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Does board structure improve financial reporting quality? Evidence of real earnings manipulation among Pakistani firms

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Abstract

This paper examines whether board structure improves the earnings reporting quality? Using a sample of 150 non-financial listed Pakistani firms for the period 2008-2017, we perform empirical analysis by applying different econometric techniques namely pooled OLS, random effects model (RE), fixed effects model (FE) and feasible generalized least square (FGLS). The results suggest that board size and CEO duality significantly enhance the financial reporting quality by controlling the opportunistic behavior of managers and act as a strong monitoring mechanism. However, both board independence and audit committee independence do not significantly play their role in controlling the opportunistic behavior of managers. The results show that board size is negative significantly associated to earnings manipulation and board independence is significantly positive related to earnings manipulation regardless of the firm's financial status. Whereas, the impact of CEO duality varies with the financial status of the firms. Overall results support the stewardship and agency theory point of view in Pakistani firms.

Keywords: Board size, board independence, CEO duality and audit committee independence, real earnings manipulation.

Does board structure enhance financial reporting quality and reduce earnings manipulation? Previous studies with reference to the relationship between board structure and the excellence of the quality of earnings are in the framework of earnings manipulation models based on accrual earnings management (Alzoubi, 2016; Nazir &Afza, 2018; Latif & Abdullah, 2015; Yasser & Al Mamun, 2015; Alves, 2012). Using the agency theory frame work most previous studies have used accrual (discretionary and total accruals) models to compute the financial reporting quality. Though, there has been very limited discussion in the literature about the real earnings manipulation, especially in less regulated transitional economy and for distressed firms. According to Rajagoplan and Zhang (2008) and Chai-Keung Man and Wong, (2013), in developing countries the legal system is weak, the external surveillance system is underdeveloped, and the power lies in the hand of few shareholders (concentrated ownership). Due to all these characteristics the board structure became an essential feature of corporate governance behind the financial decisions and the firm performance. The agency theory asserted that strong corporate governance attributes which include board structure as an internal mechanism, act as a strong control system which helps in reducing the information asymmetry and agency cost. Kim et al. (2014) argue that in less regulated economy, the corporate governance attributes are considered to act as a strong monitoring tool that enforce management to convey transparent financial information to stakeholders. Significantly, board of directors are considered as an imperative control system which restrains managers to manipulate accounting information. Gonzalez and Meca (2014) propose that a strong board structure includes maximum number of independent directors on board and on audit committee, large board size with diversified expertise, and the segregation of the authority of the board chairman and CEO. Nowadays the influence of internal control mechanism on credibility of financial information and accounting income had gained a lot of attention among companies and regulatory bodies around the world (Rafique et al., 2017). Most of firms that involve in the financial statement manipulation have very weak board structures (Cohen et al., 2011). The high profile business failures like WorldCom, Maxwell and Enron that occurred in one of the most developed country USA and the financial crisis in East Asia during 1997 have raised serious questions about corporate governance mechanism and especially about the transparency of the financial reports (Reddy et al., 2008; Reddy et al., 2011).

Thus the necessity of sound and strong corporate control mechanism became a subject of debate in recent years (Roy, 2015).

Earnings management occurs when managers/management alters and smoothen companies' earnings using their own discretion for the purpose of enhancing the company financial outlook and deceive shareholders about company performance (Healy &Wahlen 1999). According to Kaldonski et al. (2019) managers have two choices to manipulate financial data. The one choice is to manipulate company financial data through discretionary accruals without affecting cash flows. This is stated as "accrual earnings management". The other choice is that they inflate company earnings by reducing R&D expenses, SG&A expenses and increases sales by offering discounts in prices that ultimately affect the cash flows and earnings of the firm. This is referred as "real earnings management" (REM). Due to its direct impact on firm performance and value, REM is regarded as more dangerous compared to AEM (Bedersher, 2011; Sakaki et al., 2017). Managers are shifting towards real earnings manipulation due to the fact that it cannot easily been detected by the external auditors (Shayan-Nia et al., 2017). Board structure attributes as being the significant aspect of controlling and monitoring, thus it is vital to examine its impact on real earnings manipulation. The above arguments lead to the subsequent research objectives:

RO1: To examine the relationship between board structure and REM in Pakistani firms.

RO2: To examine the relationship between board structure and REM with respect to the firm's financial status.

To accomplish the above objectives, the subsequent research questions are put forth:

RQ1: Does board structure reduces REM and enhances FRQ in Pakistani firms?

RQ2: Does the effect of board structure on FRQ is asymmetric with regard to financial status of firms in Pakistan?

The study encompasses the attribute of corporate governance by examining the influence of board composition on curtailing the real earnings manipulation uses as a proxy for measuring financial reporting quality in Pakistan. This paper significantly departs from the previous studies in number of ways. First, this paper prolongs and compliments the limited literature on board structure and financial reporting quality via real earnings manipulation in Pakistan. To our finest understanding this is a pioneer study which examines the influence and role of board structure attributes on controlling earnings manipulation measures through real earnings management. Most of the previous studies (Nazir & Afza, 2018; Latif & Abdullah, 2015; Shah et al., 2009) explore the role of board structure on earnings manipulation in the context of accrual earnings management. Second, this study explores the REM in financially constraint firms declared as distressed firms that in about the use of real activities like cutting R& D expenses, cutting selling, administrative and general expenses. Knowing these aspects is important, yet the literature is silent about the use of REM in distressed firms (Nagar & Sen, 2018). Thirdly, most of the previous studies (Nazir & Afza, 2018; Latif & Abdullah, 2015; Alzoubi, 2016) have ignored the cross sectional dependence in the model. Ignoring the cross sectional dependence could have serious consequences and the results of conventional panel estimates such as fixed effect, random effect and even GMM can result in misleading inference and even inconsistent estimators (Sarafidis & Robertson, 2009; Shahzad et al., 2017; Konadu, 2017). The best estimation technique to use in the presence of cross sectional dependence is FGLS (Konadu, 2017). This study employed an FGLS technique to counter cross sectional dependence. We use "board size, board independence, CEO duality, and audit committee independence" as the four different attributes of board structure that cover all the important aspect of internal control mechanism of corporate governance related to monitoring and control in Pakistan.

