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An Empirical Investigation on Ownership Structure, Board Composition and Earnings Management: Evidence from Pakistani Listed Firms

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Abstract: *The current research study investigates the impact of ownership structure, and board composition on earnings management for a sample of 200 Pakistan Stock Exchange (PSX) listed non-financial firms. An index of ownership structure and board composition is created using Principal Component Analysis (PCA). Earnings Management is calculated using the Real Earnings Management approach. The impact of ownership structure and board composition on earnings management is investigated using the generalized method of moments (GMM). The findings of the study indicate that an increase in the levels of institutional and family ownership (ownership structure) helps in restraining the opportunistic behavior of management from managing earnings and vice versa. Conversely, board composition has a positive and noteworthy impact on earnings management. The findings of this research are useful for corporate managers in understanding the importance of ownership structure and earnings management to restrict earnings management.*

Introduction

Earnings management (EM) is the prime area of concern because of high-profile corporate scandals in the last three decades. There are numerous factors affecting EM, a few of which will be discussed in detail. Schipper (1989) defined EM as willful alterations by management while reporting financial results with an aim to secure benefits not available to outsiders. EM is a willful exercise of using accounting discretion in order to get the required results in financial reporting (Gao et al., 2019). According to Lisa et al. (2021), earnings are managed to deceive investors using accrual earnings management (AEM) or real EM (REM). It is argued in the previous literature that REM is favored by managers over AEM, as it is very subjective and totally at the discretion of managers and, therefore, less likely to be a cause of objection by auditors (Chi et al., 2011).

Companies are legally and ethically bound to report true and fair figures. Changing the results in an attempt to show a better financial position and performance than what actually is, raises concerns over the quality of financial reports. This opportunistic behaviour is a result of the absence of a corporate governance mechanism in an organization (Saona et al., 2020). In recent years,

a series of high-profile corporate scandals have damaged the reputation of firms in the eyes of stakeholders. There is a history of cases like Enron, Lehman Brothers, WorldCom, Anderson Worldwide, and Maxwell, which uncovered the need to build up the guidelines and regulations for a more straightforward disclosure of financial statements. In all of those aforementioned scandals and many other similar cases, the primary reason for those failures not being identified in advance was EM by those charged with governance. EM is thought of as a form of irregularity in financial reporting and agency problems between those charged with governance and shareholders (Ghaleb et al., 2020).

Inherently, there are areas in financial reporting where multiple options are available for the measurement, recognition and presentation of financial statements. EM relates to activities in which managers tend to change the reports and the company's position in order to mislead shareholders, potential investors and creditors specifically and all the stakeholders in general in order to meet certain targets like debt covenants (Saona et al., 2020). Kałdoński et al. (2019) state that financial reports can be manipulated in a couple of ways. The first option, AEM, is to change financial statements through discretionary accruals without changing the cash flows. The second option for managing the earnings is REM, which will be the focus of this study, which is to manipulate company earnings by changing the timing and extent of capital and revenue expenditures like the acquisition of assets, advertising expenditure and increasing revenue by giving extra discounts or selling on sales or returns basis in order to achieve required figures for the financial statements. Regardless of whether this is fraudulent or otherwise, EM results in the increase of informational asymmetries between managers and other stakeholders, which finally results in a deviation from the ultimate goal of maximization of shareholder's wealth (Abad et al., 2017).

EM has been the prime area of concern for the last two decades, but the focus has been on internal and external governance systems. Other studies reveal the relation types of shares issued and EM (Sosnowski, 2017, 2018; Sosnowski & Wawryszuk-Misztal, 2019). With the improvements in codes of corporate governance across countries and more vigilant auditing practices, it becomes difficult for managers to manage earnings using AEM. As a result, they have shifted towards REM as it is discretionary and not questionable in audits.

