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IMPACT OF BOARD AND AUDIT COMMITTEE CHARACTERISTICS ON ACCRUALS AND REAL EARNINGS MANAGEMENT IN PAKISTAN

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ABSTRACT
Purpose: Despite a large number of regulations and standards governing the financial reporting process, earnings management is increasing at an alarming rate in organizations today. The aim of this study is to investigate the impact of board and audit committee characteristics on accruals and real earnings management practices in Pakistan. *Design/Methodology/Approach:* Earnings management as dependent variable is measured by using two model: Kothari et al., (2005) and Roy chowdhury (2006). Whereas, board size, board independence, CEO duality, audit committee size, audit committee independence and audit committee activity are the independent variables. This study was based on data collected from 235 non-financial firms listed on Pakistan Stock Exchange (PSX) from 2008 to 2015. The relationship was investigated by means of panel data estimation. *Findings:* The result revealed CEO duality is positively related with accruals earnings management. Whereas, board independence is negatively related and CEO duality, board activity and audit committee independence are positively related with real earnings management. *Implications/Originality/Value:* The findings of the study are important for investors, regulators, and legislators in their attempt to constrain the incidence of earnings management and improve financial reporting quality.
KEYWORDS: Earnings Management; CEO Duality; Audit Committee Independence; Financial Reporting

1. INTRODUCTION

The most important element for determining the strength and financial stability of any firm is the earnings. It is the last entity in the income statement of any firm, it shows how a company is economically beneficial and adds worth to shareholders wealth (Tabassum et al., 2013). The earnings shown in the financial statements may influence all the business activities as well as plays an important role for improving management decisions. Financial earnings may either impact investor behavior or it may affect contractual outcomes that may be associated to financial leverage or rewards of managers. Thus, managers have robust plans to alter earnings figures to the required level (Hassan & Ibrahim, 2014). The integrity of financial reports has always been an important issue for regulators and practitioners (Shah et al., 2009). Quality of financial reports depends heavily upon the choice of accounting treatment. The positive accounting theory by Watts and Zimmerman (1986) allows little bit change in the accounting principles, which also offers managers with great ability to change accounting earnings. Evidence revealed that stock market response for the earnings news is good when stated earnings beat or meet earnings prospects, whereas it responds unfavourably when the stated earnings drop below of earnings benchmarks (Brown & Caylor, 2005; Lacina & Karim, 2004; Skinner & Sloan, 2002). Therefore, managers have a propensity to evade releasing wicked earnings news at the times of earnings announcements (Hayn, 1995). Management's practice of using judgment in the financial reports and in arranging transactions to change financial earnings is called "earnings management (EM)" (Healy & Wahlen, 1999).

Managers can used various techniques or strategies that are legal and occasionally illegal to attain precise earnings targets (Tabassum et al., 2013). Specifically, managers can manipulate earnings through discretionary accounting choices (Abed et al., 2012; Arabborzoo et al., 2015; Kamran & Shah, 2014) or by structuring real transactions (Roychowdhury, 2006). All EM methods upsurge asymmetric information between outsiders and managers and obscure unmanaged economic performance of a firm, thus fading reliability and credibility of financial reports (Ascioglu et al., 2012). The worth of financial information is continuously dubious once earnings are frequently manipulated by firms (Busirin et al., 2016). The users of financial statements loss their confidence and trust to invest in the firm when they identified that financial reports are manipulated. For instance, loss of reliability of the auditing and accounting business, bankruptcy, deprivation of the efficacy and effectiveness of corporate governance, gigantic

financial fatalities of the firm, together with decline of efficiency of the financial markets and the economy as a whole (Collingwood, 2001). In the last era around the world, a series of corporate accounting scandals (such as Enron and WorldCom) were associated with a number of accounting manipulations (Beslic et al., 2015). The series of corporate accounting frauds elevated concerns about the reliability and credibility of financial reports and call into question about the roles of auditors, management, analysts, and regulators, among others (Bhasin, 2013; Ge & Kim, 2014).