We document that board size and CEO duality act as a strong controlling mechanism, however independence of the board and the independence of the audit committee fail to control the opportunistic behavior of the managers as both the variable don't have any significant role in controlling earnings manipulation through real earnings management. The rest of the study is organized as follows; the relevant literature and development of hypotheses is discussed in section 2. The relevant methods used to test hypotheses are explain in section 3. The results are presented in section 4. Finally, Section 5 concludes and provides recommendations.

Literature Review and Hypotheses Development

Board Size and Financial reporting Quality

Board structure as per the argument of agency theory provides a significant monitoring mechanism which ultimately is very useful in reducing the agency conflict within the firm. Board size is considered as an important attribute of internal control system as it controls the management opportunistic behavior to manipulate accounting data (Kao & Chen, 2004). Agency theory suggest that larger board due to diversified experience and expertise act as a strong controlling mechanism (Dalton et al., 1998). According to Kao and Chen (2004) in comparison to smaller boards, in larger

boards the overall communication between the board members are weak which in turn lowers the controlling role of the boards. According to Xie et al. (2003) in comparison to larger board, smaller board are more active in timely decision making, however due to lack of experience and expertise they fail to control the alteration of accounting data. In contrast Peasnell et al. (2005) argue that larger board due to diversified experience and financial knowledge actively govern the management and act as s strong controlling tool.

Previous empirical studies regarding the size of the board and earnings management are inconclusive. The result of the previous studies like Peasnell et al., (2005); Xie et al., (2003); Latif and Abdullah (2015); Patrick et al., (2015) and Khalil and Ozkan (2016) document that larger board actively monitors the management and curb the earnings manipulation and boosts the transparency and reliability of the accounting data. Contrary, Gonzalez & Garcia-Meca (2014); Santiago and Brown (2009); Rahman and Ali (2006); and Kao and Chen (2004), document that larger board encourages earnings manipulation and lowers the financial reporting quality. In the REM literature limited studies are available. Kang and Kim (2012) document that larger the board size lowers the real earnings manipulation. Talbi et al. (2015) document that larger board enhances the real earnings manipulation and lowers the financial reporting quality. Based on the above arguments the hypothesis is:

H1: There is a positive (negative) relationship between board size and financial reporting quality (real earnings management).

Board Independence and Financial reporting Quality

The board is considered as independent if they have majority of the independent directors to the total number of board members (directors) (Supaweedee et al., 2013). To scrutinize the management role the independent directors are very important for the company. In corporate governance code 2012, "companies have at least one independent director, while preference is for 1/3rd of the total members of the board to be independent directors".

Board independence importance has been explained via the agency theory and the stewardship theory. According to Fama and Jensen (1983) non-executive independent directors reduces the agency conflicts and at the same time enhances the monitoring role. The other advantage of non-executive directors that they increases the overall ability of board and ensure that top management don't confiscate the wealth of the minority shareholders. Li (1994) argue that due to diversified expertise and independence of the non-executive directors, they govern the self-seeking behavior of the management to alter financial reports and protect the shareholders' interest. The empirical results between independence of board and earnings management are indecisive. According to Peasnell et al. (2000) independent directors plays an active role in restraining managers from earnings manipulation besides the fact that they are not directly involved in the company operation.

Klein (2002) examines the effect of independent directors on discretionary accruals (measure of earnings manipulation) and conclude that they significantly enhances the quality of financial reports by reducing earnings manipulation. On the other sides, Osama and Nouger (2007) conclude that independent directors don't play any active role in constraining earnings manipulation in Spanish companies. Similar results are reported by Nazir and Afza (2018) in Pakistani firms. The study confirms that larger the percentage of independent directors, higher the discretionary accruals. Supawedee et al. (2013) examine board independence and discretionary accruals in Thai firms and find that board independence increases the discretionary accruals. Meanwhile, Abdullah and Nasir (2004) and Rehman and Ali (2006) and Shah et al. (2009) fail to find any significance association among independency of board and the accrual earnings manipulation. In the context of earnings manipulation through real activities, a negative relationship been document by Kang and Kim (2012) and Talbi et al. (2015) between board independence and real earnings management. In contrast, Ge and Kim (2014) show a positive association among the independence of the board and real earnings management. Based on these discussions, the second hypothesis of the study is constructed as follow:

H2: There is positive (negative) relationship between board independence and financial reporting quality (real earnings management).

CEO Duality and Financial Reporting quality

CEO duality refers to the status where one person occupy the position of both the chairman of the board and CEO simultaneously (Yasser & Al Mamun, 2015). The CEO duality in the corporate governance has been explained through the agency theory and the stewardship theory. Agency theory advocates the significance of the separation of these two roles and emphasizes that CEO duality damages the firm value and sustainability of firm in long run (Yasser & Al Mamun, 2015). However, on the other side the supporters of stewardship theory emphasize on the importance of

dual role. According to the stewardship theory, managers are best stewards, they are "self-actualized individuals" rather than "opportunistic sags". According to Dulewicz and Herbert (2004) CEO duality improves the firms value in long run due to the reason that duality brings extra power to CEO which helps in mitigating the ambiguity concerned for the stable process and decision making. Another advantage of the CEO duality is that it reduces the additional cost which arise from the separation of two positions. The empirical results on the role of CEO duality to control the earnings manipulation are inconclusive. Saleh et al. (2005) conclude that CEO duality enhances the discretionary accrual and lowers the financial reporting quality in Malaysian firms. They further argue that dual role influence the board and manipulate earnings. According to Sarkar et al. (2008) the dominant CEO with the role of chairman of the board easily influence the management and manipulate earnings. The research further adds that duality increases the chances of earnings manipulation. Gulzar and Wang (2011) indicate that dualization increases the power concentration of the CEO which ease the attitude of earnings manipulation and reduces the transparency. Duality decreases the overall efficiency of the directors of the board due to which the chances of income manipulation increases (Daghsni et al., 2016). Latif and Abdullah (2015) report a negative association between duality and discretionary accruals in Pakistani firms. Alareeni (2017) examines the impact of duality on discretionary accruals of 20 Bahraini companies for the period 2011-2015. He fail to finds any significant impact of duality on discretionary accruals. In the context of earnings manipulation through real earnings management limited studies are available but the result are inconclusive. Ge and Kim (2014) find a positive relation among CEO duality and real earnings manipulation, whereas, Garven (2015) fails to find any relation between CEO duality and real earnings manipulation. Consistent with the above discussion, we build the hypothesis as;

H3: There is negative (positive) relationship between CEO duality and financial reporting quality (real earnings management).

