. They all support the narration: firms having large board size positively enhance the firm market performance (Ciftci *et al.*, 2019). CEO duality has a significant and negative effect on firm performance (ROA and Tobin's Q).

Moreover, the study shows a significant positive effect of CEO duality on firm risk (VOL), indicating that CEO duality increases the firm risk. The results of this study are consistent with the agency theory issues, which argues the fact that when CEO and chairman are the same people, then they make firm's decision according to their own will and wish without consulting with another person, leading to poor firm performance. This present study's findings are consistent with past empirical findings in the literature (Brown and Caylor, 2006; Nazir *et al.*, 2018).

Independence of the BODs has a significant positive impact on firm value, ROA and firm risk. The reason is that as more board members are independent, there is fewer manipulations and bias effect and ultimately firm performance is positively enhanced (Hassan *et al.*, 2017). The independence of the board has a significantly negative effect on the market measure of firm performance, Tobin's Q. These results suggest there are only non-executive members who are affiliated with the BODs who wants to get their personal goals along with the firm's objectives and ignore the real external board independence. The

Table II Correlation analysis

Variables	SALES	LEV	SIZE	LO	FMO	BS	B-IND	F-DIR	DUL	BM	AUM	AI	AM	AQ	ROA	Tobin's-q	VOL
SALES	1																
LEV	−0.037	1															
SIZE	0.421***	−0.181***	1														
LO	0.11***	−0.215***	0.203***	1													
FMO	−0.063*	0.216***	0.028	−0.266***	1												
BS	0.226***	−0.079**	0.417***	0.013	0.075**	1											
B-IND	0.145***	−0.032	0.289***	−0.025	0.156***	0.503***	1										
F-DIR	−0.165***	0.129***	−0.301***	−0.114***	−0.029	−0.068*	−0.165***	1									
DUL	0.046	−0.079*	0.105***	0.098***	0.059	−0.173***	−0.036	0.042	1								
BM	0.629***	−0.052	0.469***	−0.008	−0.003	0.456***	0.152***	−0.094***	−0.055	1							
AUDM	0.139***	−0.131***	0.366***	−0.044	−0.031	0.656***	0.293***	−0.083***	−0.163***	0.449***	1						
AI	0.145***	−0.013	0.341***	−0.036	−0.083***	0.442***	0.445***	−0.07*	−0.141***	0.351***	0.588***	1					
AM	0.045	0.076**	0.231***	−0.037	0.027	0.322***	0.205***	−0.167***	−0.26***	0.22***	0.278***	0.088**	1				
AQ	0.16***	−0.212***	0.349***	0.214***	−0.116***	0.214***	0.117***	−0.169***	−0.166***	0.162***	0.099***	0.168***	0.16***	1			
ROA	−0.082**	−0.386***	−0.1***	0.134***	−0.116***	−0.156***	−0.068*	0.085**	−0.009	−0.164***	−0.135***	−0.154***	−0.179***	0.133***	1		
Tobin's-q	−0.068*	−0.111***	−0.143***	0.145***	−0.099***	−0.157***	−0.159***	0.034	−0.069*	−0.176***	−0.138***	−0.179***	−0.121***	0.147***	0.602***	1	
VOL	0.087**	−0.002	−0.056	0.133***	−0.033	−0.018	0.111***	−0.075**	0.01	−0.069*	−0.054	−0.056	−0.037	0.027	0.09**	0.063*	1

Note: *, **, ***shows significance at the 00.1, 0.05 and 0.01 level

Table III Linear regression analysis (model 1-4)