Therefore, researcher proposed that appropriate level of governance mechanism are required for improving the quality of financial reports and reducing EM (Hassan & Ibrahim, 2014; Sun & Liu, 2012). Agency theory intends a sequence of governance mechanisms that seek to resolve the interests of both managers and shareholders (Bukit & Iskandar, 2009). Thus, corporate governance as a set of governance mechanisms, both market and institutional based, have been designed to alleviate agency problems that may arise from the separation of ownership and control in a company, increase performance of a firm, protect the interests of all stakeholders, and provide guarantee that investors get adequate returns on their investments (La Porta et al., 2000). There are two corporate governance control mechanisms, specifically internal and external (Denis & McConnell, 2003; Farooq & Eljai, 2012; Fernandez & Arrondo, 2005; Javid & Iqbal, 2010). Both mechanisms are necessary for enhancing the accountability and transparency of financial reports (Rezaee, 2005). The present research takes an important step to identify and fill the gap in the existing literature by examining the impact of board characteristics and audit committee (AC) characteristics on accruals EM and real EM in a developing country like Pakistan. The research study was investigated in Pakistan is due to the fact that corporate scandals such as, Taj company scandal, Crescent bank fraude, the Mehran bank scandal and privatization of Pakistan Telecommunication Company Limited (PTCL) are few examples of high profile cases and scandals in Pakistan. This research study investigates accruals EM, and real EM in the Pakistani context as no study has been undertaken to date in Pakistan that investigates both accruals and real EM and therefore, this study will extend existing knowledge of corporate governance mechanisms and EM practices and add to a better understanding by the users of the financial statements.

2. LITERATURE REVIEW

A large number of previous studies used board characteristics and AC characteristics as important corporate governance attributes that may help in mitigating various EM practices, the study do follow on the basis of literature support. The primary reason for choosing these attributes is that the main decision makers in the organizations are the board of directors, as the board of directors have the authority to take care of all decisions that are made by the higher authorities (Fama & Jensen, 1983). In addition, the AC is one of the sub-committee of the board whose main responsibilities is to help in financial reporting and that committee is established by the board of directors (Alzoubi & Selamat, 2012). Evidence from previous studies suggested that various board and AC characteristics such as board size, composition of independence directors, chief executive officer (CEO) duality, board activity, AC size, AC independence and AC activity may influence the effectiveness of their monitoring role (Abdul Rahman & Ali, 2006; Abed et al., 2012; Baxter & Cotter, 2009; Gulzar & Wang, 2011; Metawee, 2013; Siregar & Utama, 2008; Xie et al., 2003). The following section provides an overview of the literature that explains how various board and AC characteristics could be effective in reducing EM practices.

2.1 Board Size (BDS)

One of the basic aspects of effective decision making is the board size of the firm, it represents the total number of members on the board (Gulzar & Wang, 2011; Iraya et al., 2015; Masood & Shah, 2014; Uwuigbe et al., 2014). The total size of the board is taken as a significant feature of the board characteristics that may help in reducing EM practices (Abdul Rahman & Ali, 2006). Previous studies have proposed different arguments about the effects of board size on EM. One of these views suggested that, a large number of members on the board are effective in constraining EM. The reason is that large boards have members from a range of different positions and possess diverse knowledge, skills and experiences in managing the boards' activities (Kiel & Nicholson, 2003; Zahra & Pearce, 1989). Consistent with this argument, the previous studies which were conducted to analyse the relationship between board size and accruals EM revealed negative results (Abed et al., 2012; Aygun et al., 2014; Daghsnii et al., 2016; Ebrahim, 2007; Fodio et al., 2013; Hwang et al., 2010; Iraya et al., 2015; Uwuigbe et al., 2014). Moreover, Chouaibi et al. (2016), Rahman et al. (2016), Sun et al. (2014) and Susanto and Pradipta (2016) also found a negative relationship between board size and real EM.

Whereas, other view claims that board with few members show additional competency to monitor the CEO's behaviors in addition to making appropriate decisions for the firm (Goodstein et al., 1994; Lipton & Lorsch, 1992). The previous studies which were conducted to analyze the relationship between board size and accruals EM revealed positive results (Gonzalez & Meca, 2014; Kankanamage, 2015; Mashayekhi & Bazaz, 2010; Swastika, 2013; Wan

Mohammad et al., 2016). Likewise, Talbi et al. (2015) found a positive relationship between board size and real EM. The findings indicated that firms with smaller board size are more effective in their monitoring roles and help in reducing EM. However, some other studies found no significant association of board size with accruals and real EM (Kamran & Shah, 2014; Latif & Abdullah, 2015; Malik, 2015; Rahman et al., 2016; Swai & Mbogela, 2016). Based on the above mentined discussion and in the light of agency theory, the following hypothesis stateemnts can be empirically tested.

H_{1a}: There is a positive relationship between board size and accruals earnings management.
H_{1b}: There is a positive relationship between board size and real earnings management.