Audit Committee Independence and Financial reporting quality

Besides the role of monitoring, the other important role performed by the audit committee is the transparency and the credibility of the financial information conveyed to the shareholders for the decision making (Chi-Keung Man and Wong 2013). Mangers most of the time manage financial information especially earnings for the concealment of their poor performance. Therefore, to keep transparency in the financial data, the work of the internal auditors is strictly observed by the independent audit committee. Further, the members of the committee also select reputable external auditors to enhance the firm reputation regarding the transparency of the published financial information.

As per corporate governance code of Pakistan 2012 "The chairman of the audit committee shall be an independent director, who shall not be the chairman of the board. Audit committee shall comprise of non-executive directors". On empirical grounds, Chtourou et al. (2001) study the impact of audit committee independence on discretionary accruals and conclude that firms with an independent audit committee report lower discretionary accruals and enhance the overall financial reporting quality. Murhadi (2009) finds that audit committee when under the influence of strong CEO and other senior management of the board fails to control earnings manipulation in the Indonesian firms. Lin and Yang (2006) conclude that firms in China report less accruals when the audit committee has majority of independent directors, as they have strong controlling mechanism. Similarly, Garcia-Meca and Sanchez-Ballesta (2009) identify that independent audit committee besides reducing the earnings manipulation also enhance the investors' confidence. Besides the independency Alzoubi and Selamat (2012) assert that independent members on audit committee with proficiency and knowledge of financial matters decrease the chances of manipulation and boost the earnings quality. Law (2011) states that due to the active monitoring role of independent directors of audit committee the chances of falsified earnings eliminates at the very early stages. Razali and Arshad (2014) in Malaysia finds that audit committee enhances the earnings quality and reduces the chances of reporting high discretionary accruals. Abdullah and Latif (2015) examine the role of independent audit committee in reducing discretionary accrual of 120 Pakistani firms for the period 2003-2012 and conclude that audit committee independence improves the financial reporting quality. Gasven (2015) and Inam et al. (2012) in the context of real earnings management and audit committee, document that independent audit committee is negatively associated with real earnings management. However, Kang and Kim (2014) document that the role of the independent audit committee is very limited in controlling the management behavior of reducing earnings management in Korea. Based on the above empirical results the study propose the following hypothesis:

H4: There is positive (negative) relationship between Independent audit committee and financial reporting quality (real earnings manipulation).

Research Methodology and Design

Sample and Data

The empirical examination of this study is grounded on a panel data set for the period 2008-2017. The data was collected form 2008 due to the reason that in Pakistan key changes in accounting standards took place in between 2005 and 2006 (Rehman et al., 2014). According to Ma et al. (2015) using data after changes in the accounting standards will bring uniformity in dealing of the accounting variables used in the empirical analysis. The study includes all companies registered on Pakistan Stock Exchange (PSX). Firms from financial sectors are not included in the sample due to their unique and complex characteristics form other sectors (Davidson et al., 2005). According to Tureguen (2016), the firms of financial sector have different earnings manipulation strategies that why the financial sector was excluded from the sample. The firms with missing corporate governance data are also excluded from the sample. Consequently, the ultimate sample contains of 150 firms. Data are obtained from the company annual reports available on the company websites.

Variables of Study

Independent Variables

Measuring Board Structure

Following the previous studies this study uses various board structure variables (Arora & Sharma, 2016, Manzneque et al., 2016), that includes; Board Size, board independence, CEO duality and audit committee independence. The number of total directors on board represents board size (Alves, 2012; Alareeni, 2017; Yasser et al., 2017). The Percentage of independent directors to the total number of directors on board is board independence (Wabha, 2015). CEO duality is defined as one person simultaneously occupy both position as a chairman of the board and CEO (Yasser & Al Mamun, 2015). It is measured through dummy variable '1' if the role is dual, otherwise '0'. The percentage of independent directors to the total directors on audit committee represents audit committee independence (Alareeni, 2017).

Dependent Variable

Roychowdhury Model

Roychowdhury model of real earnings management is used as a measure of financial reporting quality. Previous studies (Cohen et al., 2011; Farooqi et al., 2014; Gunny, 2010; Kim & Park, 2014; Mellado-Cid et al., 2018; Zang, 2012) measured real earnings manipulation through this model. Roychowdhury has proposed measure such as abnormal cash flow from operating activities and abnormal discretionary expenses. Ordinary Least Squares (OLS) regression model is employed to estimate the abnormal cash flow from operation and abnormal discretionary expenses. Equation (1) is employed to calculate abnormal cash flow from operations whereas, equation (2) models abnormal discretionary expenses.

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2\left(\frac{S_{i,t}}{A_{i,t-1}}\right) + \alpha_3\left(\frac{\Delta S_{i,t}}{A_{i,t-1}}\right) + \epsilon_{i,t} \qquad (1)$$

$$\frac{DISEXP_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{i,t-1}}\right) + \alpha_2\left(\frac{S_{i,t-1}}{A_{i,t-1}}\right) + \epsilon_{i,t} \qquad (2)$$

$CFO_{i,t}$ represents the cash flow from operations. $DISEXP_{i,t}$ represents the discretionary expenditure (selling & administrative expenses, advertising and R&D). $S_{i,t}$ represents the sale revenue. $\Delta S_{i,t}$ change in sales. All variables are scaled by lagged of total assets $A_{i,t-1}$.

The first model relates to the management offering discount or more favorable credit terms to accolade sale. The model predicts the normal levels of CFO and deems the regression residual as abnormal cash flow from operating activities. The smaller value indicates more earnings management. Following the previous studies we multiply ABCFO with -1 so that high value represents higher earnings manipulation and lower reporting quality (Badertcher, 2011).