Variables	Model-1 ROA	Model-1 Tobin's q	Model-1 VOL	Model-2 ROA	Model-2 Tobin's q	Model-2 VOL	Model-3 ROA	Model-3 Tobin's q	Model-3 VOL	Model-4 ROA	Model-4 Tobin's q	Model-4 VOL
BS	-0.006*** (-3.59)	-0.035 (-1.35)	-0.001 (-0.54)									
DUL	-0.013* (-1.77)	-0.306** (-2.54)	0.004*** (2.73)									
BIND	0.002 (1.04)	-0.057** (-2.35)	0.001 (0.14)									
FDIR	0.011*** (3.01)	0.019 (0.33)	-0.008** (-2.45)									
BM	-0.003** (-2.32)	-0.059*** (-2.71)	-0.001 (-0.81)									
AUDM				-0.004 (-1.35)	0.005 (0.12)	0.001 (-0.16)						
AI				-0.008* (-1.9)	-0.214*** (-3.09)	-0.004 (-0.93)						
AM				-0.006*** (-2.86)	-0.081** (-2.34)	-0.001 (-0.61)						
AQ				0.025*** (3.46)	0.603*** (5.29)	0.009 (1.4)						
LO							0.001* (1.94)	(3.53)				
FMO							0.003 (-0.06)	-0.006 (-0.86)	0.002 (-0.31)			
DEM										0.215*** (8.96)	1.66*** (4.17)	-0.008 (-0.35)
SIZE	-0.002 (-0.77)	-0.032 (-0.81)	-0.004* (-1.83)	-0.008*** (-3.84)	-0.137*** (-3.83)	-0.002 (-1.01)	-0.011*** (-5.23)	-0.159*** (-4.95)	-0.003* (-1.93)	-0.008*** (-4.05)	-0.123*** (-3.87)	-0.002 (-1.34)
LEV	-0.178** (-11.48)	-0.883*** (-3.58)	-0.001 (-0.07)	-0.159*** (-9.95)	-0.552** (-2.2)	0.001 (0.06)	-0.168*** (-10.3)	-0.685*** (-2.7)	0.005	-0.154*** (-10.29)	-0.729*** (-2.92)	-0.006 (0.12)
GRW	0.097*** (4.65)	-0.094 (-0.28)	0.001 (0.05)	0.106*** (5.06)	0.064 (0.2)	0.001 (0.06)	0.101*** (4.73)	-0.04 (-0.12)	-0.001 (0.36)	0.082*** (4.05)	-0.163 (-0.48)	0.002 (-0.46)
_cons	0.212*** (3.86)	3.099*** (3.55)	0.179*** (3.71)	0.318*** (6.32)	4.864*** (6.14)	0.127*** (2.83)	0.344*** (7.08)	5.031*** (6.59)	0.14*** (3.35)	0.283*** (6.15)	4.443*** (5.8)	0.131*** (3.08)
prob > f	0.000	0.000	0.015	0.000	0.000	0.601	0.000	0.000	0.009	0.000	0.000	0.759
R2	0.244	0.084	0.031	0.246	0.107	0.009	0.209	0.067	0.025	0.292	0.069	0.003

Note: *, **, *** shows significance at 10 per cent, 5 per cent and 1 per cent level

female director affects firm performance and firm risk variables. Female directors are significantly positively related to ROA and significantly negatively related to firm risk (VOL). However, Female director has insignificant positive effects on Tobin's Q. The reason is that there are very few female directors in the firms operating in the emerging economies like Pakistan. The female director has a significant positive impact on VOL. Board meetings are significantly and negatively related to ROA and Tobin's Q. Conducting more meetings increases the director's fee, travelling expense along with their refreshments. The CEO must outline the meeting's agenda rather than waste time on inviting BODs to monitor the firm's operations (Brick and Chidambaran, 2010). Our results are consistent with some past studies (Rodriguez-Fernandez *et al.*, 2014). Concerning the control variables discussed above, firm size is significantly and positively related to ROA, insignificantly and negatively related to Tobin's Q and significantly and positively related to VOL. Leverage and growth have a significant positive relationship with ROA.

4.3.1.2 Audit, firm performance and firm risk (model – 2). Second pertinent mechanism of CG is creating a strong audit structure for making internal system free from erroneous acts. Audit committee members are the proxy of Audit size, which has insignificant negative effects on ROA and insignificant positive effects on Tobin's Q and firm risk (VOL). Previously, studies have demonstrated that a large size of audit committee contributes much to enhance the market performance (Tobin's Q) only and involve less in internal inspection affairs of the company to increase the firm ROA in the short run. Audit size is positively related to Tobin's Q because in capital markets investors prefer to invest in higher Q value companies (Choi and Wong, 2007; DeFond and Francis, 2005).