2.2 Board Independence (BDIND)

Another vital measurement of the board characteristics is the board independence. Board independence means the percentage of independent non-executive directors in the total number of members in the board (Iraya et al., 2015). In view of agency theory, board with a majority of outside directors taking part in board decision-making, will better oversee the management and reduce likelihood of EM (Fama & Jensen, 1983; Jensen & Meckling, 1976). The previous studies which were conducted to analyze the relationship between board independence and accruals EM revealed negative results (Dimitropoulos & Asteriou, 2010; Fodio et al., 2013; Hwang et al., 2010; Iraya et al., 2015; Kankanamage, 2015; Roodposhti & Chashmi, 2011; Swastika, 2013). Moreover, Talbi et al. (2015) found a negative relationship between board independence and real EM. Few researchers have investigated a positive relationship between board independence and accruals EM (Kantudu & Samaila, 2015; Omoye & Eriki, 2014). It has been demonstrated that independent directors may be dominant family members and have no background in accounting and finance and hence, may not have a significant effect on curbing EM. Moreover, Hassan and Ibrahim (2014) found that board independence have positive and significant relationship with real EM. Whereas, other similar studies found no significant relationship of board independence with accruals and real EM (Latif & Abdullah, 2015; Nahandi et al., 2011; Nelson & Devi, 2013; Nugroho & Eko, 2012; Malik, 2015; Sun et al., 2014). On the basis of above mentioned facts and empirical evidences, the study developed the following hypotheses.

H_{2a}: There is a negative relationship between board independence and accruals earnings management.
H_{2b}: There is a negative relationship between board independence and real earnings management.

2.3 CEO Duality (CEODUAL)

CEO duality means when a person carry both roles of the firm's CEO and chairman of the board (Apadore & Zainol, 2014; Kamran & Shah, 2014; Nugroho & Eko, 2012). The argument in favour of CEO duality explains that, when CEO duality occurs in a firm, it will provide more flexible environment for management and may provide more effective monitoring (Cornett et al., 2008; Davidson et al., 2004; Jensen, 1993). According to agency theory, if chairman and CEO position are occupied by one person, cost of supervising a board will significantly increase due to supremacy of the CEO (Fama & Jensen, 1983). In spite of the above view, the stewardship theory states that by combining the board chairman and CEO improve decision making process and help in creating more value for the firm. Kim et al. (2009) argued that by combining the role of chairman and CEO reduces board's effectiveness, thereby increasing agency costs. Consistent with this argument, the previous studies which were conducted to analyze the relationship between CEO duality and EM revealed positive results (Daghsnii et al., 2016; Dalton et al., 1999; Gulzar & Wang, 2011; Hwang et al., 2010; Kantudu & Samaila, 2015; Latif & Abdullah, 2015; Nugroho & Eko, 2012; Roodposhti & Chashmi, 2011; Uwuigbe et al., 2014). The findings depicted that by separating the role of chairman and CEO, EM is reduced.

On the contrary, very few studies have demonstrated a negative relationship between CEO duality and accruals EM (Aygun et al., 2014; Kang et al., 2013), thus supporting stewardship theory and indicating that the presence of CEO duality in a firm will help in enhancing the monitoring function of the board and therefore, will too lead towards constraining EM in such firms. Moreover, Liu and Tsai (2015) also found a negative relationship between CEO duality and real EM. Likewise, other few studies found no significant relationship of CEO duality with accruals and real EM (Gonzalez & Meca, 2014; Kamran & Shah, 2014; Chouaibi et al., 2016). On the basis of above mentioned facts and empirical evidences, the study developed the following hypotheses.

H_{3a}: There is a positive relationship between CEO duality and accruals earnings management.
H_{3b}: There is a positive relationship between CEO duality and real earnings management.

2.4 Board Activity (BDA)

Board activity provides an opportunity to discuss all of the important issues of the firm on a timely basis. Board activity has been defined as the number of board meetings conducted in a year (Gulzar & Wang, 2011). According to Lipton and Lorsch (1992), the efficiency of the board will improve if the firm have more board meetings. The previous studies which were conducted to analyze the relationship between board activity and accruals EM revealed negative results (Alzoubi & Selamat, 2012; Kankanamage, 2015; Kantudu & Samaila, 2015; Mashayekhi & Bazaz, 2010; Wan Mohammad et al., 2016). The findings are supported by agency theory that posits a greater agency cost earned by the board might help to observer the firms' activities (Jensen & Meckling, 1976). On the other hand, Metawee (2013) acknowledged that board meetings have a positive relationship with EM, which revealed that a high frequency of board meeting is unable to mitigate accruals EM and support the findings of Gulzar and Wang (2011), Iraya et al. (2015), Latif and Abdullah (2015), Obigbemi et al. (2016) and Susanto and Pradipta (2016). Results of these empirical studies proposed that greater frequency of meetings increases the incidence of accruals earning management, which in turn decreases financial reporting quality. However, a few studies have depicted no relationship between board activity and accruals EM (Ebrahim, 2007; Eze, 2017; Habbash, 2010; Kang et al., 2013; Vafeas 1999). On the basis of above mentioned facts and empirical evidences, the study developed the following hypotheses.