The second model pertains simply reducing discretionary expenses for the purpose to inflate the reported earnings. Therefore, the second model estimates the normal level of discretionary expenses and considers the residual obtained from the regression (deviation from normal) as abnormal discretionary expenses. ABDISEXP is also multiplied with -1 so that higher value represents higher real earnings management and lower reporting quality (Kaldonski, et al., 2019). As per the previous literature the current research also uses an aggregate measure of real earnings management (REM) as a third measure of earnings manipulation through real activities (Zang, 2012; Cohen & Zarowin, 2010; Shayan-Nia et al., 2017; Mellado & Saona, 2018). To reduce the measurement bias the study adopted the aggregate measure of real earnings management by

following Gunny, 2010 and Cohen et al. 2008. Therefore, the aggregate measure is mathematically calculated as REM= ABCFO+ ABDISEXP.

Control Variables

Different firm specific control variables are used to reduce the omitted variables bias. The controlled variables included are in line with the previous studies are firm size, company growth, leverage, profitability, listing age and audit quality (Alzoubi, 2016; Yasser et al., 2017; Chen et al. 2008).

Estimation technique

Hypotheses 1, 2, 3 and 4 are tested using four (4) techniques namely pooled OLS (POLS), random effects model (RE), fixed effects model (FE) and feasible generalized least squares (FGLS).

Econometric Model

To test the hypotheses, the following regression equation is estimated;

$$ABCFO_{i,t} = \alpha_0 + \beta_1 BSIZE_{i,t} + \beta_2 BIND_{i,t} + \beta_3 DUALITY_{i,t} + \beta_4 ACI_{i,t} + \beta_5 FRMSIZE_{i,t} + \beta_6 FRMGRWTH_{i,t} + \beta_7 FRMAGE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 BIG4_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} INDUSDUM_{i,t} + \beta_{12} YEARDUM_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$ABDISEXP_{i,t} = \alpha_0 + \beta_1 BSIZE_{i,t} + \beta_2 BIND_{i,t} + \beta_3 DUALITY_{i,t} + \beta_4 ACI_{i,t} + \beta_5 FRMSIZE_{i,t} + \beta_6 FRMGRWTH_{i,t} + \beta_7 FRMAGE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 BIG4_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} INDUSDUM_{i,t} + \beta_{12} YEARDUM_{i,t} + \varepsilon_{i,t} \quad (4)$$

$$\begin{aligned} REM_{i,t} = \alpha_0 &+ \beta_1 BSIZE_{i,t} + \beta_2 BIND_{i,t} + \beta_3 DUALITY_{i,t} + \beta_4 ACI_{i,t} + \beta_5 FRMSIZE_{i,t} \\ &+ \beta_6 FRMGRWTH_{i,t} + \beta_7 FRMAGE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 BIG4_{i,t} + \beta_{10} ROA_{i,t} \\ &+ \beta_{11} INDUSDUM_{i,t} + \beta_{12} YEARDUM_{i,t} \\ &+ \varepsilon_{i,t} \end{aligned} \quad (5)$$

"BSIZE: Board Size

BIND: Board Independence.

DUALITY: Dummy variable coded as 1 if the CEO is also the chairman of the board otherwise zero (0).

ACI: Audit committee independence measure as ratio of non-executive directors on audit committee to total audit committee members.

FRMSIZE: Firm size measured as natural log of total assets.

FRMGRTH: Firm growth rate measures as growth in firm's total assets over previous year. *FRMAGE:* Firm age in years.

LEV: Leverage measured as the proportion of total debt to total assets.

BIG4: audit quality and is coded as one if audit is done by BIG4 otherwise zero (0).

ROA: Firm profitability and is measured as net income over total assets."

INDUSDUM: Industry dummy

YEARDUM: Year dummy''

We employ the pooled OLS regression, Random effect model, fixed effect model and Feasible generalized least square model. All regression include year and industry fixed effect.

Results and Discussion

Descriptive Statistics

The summary statistics of the variables included in the model are presented in Table 2. The average value of REM (real earnings management) is -18.23%, which specifies that companies in Pakistan are involved in managing earnings downwards through real-based earnings management. -8.8% and -9.39% are the average value of ABCFO and ABDISEXP respectively indicating income-decreasing earnings manipulation. This indicates that firms in Pakistan management offering discount or more favorable credit terms to accolade sale as compared to discretionary expenses. Murya (2010) argues that companies use income decreasing earnings manipulation when they pre-managed earnings are higher than the forecasted, so they defer theses earnings for the incoming periods. The average number of the board size falls into the regulatory requirement of having minimum number of members on the board is 7.

Table 1. *Descriptive Statistics*

Variable	Mean	Std. Dev.	Min	Max
ABCFO	-0.088	0.045	0-.587	0.063
ABDISEXP	-0.093	0.037	-0.525	-0.016
REM_AGG	-0.182	0.082	-1.112	0.0136
BSIZE	8.115	1.670	7	15
BIND	5.575	2.417	0	14
ACI	0.852	0.200	0	1
FRMSIZE	8.837	1.488	3.891	13.349
FRMGRTH	0.117	0.389	-0.898	11.225
FRMAGE	29.206	12.047	7	56
LEV	0.640	0.422	0	10.110
ROA	0.048	0.122	-1.280	1.100

Table 2: Correlation Matrix

	REM (agg)	BSIZE	BIND	DUALITY	ACI	FRMSIZE	FRMGRTH	FRMAGE	LEV	BIG4
REM (agg)	1									
BSIZE	-0.0484*	1								
BIND	0.0960***	0.7630***	1							
DUALITY	-0.1200***	0.1703***	0.2296***	1						
ACI	0.0886***	0.2196***	0.5226***	0.1459***	1					
FRMSIZE	-0.0365	0.3883***	0.3583***	0.0850***	0.1488***	1				
FRMGRTH	-0.3954***	0.1139***	0.0691**	0.0516*	0.0133	0.1055***	1			
FRMAGE	-0.1325***	0.0040	0.0211	-0.0842***	0.0063	0.0081	0.0621***	1		
LEV	0.11469***	0.0564**	0.0671***	-0.2073***	-0.0085	-0.0756***	-0.0607**	0.0719***	1	
BIG4	-0.1538***	0.2502***	0.2020***	0.2328***	0.0813***	0.2949***	0.0446*	-0.1185***	-0.2397*	1
ROA	-0.2848***	0.1081***	0.0526**	0.2143***	0.0044	0.1038***	0.1038***	-0.0453*	-0.4189***	0.2330***

"Note: *** Significant at 1%; **; Significant at 5%; * Significant at 10%."