Gender diversity on the board and its influence on the level of EM is a comparatively newer dimension among different stakeholders, as the representation of females on the board of directors is increasing year by year (Orazalin, 2020). A lot of recent studies have emphasized that diversity in the board can improve the reliability and relevance of annual reports. It is probable that the presence of female director(s) will result in improved effectiveness of the board's monitoring activities resulting in lesser chances of EM (Arioglu, 2020; Maglio et al., 2020; Orazalin, 2019). Fan et al. (2019) suggest that the representation of females enhances the independence and efficiency of BOD, and this improvement results in decreasing EM. Ammer and Ahmad-Zaluki (2017) study that the corporate governance mechanisms and corporate reporting quality can be improved by the inclusion of directors from both genders on the board. García-Sánchez et al. (2017) suggest that the appointment of female directors (FD) tends to improve the quality of reported information because of the more traditional and orthodox practices for financial reporting followed by them. Fan et al. (2019) argue that FDs are more ethical in behavior compared to their male counterparts and have better professional judgment. Consequently, it is more likely that fraudulent reporting incidents will be reported to those charged with governance (Capezio and Mavisakalyan, 2016). FD tends to avoid fraudulent

reporting and improve the quality of corporate reporting as a result (Ginesti et al., 2018).

On the contrary, there are some studies in the past that show inconclusive results regarding gender diversity on board and its impact on EM. For example, Waweru and Prot (2018) suggest that the appointment of an FD does not affect EM practices in organizations. As a result, the role of FD is still debatable in dropping the level of EM in companies.

Corporate scandals are damaging the trust of investors and other stakeholders like regulators and the community in general. It also contributes to harming the impression of any given country in the global arena. EM is one of the prime tools for managers before a business goes bankrupt. Being able to quantify the impact of the composition of the board and ownership structure of any firm on EM might help in predicting the future of that firm and saving investors and other parties from otherwise inevitable losses.

The current research work improves on the limited exploration in the context of Pakistan on the effects of ownership structure and board composition on EM and, therefore, should be useful for regulators and academia alike.

Literature Review

Ownership Structure

Agency theory is the most prevalent and has received greater consideration from researchers and specialists. Agency theory states that there is a separation of ownership and management in corporations, just like the relationship between principal and agent. Management (agent) is believed to perform in the interests of shareholders (principal) but is restrained due to their own self-interests (Jensen & Meckling, 2019). This quest of self-centeredness escalates the costs to the organization in the form of loss due to investment in less profitable projects, achieving short-term goals at the cost of longer-term goals, which might increase profitability in the short term but the overall sustainability of the organization may be compromised (Al Azeez et al., 2019). Corporate governance systems are made to reduce this conflict between internal and connected stakeholders and boost managers to act in the best interest of shareholders (Saona et al., 2020). This can be done by aligning the interest of directors and shareholders.

Managers have been more inclined towards REM in recent years as it cannot straightforwardly be spotted by auditors (Shayan-Nia et al., 2017). Earnings manipulation practices depend on the level of scrutiny through auditors (Doukakis, 2014), meaning the managers spend their time and efforts looking to manage earnings in a way that they cannot be detected easily by the auditors, simultaneously achieving their financial objectives. It is argued that it is hard to isolate REM from ordinary business events; therefore, managers are more at ease in controlling earnings through real activities and without any concerns from external auditors and regulatory authorities. Most researchers document that businesses have used both methods to modify reported profits and accomplish earnings targets]. Regarding the level of EM in Pakistan, Shaikh et al. (2019) study the influence of ownership structure on REM and point out that managers control earnings through REM to meet short-term goals and earnings targets in order to benefit personally or to reduce the pressures of external stakeholders. Family-owned businesses are also involved in EM practices in Pakistan (Shahzad et al., 2017).

Alignment of interests assists in promoting the safety of all other shareholders and restricting the insider shareholders from making private gains at the cost of other shareholders (Ali et al., 2020). Further, a huge rise in insider ownership is not related to an organization's value. Ali et al. (2020) conclude that inside shareholding adversely affects companies' performance in emerging countries. Though, inside ownership seems not to seem important in affecting businesses' performance in advanced countries.

Concluding the above discussion, the first independent variable of the study is ownership structure made up of the variables of institutional and family ownership, which postulates that

H1: *A negative relationship is expected between corporate ownership structure and earnings management.*

Board Composition

The composition of BOD in an organization is one of the most vital features of CG. To improve the efficiency of the board, the inclusion of outside directors (Non-Executive Directors) is a requirement of different codes of CG. The agency approach proposes that NEDs are an efficient way of reducing the conflict of interest between shareholders and insider managers. NEDs act as indifferent parties to this agency approach and are likely to put in effort in order to achieve the ultimate objective of maximization of shareholder wealth (Monks and Minow, 2011).