H_{4a}: There is a negative relationship between board activity and accruals earnings management.
H_{4b}: There is a negative relationship between board activity and real earnings management.

2.5 Audit Committee Size (ACS)

Audit committee size is a very important attribute for monitoring EM and it is related to high earning quality (Garcia et al., 2012; Pincus et al., 1989). According to Vafeas (2005), the average size of AC is three to four, any size that is too small or too large can affect the director performance and monitoring effectiveness. Previous studies proposed that companies with large AC are more effective as they have more skills, power and expertise in monitoring the management and it is used as an indicator to find the firm's resource availability (Bedard et al., 2004). The previous studies which were conducted to analyze the relationship between AC size and accruals EM revealed negative results (Bala, 2014; Elijah & Ayemere, 2015; Fodio et al., 2013; Juhmani, 2017; Mishra & Malhotra, 2016). Contrary to the above findings, the prior studies which were conducted to analyze the relationship between AC size and accruals EM revealed positive results (Abdul Rahman & Ali, 2006; Metawee, 2013; Sharma & Kuang, 2014; Siregar & Utama, 2008). The results showed that the higher the AC size, the higher the EM will be, and this is associated with lower earnings quality. In the same way, a significant positive relationship was reported between AC size and real EM by Hassan and Ibrahim (2014), Ibrahim et al. (2015) and Inaam et al. (2012). Moreover, A few studies have depicted no significant relationship between the size of the AC with accruals and real EM (Chandrasegaram et al., 2013; Latif & Abdullah, 2015; Soliman & Ragab, 2014; Sun et al., 2014; Susanto & Pradipta, 2016). On the basis of above mentioned facts and empirical evidences, the study developed the following hypotheses.

H_{5a}: There is a negative relationship between AC size and accruals earnings management.
H_{5b}: There is a negative relationship between AC size and real earnings management.

2.6 Audit Committee Independence (ACIND)

Audit committee independence is defined as the percentage of independent non-executive directors in the total number of AC members (Al-Rassas & Kamardin, 2015). Agency theory suggested that the presence of independent non-executive directors in the AC contributes to the effectiveness of AC monitoring functions (Fama & Jensen, 1983). The firm with independent AC are more likely to reduce the incidence of financial statement fraud, high reporting quality and lower level of EM (Abbott et al., 2004; Mustafa & Youssef, 2010; Soliman & Ragab, 2014). Consistent with this argument, the previous studies which were conducted to analyze the relationship between AC independence and accruals EM revealed negative results (Alkdai & Hanefah, 2012; Iqbal et al., 2015; Latif & Abdullah, 2015; Omoye & Eriki, 2014; Roodposhti & Chashmi, 2011; Soliman & Ragab, 2014). Likewise, Inaam et al. (2012) and Visvanathan (2008) found negative and significant relationship between AC independence and real EM.

Contrary to previous findings, Ahmad-Zaluki and Wan-Hussin (2010), Bala (2014) and Fodio et al. (2013) revealed that there is a positive relationship between AC independence and accruals EM. The result revealed that the independent members in the AC may not have adequate financial information and industry experience that may be required for effective monitoring. In the same way, Hassan and Ibrahim (2014) and Ibrahim et al. (2015) concluded that independence of the AC is positively associated with real EM. Moreover, a few studies have depicted no significant relationship between AC independence with accruals and real EM (Chandrasegaram et al., 2013; Juhmani, 2017; Rahman et al., 2016; Waweru & Riro, 2013). On the basis of above mentioned facts and empirical evidences, the study developed the following hypotheses.

H_{6a}: There is a negative relationship between AC independence and accruals earnings management.
H_{6b}: There is a negative relationship between AC independence and real earnings management.