The table 1 represents that the number of maximum members on the board is 15. The average number of non-executive independent directors on board is 5.5, which indicates that the number of independent directors on board is more than half members. However, the standard deviation of 2.4 shows the volatility in this variable. The table indicates that the percentage of independent directors on audit committee members is reasonably high for the sample firm, i.e. 85.27%. This indicates that most of the firms in the sample have an independent directors on audit committee.

The security and exchange commission of Pakistan (SECP) also encourages firms to have independent non-executives directors on board and on internal audit committee to oversee the firms operation in a transparent way. Though, there are rare firms which have no non-executive directors in the audit committee as the minimum value of ACI is '0' for some firms.

Table 2 reports the results of Pearson estimates of the correlations between the real earnings manipulation and board structure.

Table 3: Variance Inflation Factor

Variable	VIF	1/VIF
BSIZE	3.79	0.2636
BIND	2.98	0.3361
ACI	1.56	0.6400
LEV	1.32	0.7576
ROA	1.28	0.7828
FRMSIZE	1.27	0.7843
FRMGRTH	1.03	0.9678
FRMAGE	1.03	0.9728
Mean VIF	1.67	

The correlation between board size, CEO duality and real earnings manipulation is negative and significant, whereas, the correlation between board independence and audit committee independence with real earnings manipulation is positive and significant. The correlation estimates do not provide evidence of severe multicollinearity issue, as all the values of the correlation are below the threshold of 0.90 to constitute multicollinearity threats (Gujrati, 2003). The VIF given in Table 4 indicates no multicollinearity. The average value of VIF (1.67) remain below a value of 10, which has been recommended as the maximum level of VIF (O'Brien, 2007).

Results and Discussion

We use pooled ordinary least square (POLS), random effects model (RE), fixed effects model (FE) and feasible generalized least squares (FGLS) to estimate equation 3 to 5. Each technique has its own set of assumptions. POLS assumes that company and time specific effect are equal. The random effect model assumes that time invariant heterogeneity between firms is uncorrelated with the error term. However, in fixed effects model the intercept varies across each firm and the coefficient of the slope is constant. Fixed effect technique takes each firm multiple observation that reduces the bias results. The FGLS econometric technique employed due to the fact that fixed effects and random effects don't use all the available information of the sample and produce efficient result (Davidson et al., 1993).

To determine whether correct estimator was used we applied the Breush-Pagan Lagrange Multiplier (LM) test and Hausman specification test. The Breush-Pagan (LM) test (*P-value*=0.000) established the superiority of random effects model. To identify the more appropriate model (FE or RE) we apply Hausman test. The result of Hausman test (P-value=0.000) indicate that fixed effects model is more suitable model. We further investigated the appropriateness of FE model by testing autocorrelation, heteroscedasticity and contemporaneous correlation. For that purpose we employ Wooldridge and Wald test for autocorrelation and heteroscedasticity. For testing contemporaneous correlation/cross-sectional dependence we employ Pesaran test.

Table 4: Regression of Abnormal Cash Flow and Board Structure (Model 1)

Independent Variables	Pooled OLS (POLS)	Random Effects Model (RE)	Fixed Effects Model (FE)	Feasible Generalized Least Square FGLS
BSIZE	-0.003***	-0.003*	-0.009	-0.001***
	(0.000)	(0.001)	(0.001)	(0.000)
BIND	0.004***	0.001	0.000	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
DUALITY	-0.009***	-0.007*	-0.004*	-0.005***
	(0.002)	(0.004)	(0.002)	(0.002)
ACI	0.001	0.007	0.004	0.006
	(0.005)	(0.009)	(0.005)	(0.004)
		Control Variables		

FRMSIZE	-0.001*	0.014***	-0.013***	-0.004***
	(0.000)	(0.002)	(0.001)	(0.000)
FRMGRTH	-0.043***	-0.078***	-0.044***	-0.041***
	(0.000)	(0.002)	(0.002)	(0.001)
FRMAGE	-0.000***	-0.009***	-	-0.000***
	(0.000)	(0.000)		(0.000)
LEV	-0.002**	0.003	-0.002	-0.001
	(0.000)	(0.003)	(0.002)	(0.002)
BIG 4	-0.006	-0.015***	-0.000	-0.009***
	(0.002)	(0.007)	(0.006)	(0.002)
ROA	-0.063***	-0.096***	-0.056***	-0.066***
	(0.008)	(0.011)	(0.007)	(0.009)
Industry effect	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Constant	0.019	-0.246***	-0.194***	0.089***
	(0.013)	(0.027)	(0.019)	(0.017)
Observations	1347	1347	1347	1347
R-squared	0.47	0.48	0.43	
Breusch-Pagan (LM) Test	2479.56***			
Hausman Test	34.20***			
Wooldridge Test	12.259***			
Wald Test	54578.09***			
Pesaran Test	34.20***			

*"Note: *** Significant at 1%; **; Significant at 5%; * Significant at 10%."*

Table 3 indicates the existence of autocorrelation, heteroscedasticity and cross-sectional dependence in the models, thus supporting the use of FGLS method. The advantage of FGLS regression technique is that it provides efficient estimation when there is problem of autocorrelation with in panels and cross-sectional correlation and heteroscedasticity in the model (Shahzad et al., 2017; Konadu, 2017). According to Beck (2008), FGLS fulfil the Gauss-Markov assumptions by first estimating residual through OLS and then uses the residual that are obtained from the OLS to estimate the errors covariance matrix.