It is generally accepted in the previous studies that bigger boards result in better financial reporting quality and will be more vigilant in monitoring the overall activities of the organization, thereby resulting in lesser opportunities to manage earnings opportunistically compared to smaller boards. This is certainly due to the fact that a bigger board will have more expertise and a wide variety of skill set that is necessary for monitoring the firm's performance and board supervision (Rajeevan & Ajward, 2019). Though the affiliation between the size of the board and earnings manipulation is varying in previous studies, in this respect (Saona et al., 2020) stated that as the relationship between the board size and EM is not consistent, this results in EM being inversely related to the board size. The results about the influence of the size of the board on EMs are not decisive. For example, there are numerous kinds of literature suggesting the inverse relationship between the size of BOD and EM (Cunha & Piccoli, 2017).

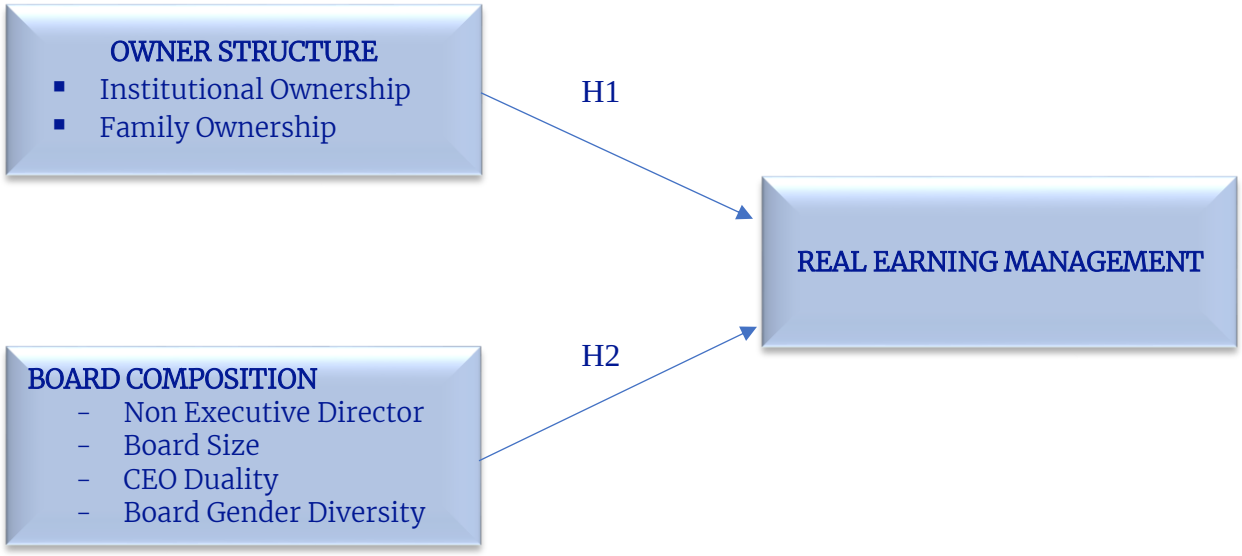
In the environment of Pakistan, it was concluded by (Shah, Rashid, & Shahzad, 2019) that the board size of Pakistani firms has an inverse relationship with EM, whereas the results of (Ahmad et al., 2020) display a direct and significant relationship of the size of the board and opportunistic behavior of insiders to manage earnings. On the contrary, the studies of (Rasheed, Fareena, & Yousaf, 2019) observe that the size of the board has no association with EM. As a result, it is not clear what kind of impact board size may have on EM.

Existing literature has published contradictory outcomes about CEO duality and its impact on REM. Kharashgah et al. (2019) stated that CEOs with dual roles tended to improve REM in findings of non-financial firms in Jordan from 2001 to 2017. Likewise, Al-Haddad & Whittington (2019) proposed that in 108 companies in Jordan, the dual role of CEO has resulted in exaggerated levels of REM. Other studies found an insignificant relationship between the dual roles of the CEO and the instances of EM (Garven, 2015). Similarly, Chouaibi et al. (2018) failed to discover any impact of the dual roles of the CEO on REM in a study of listed companies in Tunisia.