2.7 Audit Committee Activity (ACA)

One of the significant objective for an AC is to conduct meeting with its members (Lin & Hwang, 2010). AC activity has been defined as the number of AC meetings for the year with external auditors (Al-Rassas & Kamardin, 2015). An intelligent and independent AC will play a more active, efficient and effective monitoring role because the members of AC meet regularly in order to ensuring the proper functioning of financial reporting process (Abdul Rahman & Ali, 2006). According to Salleh and Haat (2014), large number of AC meetings can reduces EM and anticipated that more diligence AC is more effective and can potentially enhance the quality of financial reporting. Consistent with this argument, the prior studies which were conducted to analyze the relationship between AC activity and accruals EM revealed negative results (Abdul Rahman & Ali, 2006; Elijah & Ayemere, 2015; Garcia et al., 2012; Metawee, 2013; Soliman & Ragab, 2014). The implication is that when ACs meet regularly, the members will get more opportunities to discuss issues in financial reports, are more likely to be actively involved in monitoring the financial reporting process. Likewise, Garven (2015) and Inaam et al. (2012) also depicted a negative relationship between AC activity and real EM. On the contrary, other similar studies found that there exists a significant positive relationship between AC activity and accruals EM (Bala, 2014; Collier & Gregory, 1999; Eze, 2017; Ghosh et al., 2010; Song & Windram, 2004). The key findings of the studies suggested that the more frequent the AC meets, the higher the EM practice will be. In the same way, Hassan and Ibrahim (2014), Ibrahim et al. (2015) and Susanto and Pradipta (2016) concluded that AC activity was positively associated with the real EM. Likewise, few studies have depicted no significant relationship between AC activity with accruals and real EM (Baxter & Cotter, 2009; Juhmani, 2017; Mishra and Malhotra, 2016; Visvanathan, 2008). On the basis of above mentioned facts and empirical evidences, the study developed the following hypotheses.

H_{7a}: There is a negative relationship between AC activity and accruals earnings management.
H_{7b}: There is a negative relationship between AC activity and real earnings management.

3. METHODOLOGY

The main purpose of this research study was to examine the impact of board characteristics and AC characteristics on accruals EM and real EM in the presence of control variables i.e. firm size, leverage and profitability. For this purpose data was collected from the 235 non-financial firms listed on Pakistan Stock Exchange (PSX). Census sampling technique was used to collect the data form the selected companies. Data was collected from year 2008 to 2015. Panel data technique was used in this study because the nature of data involve both the time series and cross sectional properties. As the panel data covers the heterogeneity of cross sectional by analyzing the individual firm and also eases the risk of co linearity and biasness among the variables. This study keeping in view the nature of data (balanced panel) used fixed effect method to estimate panel regression equation. This study consists of total twelve variables out of the, two i.e. accrual EM and real EM as represented by abnormal accruals and abnormal operating cash flows are dependent variables, board size, board independence, CEO duality, board activity, AC size, AC independence and AC activity are the independent variables. The three control variables i.e. firm size, leverage and profitability are the controlled variables. Table 1 provide the operational definitions of these variables.

Table 1: Operational definitions of variables

Variable	Symbol	Measurement
Board Size	BDS	Total number of board members on the board
Board Independence	BDIND	The percentage of independent non-executive directors in the total number of members in the board
CEO Duality	CEODUAL	Dummy variable with the assigning value 1 if the role of CEO and chairman are combined and 0 otherwise
Board Activity	BDA	Number of board meetings conducted in a year
Audit Committee Size	ACS	Total number of directors on audit committee
Audit Committee Independence	ACIND	Percentage of total number of independent non-executive directors divided by the total number of audit committee members
Audit Committee Activity	ACA	The number of audit committee meetings for the year with external auditors
Firm Size	FSIZE	Firm size measured by taking natural log of total assets of the firm.
Leverage	LEV	Measured as the ratio of total debt to total assets of the firm.
Profitability	ROA	Measured as the ratio of earnings before interest and taxes to total assets of the firm.

There are various methods that have developed by researchers to test for EM. This study used Kothari et al. (2005) model for accruals EM and Roychowdhury (2006) model for real EM. Abnormal accruals estimates has been used for accruals EM and abnormal operating cash flows has been used for real EM. The relationship of board characteristics and AC characteristics with accruals EM and real EM was analyzed by using the following models:

$$ABAC_{it} = \bar{\alpha}_1 + \beta_1 BDS_{it} + \beta_2 BDIND_{it} + \beta_3 CEODUAL_{it} + \beta_4 BDA_{it} + \beta_5 ACS_{it} + \beta_6 ACIND_{it} + \beta_7 ACA_{it} + \beta_8 FSIZE_{it} + \beta_9 LEV_{it} + \beta_{10} ROA_{it} + \mu_i + \mu_t + \varepsilon_{it}$$

$$ABOCF_{it} = \bar{\alpha}_1 + \beta_1 BDS_{it} + \beta_2 BDIND_{it} + \beta_3 CEODUAL_{it} + \beta_4 BDA_{it} + \beta_5 ACS_{it} + \beta_6 ACIND_{it} + \beta_7 ACA_{it} + \beta_8 FSIZE_{it} + \beta_9 LEV_{it} + \beta_{10} ROA_{it} + \mu_i + \mu_t + \varepsilon_{it}$$