Table 4 reports the estimation of model 1 by taking dependent variable as abnormal cash flow from operation as proxy for real earnings manipulation. The result suggests that board size negatively affect the ABCFO. This indicates that in Pakistan larger board plays a very active monitoring role and controls the opportunistic behavior of the manager by controlling the manipulation of earnings through abnormal cash flows from operation and enhances the financial reporting quality. Therefore H1 is accepted that larger board increases the earnings quality by reducing the earnings manipulation. This supports the agency theory perspective that due to diversified expertise of the larger boards they act as a strong monitoring mechanism which in turn reduces earnings manipulation and also reduces the agency problem. The finding is similar to the previous studies (Alzoubi, 2016; Xie et al., 2003 & Patrick et al., 2015). Similar results are found by (Saleh et al., 2005; Kumari &Pattanayak, 2014) in Asian countries. In contradiction to the expectation the relationship between board independence and earnings manipulation measured through abnormal cash flow from operation is positive and significant. Therefore the H2 is not accepted. The positive significant result indicates that independent directors on boards of Pakistani firms fails to control the management from earnings manipulation. The independency seems just a label not an attitude. Yermack (2004) labels such directors as 'Grey Directors'. Grey directors are referred to those directors "who have some kind of family or professional relationship with the company's top management or owners". In Pakistan the ownership structure is very concentrated so it is possible that most of the independent directors on board are the relatives or friends of the owners. The other reason of the positive relationship is that board comprises of mainly major shareholders and managers, so the outside directors have very limited information about the company operation (Ferraz et al., 2011). Gonzalez and Garcia-Meca (2014) also find that board independence fails to perform a monitoring role, they argue that independent directors have very limited participation in the company operation so they fail to control the self-seeker attitude of the managers regarding income manipulation. Alareeni (2017) also find similar result in Bahrainis companies and argue that there is no transparency in the appointment process of the independent directors and most of the independent directors appointed through owners' subtle which make it difficult for them to protect the shareholders rights and monitors the company operation fully independent. Similar results are presented by Park and Shin (2004); Bradbury et al., (2006); Osama and Nouger, (2007).

Regarding the relationship between (ABCFO) and CEO duality, the results indicate significant negative relationship. The finding asserts that duality in Pakistan actually reduces earnings manipulation through ABCFO and enhances the financial reporting quality. Therefore, H3 is not accepted. This finding supports the stewardship theorist point of view that one person in dual position can improve the firms stability and monitors the managers opportunistic behavior. The

result is consistent with Daghsni (2016). Regarding the audit committee independence variable, the relationship is positive and insignificant which indicates that audit committee fails to control the earnings manipulation. Therefore the H4 is not accepted. The positive sign indicates the nonexistence of independence of audit committee in Pakistani firms. Baxter and Cotter (2009) also find that the independence of audit committee is not related to reducing earnings manipulation. Moreover, Xia et al. (2003) argue that internal audit committee can diminish earnings manipulation and improves financial reporting quality only if they have financial skill and accounting knowledge otherwise independence remains only a label. This implies that most of the independent directors present in audit committee lack the accounting and financial expertise which proves that independency is nothing more than just a label and fulfilling the legal requirement. Among the control variable, firm size, growth, firm age, Big 4, and ROA variables are negatively significant related to ABCFO. These finding provides strong evidence that growth companies, firm age and audit quality are likely to provide lower real earnings management and enhance financial reporting quality. These results also have been reported in other studies (Jaggi et al., 2009 and Gul et al., 2009). However, leverage shows a negative insignificant relationship with earnings manipulation through abnormal cash flow from operations, whereas, the result advocates that large firms by means of total assets reduces the earnings manipulation.

Table 5: Regression of Abnormal Discretionary Expenses and Board Structure (Model 2)

Independent Variables	Pooled OLS	Random Effects Model (RE)	Fixed Effects Model (FE)	Feasible Generalized Least Square FGLS
BSIZE	-0.004***	-0.001*	-0.000	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
BIND	0.003***	0.000	0.000	0.001*
	(0.000)	(0.000)	(0.000)	(0.000)
DUALITY	-0.006***	-0.003	0.003*	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
ACI	0.004	0.000	0.000	0.001
	(0.004)	(0.003)	(0.003)	(0.002)
Control Variables				
FRMSIZE	0.001***	0.007***	0.010***	0.005***
	(0.002)	(0.001)	(0.000)	(0.000)
FRMGRTH	-0.036***	-0.035***	-0.035***	-0.033***
	(0.000)	(0.0001)	(0.001)	(0.002)
FRMAGE	-0.000***	-0.000***	-	-0.000***
	(0.000)	(0.000)		(0.000)
LEV	-0.003	0.002	0.002**	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
BIG 4	-0.006***	-0.006***	-0.000	-0.008***
	(0.001)	(0.003)	(0.004)	(0.001)
ROA	-0.044***	-0.036***	-0.033***	-0.033***
	(0.012)	(0.004)	(0.006)	(0.003)
Industry effect	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Constant	-0.018	-0.129***	-0.174***	-0.108***
	(0.011)	(0.012)	(0.012)	(0.005)
Observations	1347	1349	1349	1349
R-squared	0.51	0.53	-	

*"Note: * Significant at 1%; **; Significant at 5%; * Significant at 10%".*

Table 5 reports the result for abnormal discretionary expenses (ABDISXEP) as a dependent variable. Accordingly H1 is confirmed. The result specifies that association between board size and ABDISEXP is significantly negative. This shows that larger the board size the greater the number of experienced directors who seem to have strong controlling role in mitigating abnormal discretionary expenses. Further, the association between board independence and ABDISXEP is positive and significant. The result suggests that independent directors on boards fails in controlling the opportunistic behavior of the managers in manipulating earnings through discretionary expenses. Therefore H2 is not accepted as the result suggests that independent directors on board is not an effective controlling mechanism of corporate governance.