GD has become gradually significant over the last decade in the business world. Female presence on BOD tends to reduce agency costs (Amin et al., 2021). On the contrary, FD with a lack of relevant financial knowledge is unable to reduce EM, irrespective of the level of experience in their previous jobs (Zalata et al., 2021). It means that GD on board has no positive influence on EM, as Umer, Abbas, Hussain, & Naveed (2020) state the inverse relationship of boards with gender diversity with practices of EM. The next hypothesis combines board size, Independent directors, board duality and GD into one variable of board composition to study its impact on the level of EM.

H2: *The composition of the board has a positive impact on the level of earnings management.*

Theoretical Framework



Methodology

Sample and Data Collection

This part explains the information source, specification of the model and methodology used in the econometric analysis. In emerging economies like Pakistan, an effective board structure is required to safeguard the shareholders' rights (Aksar & Ahmed, 2022). The study took the sample comprises of 200 non-financial PSX (Pakistan Stock Exchange) listed firms from the years 2010 to 2021, which allows creating an unbalanced panel. The sample comprises 200 non-financial PSX-listed firms from the years 2010 to 2021, which allows the creation of an unbalanced panel. The sample firms are representative of the Pakistani corporate sector as only the non-financial listed firms during the period of analysis are included, distributed in the following industrial sectors: consumer goods and services, petrol and energy, technology and telecommunications, basic materials, industry and construction, and other industrial sectors.

Financial firms are not included in the analysis because of their reporting requirements, which are quite different from those of non-financial organizations. Firms having a negative common equity balance and those who are technically in bankruptcy are also excluded from the study as the opportunistic behavior for managing earnings is significantly different from other going concerns. This study is concerned with analyzing the impact of ownership structure and composition of the BOD (an index is made using different relevant variables discussed above) on the real EM in firms. The data used is a combination of cross-sectional and time series data, which allows for the composite of panel data.

Measurement of Variables

Real Earnings Management (REM)

REM is the dependent variable in this study, measured using Roychowdhury (2006) by the value of three REM residuals. This model is used widely used in previous kinds of literature. The models used to measure REM are abnormal discretionary expenses, abnormal production cost and abnormal cash flow from operations. These are calculated using the difference between actual and normal values for each variable using the following equations.

$$\frac{DisExp_{it}}{A_{it-1}} = \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{Sales_{it-1}}{A_{it-1}} + \varepsilon_{it} \quad (1)$$

$$\frac{Prod_{it}}{A_{it-1}} = \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{Sales_{it}}{A_{it-1}} + \beta_3 \frac{\Delta Sales_{it}}{A_{it-1}} + \beta_4 \frac{\Delta Sales_{it-1}}{A_{it-1}} + \varepsilon_{it} \quad (2)$$

$$\frac{CFO_{it}}{A_{it-1}} = \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{Sales_{it}}{A_{it-1}} + \beta_3 \frac{\Delta Sales_{it}}{A_{it-1}} + \varepsilon_{it} \quad (3)$$

From the above equations, cash flows from operations are a better predictor of REM. Therefore it is used to measure REM. Firms can increase sales by offering disproportionate price discounts or lenient terms to credit customers. Nevertheless, it results in lower cash flows from operations. Therefore, the negative abnormal cash flows from operations are understood as evidence of upward REM. Similarly, firms can decrease sales by charging higher prices, which will result in higher cash flows from operations. This positive abnormal cash flow from operations will be taken as evidence of downward REM (Roychowdhury, 2006).

Ownership Structure: The first independent variable is the ownership structure (OWN) of the firm. Two proxies are used to measure the ownership structure of the firm.

Institutional ownership: It is measured by the level of shares owned by institutions. Institutional investors might see monitoring the management as an activity where the cost outweighs the benefits.

Board independence: It is measured using the percentage of independent non-executive directors compared to the total number of directors.