According to the findings of this study, independence of the audit committee is significantly and negatively related to ROA and Tobin's Q; however, it is insignificantly related to volatility. Absence of experts auditors in independent audit committee increases the chance of risk in the firms, which causes a negative influence on ROA and Tobin's Q measure. There is a lack of skilled and experienced auditors in an independent audit committee to monitor the internal financial affairs of the firm. Several researchers reported opposite results in which independent audit committee is significantly and positively related to firm performance (Ismail *et al.*, 2010). When the audit committee has real independent/non-executive (outside) members, they performed much better. They have no greed to go against the company's objective; therefore, a firm's performance (using accounting and market measure) is enhanced and investors are motivated to a huge investment (Ismail *et al.*, 2010).

Audit Committee Meetings (AC) is significantly and negatively related to firm performance measures, ROA and Tobin's Q. Few numbers of audit committee meetings show that AC members are unlikely to analyze the firm operations smoothly, which had a negative influence on the firm valuation. Studies conducted in the past have given opposing views showing a positive association of audit meetings with firm performance (Hamdan *et al.*, 2013; Kyereboah-Coleman, 2008). In previous studies, analysts reported that the more the number of meetings of the audit committee, the greater the firm performance. As an audit committee meeting (external members) knows about agency issues, they try to reduce the problems by conducting more meetings. In an earlier study, it is argued that AC should meet at least once quarterly and discuss the quality of financial reporting with external auditors. This all positively increased the firm value and reduced the risky effect of financial reporting.

Audit quality is the most important function of external CG. Audit quality is statistically significant and positively related to firm performance, but it has insignificantly positive effects on firm volatility. These results support the fact that a study conducted in an emerging country such as Pakistan explored the positive connection of audit quality on firm value. Agency problems are the channel source of conducting audit practices via externals to reduce the principal-agent conflicts and convey important information to investors in a

timely and accurate manner. The audit quality result indicates that one member from Big 5 auditors working in Pakistan may put a strong impression on audit quality; thus, firm performance increased upward. Moreover, it strongly indicates that external auditors not only reduce the malpractices and fraudulent acts in accounting reports but gives green signals to investors for investing in those companies that are producing strong positive connection between audit quality and firm performance. These results are consistent with the studies that reported same positive results (Aswadi *et al.*, 2011; Fooladi and Shukor, 2012; Gray *et al.*, 2011; Lawrence *et al.*, 2011; Sawan and Alsaqqa, 2013). Moreover, leverage and firm size are significantly and negatively related to firm performance. Growth is positively related to firm valuation and risk. Every company has its debt structure and size, due to the difference in their structure of debt and different firm size results are showing an inverse relationship with firm performance. The leverage and Size have inverse relationship with firm performance. The higher level of debt and low utilization of assets may lower the performance.

4.3.1.3 Ownership structure, firm performance and firm risk (model – 3). In Pakistan, most of the businesses are family dominant. In family-owned business in Pakistan, all internal affairs are handled by family members. Moreover, all decisions regarding business are taken by family members. This study reports a significantly positive influence of family ownership structure on firm performance (ROA) but significantly negative effects on Tobin's Q. This indicates that businesses that are family-owned in Pakistan enhance the performance of firm only for the short time period but are unable to generate significant results for the firm in the long run to attract the market analysts in capital markets.

Conversely, the family ownership structure is insignificantly related to firm risk (VOL). Due to this, family owned firms protect their ownership in the firms and do not accept interference by any external participants. Resultantly, the performance of these firms is lower than firms with dispersed ownership. Previously, studies reported mixed effects of family ownership on firm performance (Jabeen *et al.*, 2012; Yasser, 2011). Concerning the control variables, firm size and leverage are significantly and negatively related to ROA, while growth is significantly and positively related to firm performance (ROA) but is negatively related to Tobin's Q.