Table 6: Regression of Real Earning Management (REM aggregate) and Board structure (Model3)

Independent Variables	Pooled OLS	Random Effects Model (RE)	Fixed Effects Model (FE)	Feasible Generalized Least Square FGLS
BSIZE	-0.007***	-0.003*	-0.001	-0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
BIND	0.008***	0.001	0.000	0.001*
	(0.001)	(0.001)	(0.001)	(0.001)

DUALITY	-0.015***	-0.007*	-0.007*	-0.009***
	(0.003)	(0.004)	(0.003)	(0.002)
ACI	0.006	0.007	0.003	0.008
	(0.007)	(0.009)	(0.009)	(0.006)
Control Variables				
FRMSIZE	-0.000	0.014***	0.023***	0.009***
	(0.000)	(0.000)	(0.003)	(0.001)
FRMGRTH	-0.079***	-0.078	-0.080***	-0.076***
	(0.009)	(0.002)	(0.002)	(0.002)
FRMAGE	-0.000***	-0.000**	-	-0.000***
	(0.000)	(0.000)		(0.000)
LEV	-0.005	0.003	0.004	-0.000
	(0.004)	(0.003)	(0.003)	(0.002)
BIG 4	-0.012***	-0.015**	-0.001***	-0.018***
	(0.002)	(0.002)	(0.010)	(0.003)
ROA	-0.108***	-0.096***	-0.089***	-0.101***
	(0.015)	(0.015)	(0.015)	(0.009)
Industry effect	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Constant	0.000	0.245***	-0.368***	-0.194***
	(0.023)	(0.027)	(0.031)	(0.013)
Observations	1347	1349	1349	1349
R-squared	0.50	0.48	0.48	

*"Note: *** Significant at 1%; **; Significant at 5%; * Significant at 10%."*

Regarding the CEO duality, the finding shows a positive significant relationship of duality with ABDISXEP. The reason might be that as powerful CEO has direct control over discretionary expenses, so they do not manipulate earnings through discretionary expenses. Therefore H3 is rejected. The result supports the argument based on agency theory perspective that advocates the importance of separation of these two roles. Similar results are found by Yasser and Al Mamun (2015) and Gulzar and Wang, (2011). Similar to the findings of ABCFO, the audit committee independence don't play any significant role in controlling earnings manipulation through discretionary expenses as the result is insignificant, and hence, H4 is rejected. Therefore, the result is neither in favor of the effective monitoring nor the opportunistic behavior of independent audit committee. Similar to abnormal cash flow model, firm growth, firm age, leverage and ROA indicate similar results. However, regarding firm size the result specifies that large firms indulge in real earnings manipulation through cutting expenditure on R& D and SG & A to improve cash flows and profitability. The result is in consistent with Zang, (2012) and Gunny, (2010). Table 7 reports the result of regression analysis for aggregate measure of real earnings management used as proxy of real earnings management. According to the empirical results, board size and CEO duality act as a strong controlling mechanism of corporate governance and enhances the financial reporting quality. However, independence of board indicates a positive significant relation with real earnings manipulation (lower financial reporting quality) whereas, audit committee independence fails on curtailing the manipulation of earnings through real earnings management.

Additional Analysis

To examine whether the impact of board structure attributes on the financial reporting quality is asymmetric with the financial health of firms. We divide the total firm year observation into financial distressed firm year observations and non-distressed firm year observations, for that purpose we use Altman Z-score (1968) accounting ratios based bankruptcy model which on the basis of its liquidity, age, profitability, solvency and efficiency categorizes a firm as distressed/non-distressed. A Z-score of lower than 1.81 is categorized as distressed, and considers as non-distressed firm if it Z-score is above 1.81. This proxy for financial distress has been extensively employed in previous literature for bankruptcy prediction (Zang, 2012; Badertscher, 2011). One of the reason of splitting the sample into distress and non-distressed firms observations is due to the fact that financial distressed firm's managers have different motives to manipulate earnings to mask the poor performance of the firm (Nagar & Sen, 2018). They manipulate earnings to fleece distress, obtain financing at easy terms, and reduces the chances of hostile takeover (Jaggi & Lee, 2002). Campa & Camacho-Minano (2014) study Spanish companies and find that financial distress firms engage in earnings manipulations techniques as compared to healthy firms.

"Z- Score=0.012X1+0.014X2+0.033X3+0.006X4+0.0999X5

X1= net working capital/total assets, X2=retained earnings/total assets, X3=EBIT/total assets

X4=Market value of equity/Book value of debt, X5=sales/total assets"

Empirical result of distressed firms are reported in Table 7. As per the results board size shows a positive relation with ABCFO and negative relation with ABDISEXP. This specifies that larger board manipulate earnings through ABCFO as compared to reducing discretionary expenses. Board independence is significantly positive related to all three measures of real earnings management, hence, resulting in the lower financial reporting quality. CEO duality has a negative and significant effect on earnings manipulation through real earnings management and plays a monitoring role in curbing the opportunistic behavior of the managers. Audit committee independence has no significant effect on earning manipulation. Firm size, Big4 and growth are significantly negatively related to the real earnings manipulation in distressed firm's indicating that large and growing firms doesn't have motivation to involve in real earnings manipulation. Leverage is significantly positive associated to real earnings management. Similar results are also reported by (Jaggi & Lee, 2002; Fung & Goodwin, 2013). The greater the firm leverage the larger the likelihood that managers will engage in earnings management to hide financial distress situation. ROA indicates a positive but insignificant relationship with the real earnings management.

Table 7: Regression of Real Earnings Manipulation and Board structure (Distressed Firms)

Independent Variables	Model (1) ABCFO FGLS	Model (2) ABDISEXP FGLS	Model (3) REM_AGG FGLS
BSIZE	0.000	-0.000	-0.000
	(0.001)	(0.000)	(0.001)
BIND	0.001*	0.001*	0.002*
	(0.000)	(0.000)	(0.001)
DUALITY	-0.004*	-0.002	-0.006*
	(0.002)	(0.003)	(0.004)
ACI	-0.009	0.005	-0.003
	(0.005)	(0.004)	(0.010)
		Control Variables	
FRMSIZE	-0.005***	-0.001*	-0.006***
	(0.000)	(0.000)	(0.001)
FRMGRTH	-0.039***	-0.034***	-0.074***
	(0.001)	(0.001)	(0.003)
FRMAGE	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
LEV	0.012***	0.007***	0.019***
	(0.003)	(0.002)	(0.005)
BIG 4	-0.002	-0.005***	-0.007*
	(0.002)	(0.001)	(0.003)
ROA	0.006	0.006***	0.113***
	(0.008)	(0.006)	(0.01)
Industry effect	Yes	Yes	Yes
Year effect	Yes	Yes	Yes
Constant	0.0179	-0.030**	-0.012
	(0.012)	(0.010)	(0.022)
Observations	531	531	531