Where:

$ABAC_{it}$	-	Abnormal Accruals (accruals earnings management)
$ABOCF_{it}$	-	Abnormal Operating Cash Flows (real earnings management)
BDS_{it}	-	board size
$BDIND_{it}$	-	board independence
$CEODUAL_{it}$	-	CEO duality
BDA_{it}	-	board activity
ACS_{it}	-	audit committee size
$ACIND_{it}$	-	audit committee independence
ACA_{it}	-	audit committee activity
$FSIZE_{it}$	-	firm size
LEV_{it}	-	leverage
ROA_{it}	-	profitability
μ_i	-	time invariant fixed effect
μ_t	-	firm invariant time specific effect
ε_{it}		disturbance term

4. EMPIRICAL ANALYSIS

4.1 Descriptive statistics

Table 2 shows the results for descriptive statistics of all the variables. The descriptive statistics depicts the mean, minimum, maximum, and standard deviation of all the variables which have been taken under study.

Table 2: Descriptive statistics

STATS	Mean	Min	Max	SD	Observations
ABAC	0.075	-0.818	1.898	0.306	1880
ABOCF	-0.042	-1.817	1.361	0.235	1880
BDS	7.844	6.000	15.000	1.432	1880
BDIND	1.298	0.000	9.000	1.848	1880
CEODUAL	0.750	0.000	1.000	0.433	1880
BDA	5.054	3.000	19.000	1.891	1880
ACS	3.231	3.000	6.000	0.539	1880
ACIND	0.268	0.000	7.000	0.574	1880
ACA	4.125	3.000	8.000	0.465	1880
FSIZE	15.182	10.472	20.339	1.670	1880
LEV	0.490	0.000	1.997	0.287	1880
ROA	0.087	-0.714	0.876	0.121	1880

ABAC = Abnormal Accruals, ABOCF = Abnormal Operating Cash Flows, BDS = Board Size, BDIND = Board Independence, CEODUAL = CEO Duality, BDA = Board Activity, ACS = Audit Committee Size, ACIND = Audit Committee Independence, ACA = Audit Committee Activity, FSIZE = Firm Size, LEV = Leverage, ROA = Profitability

Abnormal accruals (ABAC) varies from -0.818 to 1.898, with a mean value of 0.075 and standard deviation of 0.306 respectively. The mean value of abnormal operating cash flows (ABOCF) is -0.042, ranging from -1.817 to 1.361 with a standard deviation of 0.235. Board size of a firm (BDS) varies from 6.000 to 15.000 with a mean value

of 7.844 and standard deviation of 1.432 respectively. The mean value of board independence (BDIND) is 1.298, ranging from 0.000 to 9.000 with a standard deviation of 1.848. CEO duality (CEODUAL) varies from 0.000 to 1.000, with a mean value of 0.750 and standard deviation of 0.433 respectively. The mean value of board activity (BDA) is 5.054, ranging from 3.000 to 19.000 with a standard deviation of 1.891. AC size of a firm (ACS) varies from 3.000 to 6.000, with a mean value of 3.231 and standard deviation of 0.539 respectively. The mean value of AC independence (ACIND) is 0.268, ranging from 0.000 to 7.000 with a standard deviation of 0.574. AC activity (ACA) varies from 3.000 to 8.000, with a mean value of 4.125 and standard deviation of 0.465 respectively. Firm size (FSIZE) varies from 10.472 to 20.339 with a mean value of 15.182 and standard deviation of 1.670 respectively. Leverage (LEV) varies from 0.000 to 1.997 with a mean value of 0.490 with a standard deviation of 0.287. The mean value of firm profitability (ROA) is 0.087, ranging from -0.714 to 0.876 with a standard deviation of 0.121.

4.2 Correlation analysis

To examine the association among all the variables, correlation analysis was estimated. A number of previous studies such as Gujarati and Porter (2009) suggest 0.8 at the beginning at which multicollinearity concerns may harm the regression analysis. The correlation matrix in Table 3 shows that there is no multicollinearity because none of the variables correlates above 0.80 or 0.90 problem.