The current study determines a significant positive effect of large ownership structure on firm performance indicators (ROA and Tobin's Q) and firm risk (VOL). The reason for this positive relationship is that the largest shareholders are more concerned with the firm performance and profitability, and they have a strict check and balance on the operations of the firm. This strong monitoring system of largest shareholders increases the firm's performance. Moreover, as a control variable, firm size and leverage have negative effects on firm performance (ROA) and Tobin's Q. While growth has a significant positive effect on both performance measures (ROA and Tobin's Q), the negative effect of leverage on firm performance indicates high critical leverage or debt structure holdings, which require firms to pay a large amount of interest on the debt and remaining balance is insufficient to distribute to the largest shareholders; therefore, investors avoid investing in these type of firms. These results are consistent with the results of previous studies (Abbas *et al.*, 2013; Claessens *et al.*, 2000; Sarkar and Sarkar, 2000). F-statistics is statistically significant in both the ROA and Tobin's Q models, indicating that the explanatory variables jointly explain both ROA and Tobin's Q.

4.3.2 Earning management, firm performance and firm risk (model – 4). Earning management is significantly and positive related to firm performance (ROA and Tobin's Q) but it has an insignificant negative effect on firm volatility. Managers are performing discretionary earning management practices in Pakistan to increase reported earnings. By engaging in earnings management, investors can get a handsome amount in the form of a dividend from managed earnings, which shows the beneficial practices of managing earning to enhance the firm valuation. Most of the time, managers do earn management to

enhance market confidence. If managers realize that earning are going to fall short according to their prediction, the stock price of the firm may decrease. Therefore, they managed their reported earnings to prove their expertise. Because market participants always think, only an expert manager can manage the firm's earnings to improve the firm value and performance by forecasting the firm's position (Arya *et al.*, 2003). This method reduces the fear of rising risk or manipulation to make the accounting figures look good. In early studies, the results have revealed that if earning management is positively related to firm performance measure (accounting and market), then it is representing the beneficial discretionary earning management. Otherwise, it shows that earning management is performed for the sake of manager's benefits. Several studies (Chen *et al.*, 2010; Gunny, 2010; Mizik and Jacobson, 2007; Tabassum *et al.*, 2013) confirmed the negative impact of discretionary earning management on firm performance, which is significantly negatively influenced by firm size and leverage element. Growth is significantly and positively related to ROA but it has an insignificant effect on Tobin's Q. Moreover, F-statistics is statistically significant in both the ROA and Tobin's Q models, indicating that explanatory variables jointly explain ROA and Tobin's Q.

4.3.3 Impact of corporate governance attributes on firm value and volatility: the moderating role of earning management. In this section, we report the influence of corporate governance on firm performance and firm risk-taking discretionary earning management (DEM) as a moderator. The results of this section are presented in Table IV (model 5 to model 7).

4.3.3.1 Board of directors, discretionary earning management, firm performance and firm risk (model – 5). The combined effect of large board size and discretionary earning management indicates a strong significantly positive relationship with ROA and Tobin's Q. Researchers that examine the direct relationship between board size, DEM and firm value and risk report a significant negative relationship. However, in moderation regression model, we use all attributes of the board in CG as the moderating variable.

Firstly, board size is negatively related to firm performance in the magnitude of all the variables, but the board*Dem is significant and positive. However, the mutual effect of board size and DEM has an insignificant effect on firm volatility. The reason behind this mixed result is that large firms have strict rules and regulations. Directors in large firms are bound to monitor the firm's operations very carefully to meet the standards established by regulatory authorities. A total number of directors in the board is responsible for monitoring the managerial work to improve the firm value and to reduce the risk of fluctuating cash flows of the firm.

Board independence has significant negative impact on ROA while this relationship is insignificant for Tobin's Q. Intention overdue to this notion is presenting the concept as the absence of board independence in board building structure misleads the operational functionality. In a large firm, female director's presence gives other members some board independence feelings and provides external shareholders a confidence to positively think for the firm because the presence of female director in board eliminates the chance of fraudulent practices. Female director's supervision creates fear in management to involve in deceitful and biased activities, which positively ultimately increases the firm performance. The present study reveals a significantly positive association of the combined variable female directors and DEM on ROA and Tobin's Q.