*"Note: *** Significant at 1%; **; Significant at 5%; * Significant at 10%."*

Table 8 reports the regression result of non- distressed firms. The result of the non-distressed firms are virtually alike to the overall sample. The regression results indicate that in non-distressed firms larger board is not engaged in earnings manipulation through real earnings activities. Board independence is positive and significant related to the real earnings manipulation, the positive association raised a lot of question on the independency of directors on board. Audit committee independence and duality do not show any significant part in controlling earnings manipulation through real activities in financial healthy firms.

Table 8: Regression of Real Earnings Manipulation and Board Structure (Healthy Firms)

Independent Variables	Model (1) ABCFO (FGLS)	Model (2) ABDISEXP (FGLS)	Model (3) REM_AGG (FGLS)
BSIZE	-0.003***	-0.004***	-0.007***
	(0.001)	(0.001)	(0.002)
BIND	0.005***	0.003***	0.008***
	(0.001)	(0.000)	(0.001)
DUALITY	-0.004	-0.004	-0.008
	(0.003)	(0.003)	(0.006)
ACI	0.008	0.005	0.013
	(0.007)	(0.006)	(0.013)
		Control Variables	
FRMSIZE	-0.000	0.001*	0.001
	(0.001)	(0.000)	(0.001)
FRMGRTH	-0.062***	-0.043***	-0.105***
	(0.005)	(0.004)	(0.009)

FRMAGE	- 0.000***	-0.000***	- 0.000***
	(0.000)	(0.000)	(0.000)
LEV	-0.018***	-0.015***	0.034***
	(0.003)	(0.002)	(0.005)
BIG 4	0.006**	0.005*	0.011**
	(0.003)	(0.002)	(0.005)
ROA	-0.039***	-0.019*	-0.058**
	(0.013)	(0.010)	(0.023)
Industry effect	Yes	Yes	Yes
Year effect	Yes	Yes	Yes
Constant	-0.025	-0.049*	-0.074
	(0.035)	(0.028)	(0.063)
Observations	816	816	816

*"Note: *** Significant at 1%; **; Significant at 5%; * Significant at 10%."*

Large firms tend to involve in manipulation through cutting in R&D, and SG&A expenditure as firm size of non-distressed firms is positively significant associated to ABDISXEP. Firm growth, age, leverage and ROA is negatively related to REM. Big4 has significantly positive effect on real earnings manipulation. The positive relation between BIG4 auditors and real earnings manipulation is also supported by Cohen et al., (2008) and Shayan-Nia et al. (2017) signifying the fact that firms are shifting towards real earnings management. Hence this study asserts that non-distressed firms audited by Big4 auditors that just attained significant earnings bench mark involves more in real earnings management.

Conclusion, Recommendation and Future Direction

In Pakistan where legal system is very weak the role of board structure gets more importance to protect minority shareholders from the exploitation of majority shareholders and also enhance the value of firm. The study examines the relationship between board structure ("board size, board independence, CEO duality and audit committee independence") and real earnings management measured through Rowchadhry (2006) model. The empirical findings suggest that income manipulation (through real activities) in Pakistani firms are influenced by the board structure of these firms. Precisely the empirical results suggest that the income manipulation is lower in the firms that have larger board size and the financial reporting quality is higher in larger board as compared to smaller board. The finding suggest that larger board are superior in controlling the self-seeking behavior of the managers. The study also asserts that CEO duality also reduces the earnings manipulation through real earnings management and enhances the financial reporting quality This finding supports the stewardship theorist point of view that one person in dual position can improve the firms stability and monitor the managers opportunistic behavior in Pakistan. The board independence and independent audit committee has no significant role in governing the devious behavior of managers. The finding specifies that independent directors on boards of Pakistani firms are not acting as independent at all. One of the reason would be that most of the independent directors might be associated with some other company of the group which temper their independency role. The independency became just a label not an attitude. As in Pakistan the ownership structure is very concentrated so it is possible that most of the independent directors are under the influence of the owners of the firm. The study indicates the non-monitoring attitude of the audit committee in Pakistani firms, this also raises questions on the independence of audit committee. Further, the study revealed that firm's board size is negatively significant associated to the earnings manipulation regardless of financial status of the firm. Whereas, board independence is positively significant related with earnings manipulation regardless of firm's financial status. CEO duality is positively significant related with earnings manipulation in non- distressed firms and negative significantly related to earnings manipulation in distressed firms. Audit committee independence do not significantly play their role in controlling the earnings manipulation regardless of the financial status of the firm. In sum the finding of this paper highlights the importance of board structure in income manipulation practices in Pakistani listed firms.

With respect to the policy-makers and regulation the present study also presents some useful suggestion for the effectiveness of board structure. The role of independent directors is found to be unproductive in decreasing the occurrence of earnings manipulations. Conversely, the presence of such independent directors on board is found to aggravate these manipulations. Therefore, policymakers have to create certain selection standards to fully ensure the independence and quality of the members and ensure their contribution to the firm is effective and substantial. In addition, the results indicate that the independent audit committee do not play any significant role in controlling real earnings manipulation. Furthermore, policymakers should pay more attention to the process of appointment of non-executive directors both on the audit committee and board. They should have required financial knowledge and experience to monitor the management. Board

independence and independent audit committee both are vital aspects of controlling mechanism which are closely assessed by investors/shareholders prior to investment.

This study also has some limitations hence providing directions for further research. In this study, we only use one governance mechanism i.e. Board structure. First, there are other corporate governance attributes that possibly have an influence on earnings manipulation behavior, like board gender diversity, board of director's financial expertise, and experience of board members that reduces real earnings management. Secondly, it will be interesting to examine the role of ownership structure on the real earnings management in Pakistan.

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