Table 3: Correlation Matrix

Variable	BDS	BDIND	CEODUAL	BDA	ACS	ACIND	ACA	SIZE	LEV	ROA
BDS	1									
BDIND	0.286***	1								
CEODUAL	-0.002	0.018	1							
BDA	0.105***	0.039*	-0.014	1						
ACS	0.468***	0.176***	0.008	0.046**	1					
ACIND	0.235***	0.207***	0.010	0.108***	0.271***	1				
ACA	0.133***	0.017	-0.021	0.142***	0.111***	0.136***	1			
FSIZE	0.376***	0.117***	0.007	0.165***	0.386***	0.277***	0.147***	1		
LEV	-0.273***	-0.095***	0.018	-0.063***	-0.236***	-0.179***	-0.098***	-0.215***	1	
ROA	0.147***	0.030	-0.083***	-0.024	0.153***	0.022	0.044*	0.164***	-0.313***	1

BDS = Board Size, BDIND = Board Independence, CEODUAL = CEO Duality, BDA = Board Activity, ACS = Audit Committee Size, ACIND = Audit Committee Independence, ACA = Audit Committee Activity, FSIZE = Firm Size, LEV = Leverage, ROA = Profitability.

*The p-values shown in parentheses i.e. ***, **, and * denotes significance at 1%, 5% and 10% levels, respectively.*

4.3 Variance Inflation Factor (VIF) and tolerance test

Table 4 presents the findings relevant to VIF and tolerance value for overall sample of non-financial firms listed on PSX. The condition of VIF and tolerance is that, if the value of VIF is more than 10 and the value of tolerance is less than 0.10 for any variable, it means the variable has some problem, which further needs to be addressed. The result of this test shows that variance inflation factor (VIF) value was less than 10 and tolerance value of variables was more than 0.10. Thus, this indicates that there is no evidence for multicollinearity problem between predictor variables.

Table 4: VIF and Tolerance Test

Variables	VIF	Tolerance
BDS	1.51	0.6613
BDIND	1.16	0.8594
CEODUAL	1.01	0.9875
BDA	1.08	0.9245
ACS	1.48	0.6754
ACIND	1.21	0.8271
ACA	1.07	0.9386
FSIZE	2.6	0.3849
LEV	1.26	0.7944
ROA	1.29	0.7723

BDS = Board Size, BDIND = Board Independence, CEODUAL = CEO Duality, BDA = Board Activity, ACS = Audit Committee Size, ACIND = Audit Committee Independence, ACA = Audit Committee Activity, FSIZE = Firm Size, LEV = Leverage, ROA = Profitability.

4.4 Hausman test

The study employed fixed or random effect model analysis to further examine the differences among results. Prior to define the empirical results in this study, it is essential to select appropriate model for this study. To achieve this purpose, the study applied Hausman test. Hausman test defined criteria for selection of appropriate panel model in empirical analysis. Hausman test criteria are based on significance or insignificance of Chi-Sq. statistics. The Hausman test results are given in Table 5 the Chi-Sq. statistics values of both models are significant at 5% level, indicates that fixed effect analysis is appropriate for both models as per the results of Hausman test.

Table 5: Results of Hausman Test

Correlated Random Effects-Hausman Test Test cross-sectional random effect		
Dependent Variables	Test Summary	
	Chi-Sq. Statistics	(Prob>chi2)
ABAC	48.64	0.0000
ABOCF	57.06	0.0000

ABAC = Abnormal Accruals, ABOCF = Abnormal Operating Cash Flows

4.5 Fixed effect analysis results of accruals earnings management

The result of fixed effect analysis between board and AC characteristics with accruals earnings management is presented in Table 6 with corresponding coefficient value and t-value. The F statistics was highly significant (F = 9.280, p-value < 0.000), indicating that board and AC characteristics could be considered to be influencing abnormal accruals (accruals earnings management). The R square value is 0.083 which indicating that the variables in the model explained only 8.3% of the variation in abnormal accruals.