The current study reports a strong significant and positive effect of duality on firm value using DEM as a moderating variable. Conversely, duality has an insignificant effect on Tobin's Q. The reason for this mixed result is that the CEO and chairman of firms are two different personalities who are having strong check and balance on the management actions. Both persons are sharing their workload to monitor managerial behavior. Market drivers are taking this element of CEO duality as positive because they think that one person cannot accurately perform two functions at a time. Moreover, these positive results

Table IV Moderation regression analysis (model 5-7)

Variables	Model – 5 ROA	Tobin's q	VOL	Model – 6 ROA	Tobin's q	VOL	Model – 7 ROA	Tobin's q	VOL
DEM	0.221*	3.713	−0.072						
	1.61	1.59	−0.55						
BS	−0.005***	−0.028	0.001						
	−3.34	−1.07	0.21						
BIND	0.003*	−0.051**	0.002						
	1.74	−2.05	1.59						
DUL	−0.013*	−0.304**	0.003						
	−1.82	−2.55	0.41						
FDIR	0.006*	−0.032	−0.009**						
	1.66	−0.56	−2.88						
BM	−0.003**	−0.053**	−0.001						
	−2.12	−2.45	−0.87						
BS*DEM	0.051***	0.609	0.02						
	3.04	−1.17	1.24						
BIND*DEM	−0.021**	−0.202**	−0.036						
	−2.09	2.14	3.77						
FDIR*DEM	0.093***	1.015**	0.004						
	3.14	2.01	0.16						
DUL*DEM	0.224***	1.37	0.049						
	2.66	0.95	0.62						
DEM				0.118	2.061	0.129			
				0.87	0.92	1.02			
AUDM				−0.004*	−0.056	−0.003*			
				−1.9	−1.56	−1.65			
AM				−0.005**	−0.058*	−0.002			
				−2.41	−1.66	−0.78			
AQ				0.019***	0.533***	0.007			
				2.82	4.68	1.13			
AUDM*DEM				0.018	0.069	−0.084***			
				0.8	0.19	−4.03			
AM*DEM				0.008	−0.427	0.029			
				0.29	−0.91	1.1			
AQ*DEM				−0.029	1.082	0.092*			
				−0.5	1.12	1.71			
DEM							0.26***	1.038	0.174***
							4.46	1.08	3.3
FMO							0.003	−0.006	0.002
							−0.34	−1	−0.38
LO							0.001***	0.008***	0.004***
							2.69	3.89	3.47
LO*Dem							−0.001	0.015	−0.004***
							−0.78	0.87	−3.7
FMO*DEM							0.005	0.026	0.001
							0.55	0.17	0.09
SIZE	−0.001	−0.025	−0.004*	−0.007***	−0.139***	−0.002	−0.009***	−0.141***	−0.004**
	−0.33	−0.63	−1.82	−3.9	−3.9	−0.93	−4.46	−4.42	−2.03
LEV	−0.158***	−0.719***	0.007	−0.148***	−0.596**	0.001	−0.144***	−0.539**	0.013
	−10.63	−2.85	0.48	−9.66	−2.36	0.06	−9.14	−2.8	0.9
GRW	0.071***	−0.324	−0.001	0.086***	−0.085	0.002	0.078***	−0.2	−0.006
	3.64	−0.97	−0.04	4.27	−0.26	0.13	3.82	−0.6	−0.34
_cons	0.176***	2.851***	0.169***	0.288***	4.855***	0.13***	0.292***	4.587***	0.143***
	3.47	3.3	3.52	6.03	6.16	2.96	6.34	6.04	3.42
prob > f	0.000	0.000	0.001	0.000	0.000	0.013	0.000	0.000	0.000
R2	0.363	0.121	0.058	0.318	0.114	0.037	0.303	0.099	0.048

Note: *, **, *** shows significance at 10 per cent, 5 per cent and 1 per cent level

are optimistically perceived by the market analysts for consideration. F-statistics is statistically significant in both the ROA and Tobin's Q models, indicating that the explanatory variables jointly explain ROA, Tobin's Q and firm risk.

4.3.3.2 Audit, DEM, firm performance and firm risk (model – 6). Discretionary earning management has an insignificant positive moderating effect on the relationship between audit size and ROA. This model is positively perceived by market regulators through Tobin's Q. External investors give high rank to firms which produce higher Tobin's Q value. Audit committee size is significantly and negatively associated with firm volatility factor having DEM as moderator. This means a large number of audit committee members have efficient control on the firm operation to eliminate the risk in the company, thus reducing fluctuation in Tobin's Q.

Audit meeting is the second character of audit structure, which has an insignificant positive effect on ROA moderating the role of discretionary earning management, whereas DEM is insignificantly and negatively moderating the relationship between audit meetings and Tobin's Q. More meetings of audit committee increase the firm accounting performance ROA for the short term, but this effect is negatively perceived by the capital market contestants analyzing Tobin's Q value. Audit quality is reported to have an insignificant negative association with firm performance while mitigating the role of discretionary earning management. External auditor may enhance the reputation of a firm in capital market. Only two proxies of audit (audit size and audit quality) have moderating effects on firm volatility. All other attributes of audit show insignificant results for the moderating variable in both the firm performance measures and firm risk. Concerning control variables, DEM is insignificantly and negatively influenced by sales and leverage. The overall audit structure is significantly positively increased the firm internal progress and negatively decreasing the market performance Tobin's Q by controlling some variables to check its impact on accounting and market values.

4.3.3.3 Ownership structure, discretionary earning management, firm performance and firm risk (model – 7). In a study of moderation regression, researchers examined the insignificant negative link of large shareholder's ownership with accounting performance ROA. This large ownership element at the other side shows an insignificant positive association with Tobin's Q, which is an affirmative indication for market operators. This particular characteristic of CG in the linear regression model is viewed as a strong significant association with all three dependent variables (ROA, TQ and VOL). The reason for this type of outcomes that change the significance level from positive in the direct link to negative in interaction link is a large number of shares held by the external shareholders in a firm. This situation is suitable for capital market drivers but does not generate positive results for internal investors. In this study, DEM is negatively mitigating the association of large ownership with ROA and firm VOL by increasing risk for the firm in generating more earnings. However, DEM has an insignificant moderating effect on the association between large ownership and market value measure Tobin's Q.

Second sub-element of ownership structure is family ownership, which has an insignificant positive relationship with ROA and Tobin's Q by inducing the DEM attribute of earning management. Moderation effect changes the outcome's direction and strength in the opposite direction. Businesses in Pakistan are mostly family-owned and run by descendants. Analyzing the interaction between ownership structure, firm performance and firm risk, we determine that largest shareholder has moderating effects only on firm risk, but it shows the insignificant moderating effect on ROA and Tobin's Q. Conversely, family ownership show insignificant results with the dependent variable (ROA, Tobin's Q and VOL). Concerning control variables, size and leverage have a significantly negative relationship with ROA and Tobin's Q but leverage has a negative relationship with VOL. Growth has a significant positive relationship with firm ROA, but has an insignificantly negative relationship with Tobin's Q.

5. Conclusion

CG issue is an ongoing debate in the literature, but it has received inadequate attention in a developing country, especially Pakistan. Unlike previous studies, this study analyzes the moderating role of earnings management on CG-value and CG-risk relationships in an emerging economy such as Pakistan. The results reveal that board size has a significant negative effect on ROA, but it has an insignificant effect on Tobin's Q and firm risk (VOL). Furthermore, the independence of the audit committee has a significant negative effect on Tobin's Q but it has an insignificant effect on Tobin's Q and firm risk. Moreover, family ownership has a significant positive effect on ROA but it has an insignificant effect on Tobin's Q. Overall, the results show that CG components such as CEO duality,

independence of the board, audit committee size and audit quality enhance the CG system, which ultimately increases firm performance. Agency problems can be resolved by implementing corporate codes, adequate supervision of the board, the better quality of the audit and regular board meetings. Effective supervision and monitoring process refrain the management to involve in acts to commit falsification of financial reports; thus, firm value positively increases.