Table 6: Fixed Effect Result of Accruals Earnings Management

Dependent Variable	Independent Variables	Coefficients	P-value
Abnormal Accruals (ABAC)	BDS	-0.01153	0.385
	BDIND	0.00861	0.135
	CEODUAL	0.13812***	0
	BDA	-0.00719	0.195
	ACS	-0.01978	0.39
	ACIND	-0.00942	0.543
	ACA	0.00351	0.848
	FSIZE	-0.05094**	0.015
	LEV	0.08247*	0.053
	ROA	0.17959**	0.034
	R Square	0.083	
	F-Statistics	9.28	
	Prob (F- Stat)	0	

*The p-values shown in parentheses i.e. ***, **, and * denotes significance at 1%, 5% and 10% levels, respectively.*

According to Table 6, the finding of fixed effect model indicates that CEO duality 0.13812 (p = 0.000), leverage 0.08247 (p = 0.053) and profitability 0.17959 (p = 0.034) are positively significant to the abnormal accruals. The table also shows that firm size -0.05094 (p = 0.015) is negatively significant to the abnormal accruals. As a conclusion, the variables CEO duality, leverage and profitability are positively significant, showing that increase in CEO duality, leverage and profitability will cause increase in abnormal accruals. In contrast, firm size are negatively significant to abnormal accruals. This may be concluded that firms with large size will cause decrease in abnormal accruals.

4.6 Fixed effect analysis results of real earnings management

The result of fixed effect analysis between board and AC characteristics with real EM is presented in Table 7 with corresponding coefficient value and t-value. The F statistics was highly significant (F = 7.320, p-value < 0.000), indicating that board and AC characteristics could be considered to be influencing abnormal operating cash flows (real earnings management). The R square value is 0.067 which indicating that the variables in the model explained only 6.7% of the variation in abnormal operating cash flows. According to Table 7, the finding of fixed effect model indicates that CEO duality 0.02293 (p = 0.053), board activity 0.01047 (p = 0.015), AC independence 0.02974 (p = 0.013) and profitability 0.35011 (p = 0.000) are positively significant to the abnormal operating cash flows. The table also shows that board independence -0.00774 (p = 0.082) and leverage -0.18567 (p = 0.000) are negatively significant to the abnormal operating cash flows. As a conclusion, the variable CEO duality, board activity, AC independence and profitability are positively significant, showing that increase in CEO duality, board activity, AC independence and profitability will cause increase in abnormal operating cash flows. In contrast, board independence and leverage are negatively significant to abnormal operating cash flows. This may be concluded that firms with more board independence and leverage will cause decrease in abnormal operating cash flows.

Table 7. Fixed Effect Result of Real Earnings Management

Dependent Variable	Independent Variables	Coefficients	P-value
Abnormal Operating Cash Flows (ABOCF)	BDS	0.01642	0.109
	BDIND	-0.00774*	0.082
	CEODUAL	0.02293*	0.053
	BDA	0.01047**	0.015
	ACS	-0.00325	0.855
	ACIND	0.02974**	0.013
	ACA	-0.00113	0.936
	FSIZE	-0.00032	0.984
	LEV	-0.18567***	0.000
	ROA	0.35011***	0.000
	R Square	0.067	
	F-Statistics	7.320	
	Prob (F- Stat)	0.000	

*The p-values shown in parentheses i.e. ***, **, and * denotes significance at 1%, 5% and 10% levels, respectively*

5. CONCLUSION

The aim of the current study was to examine the impact of board and AC characteristics on accruals and real EM in the presence of some control variables i.e. Firm size, leverage and profitability. For the purpose, 235 non-financial firms listed at Pakistan Stock Exchange (PSX) was analysed. The results of the study revealed that CEO duality is positively related with accruals and real EM. In the context of the Pakistani listed firms, these findings indicate that by separating the role of the CEO and the chairman, the monitoring function of the board will be improved. Whereas, board independence is negatively related with abnormal operating cash flows. In the context of the Pakistani listed firms, the presence of independent directors on the board serves an important role in monitoring the financial reporting process. Likewise, board activity is positively related with abnormal operating cash flows. In the context of the Pakistani listed firms, an increase in board meetings signifies the presence of problems because most of the board members are family members so they make decisions according to their own interest, which do not guarantee better monitoring. The finding of the study make a significant contribution towards an understanding of the role of board characteristics and AC characteristics in constraining EM practices in Pakistan.

5.1 Limitations and future recommendations

Despite, this research offers a valuable contributions, some notable limitations should be considered before generalizing the findings. First the study used two models for calculating the value of EM, in the literature there are so many other models to calculate the value of EM, there is no conclusive evidence, as yet, which model is the most powerful methodology with less measurement errors when measuring EM. Second the findings are based on Pakistan, which may limit the generalizability of the results to other developing countries. Future research could be replicated in other developed and developing countries with some more variables is likely to provide more in-depth information.

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