The study has several policy implications. Firstly, the results suggest that the BODs should intensify their governance role and ensure that the executives perform their duties to maximize the shareholders' wealth of the shareholders and not engage in sharp practices that distort financial information and decrease firm value and performance. Secondly, the managers should be informed about their accountability and acknowledged that they would be audited by an expert's auditors for their responsibilities at the end of the year. Lastly, concerning regulatory bodies, regulatory authorities should ensure that there must be at least one independent member on the board. The better-governed system not only reduces agency conflicts but it also enhances firm value.

This research has some limitations that need to be discussed in this chapter. The study excludes financial sectors. Therefore, the results cannot be generalized to the firms operating in the financial sectors. Future research may focus on financial firms because managers in the financial sector are more likely to engage in earnings management practices. Another avenue for future research is to increase the sample size to cover more listed firms in developing countries. Moreover, future researchers use an alternative measure of firm performance (ROI, ROE and EVA) and explored the mediation effect of discretionary earning management on CG-VALUE & CG-RISK relationship and compare the results with our results.

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Appendix

Table AI	Operationalization of variables		
Variables	*Proxies*	*Measurements*	*Authors*
Independent variables (CG Attributes: Board, Audit and Ownership structure)			
Board size	BS	Number of directors on board,	Hassan *et al.* (2017), Kolsi and Grassa, (2017), Saggar and Singh, (2017)
Board structure (Duality)	DUL	A dichotomous variable will be used where "0" as CEO duality for separation and "1" for CEO duality, Dummy variable equals 1 when CEO doubles as board chair and 0 otherwise	(Hassan *et al.*, 2017); Nguyen and Faff, 2007); Singh *et al.*, 2017) (Arora and Sharma, (2016), Saggar and Singh, (2017) (Marchini, Mazza, and Medioli, 2018)
Board meeting	BM	Number of board meetings' held,	Hassan *et al.* (2017), Singh *et al.* (2017)
Board independence	BIND	The proportion of independent directors divided by the total number of directors in the board	Kolsi and Grassa (2017) Saggar and Singh (2017), Waweru and Prot, 2018)
Board gender diversity (female directors)	FDIR	The number of female directors divided by the total number of directors,	Waweru and Prot (2018)
Audit Size/ Members	AUDM	number of individuals serving in the audit committee	Anderson *et al.* (2012)
Audit Independence	AI	The Independent audit committee is measured in term of the percentage of independent and non-executive directors as members of the audit committee over the total number of audit committee members	Klein (2002), Xie *et al.* (2003)
Audit Meetings	AM	The number of audit meetings held annually by the committee members	Hamdan (2013)
Audit Quality	AQ	A dummy variable is used for BIG; value is presented as "1" if it is audited by the BIG 5 auditors otherwise "0."	Nazir and Afza (2018)
Family ownership	FMO	It is measured as the number of shares owned by family members divided by total outstanding shares	Nazir and Afza (2018)
Largest shareholder's ownership	LO	Percentage of the largest shareholder to the total equity	Yasser and Mamun, (2017)
Moderating variables: (Earning Management Attributes)			
Total Accruals	TAC	[Tac = total net income in a year *t* - total cash flows from operating activities in year *t*] or [TA= EAT-OCF]	Yasser and Soliman, (2018), Nazir and Afza, (2018)
Dependent variable: (Proxies of Firm value)			
Return on assets	ROA	[ROA = NP (Net Profit)/total assets] the	Nazir and Afza (2018), Shahzad *et al.*
Tobin's-q	Tobin's-q	market value of equity + book value of debt/ book value of total assets	(2015), Usman *et al.* (2020)
Dependent variable: (Firm Risk)			
Volatility in operating cash flows	VOL	the standard deviation of operating cash flows	Minton and Schrand (1998)

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