Board size: Board Size represents the total number of directors, which includes the chairman and CEO of the organization.

Gender diversity: It is normally measured as the percentage of FD compared to the overall size of the BOD. In this study, GD is measured by a dummy variable where the presence of even a single female board member is regarded as one and a board where all directors are male is considered as 0.

CEO: CEO is measured using the dummy variable where a single person holding both the CEO and chairman's office is denoted by 1 and 0 otherwise.

Control variables

The study also includes five control variables that were identified as prerequisites in previous studies to account for the potentially confounding effects of firm-specific features that may affect the level of REM. The first one is (AGE) **age of the company**, which is expressed as a natural log of the number of years a company is in existence. The second one (LEV) calculated how the **leverage of the firm**, calculated as debt as a percentage of overall capital employed. Third (TANG) is the **level of fixed assets** a firm has as a percentage of total assets. Fourth (FSIZE) is the **size of a firm** calculated as a natural log of total assets. The last control variable (SG) is **sales growth** which calculates the percentage growth in sales of firms compared to the previous reporting period.

Econometric Model

To analyze the hypotheses of the study and evaluate the impacts of an ownership structure of the firm, the composition of the BOD and control variables on REM, the following panel regression model is used:

$$REM_{it} = \beta_0 + \beta_1 OWN_{it} + \beta_2 BCOMP_{it} + \sum_{i=3}^{n} \beta_i \, Cont\ Var_{it} + \varepsilon_{it} \quad (4)$$

Where:

REM_{it} Is the REM practices of a company $_i$ at time $_t$, measured as the residuals from the "cash flow

from operations" metric from the Roychowdhury model (Roychowdhury, 2006).

OWN_{it} Is the ownership structure of the company $_i$ at time $_t$, which is measured using two different proxies, namely level of institutional ownership and family ownership in a firm.

$BCOMP_{it}$ Is the composition of BOD of firm $_i$ at time $_t$ measured by the index of the following variables; percentage of the independent directors on board, size of the BOD, CEO duality and GD in BOD?

$Cont\ Var_{it}$ Is the measure of control variables of a company $_i$ at time $_t$. The following control variables are used to account for the potentially bewildering effects of firm-specific features that may affect the level of REM; the age of the company, percentage of debt compared to total assets, level of fixed assets a firm has as a percentage of total assets, size of a firm calculated as a natural log of total assets and sales growth of firms compared to previous years.

Results and Discussion

Descriptive Statistics

Table 1: Descriptive statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
REM	-0.1322	0.007453	1.044786	-269.4315	5.870047
BCOMP	0.003180	-0.2184	5.836678	-1.6927	1.225978
OWN	0.000296	-0.2578	13.83977	-0.2729	1.012683
AGE	3.509296	3.526361	7.608374	0.693147	0.587444
LEV	0.227370	0.147678	0.554909	0.12334	0.413293
TANG	0.555801	0.571892	0.999373	0.000360	0.221773
FSIZE	15.55683	15.51444	20.45747	10.59125	1.707563
SG	0.069222	0.092822	3.777058	-3.2427	0.391843

Where REM = Real Earnings Management, BCOMP = Board Composition, OWN = Ownership Structure, AGE = Age of firm, LEV = Firm Leverage, TANG = Tangibility, FSIZE= Firm Size, SG = Sales Growth

Table 1 shows the descriptive statistics of independent and control variables. The results are summarized as follows: Board composition has a mean value of 0.003180 with a minimum value of -1.6927 and a maximum value of 5.836678. The value of the standard deviation for board composition is 1.225978. The ownership structure has a mean value of 0.000296 with a minimum value of -0.2729 and a maximum value of 13.83977. The value of the standard deviation for ownership structure is 1.012683. Firm age has a mean value of 3.509296 with a minimum value of 0.693147 and a maximum value of 7.608374. The value of the standard deviation for firm age is 0.587444. Leverage has a mean value of 0.227370 with a minimum value of 0.12334 and a maximum value of 0.554909. The value of the standard deviation for leverage is 0.413293. The tangible assets proportion has a mean value of 0.555801 with a minimum value of 0.000360 and a maximum value of 0.999373. The value of the standard deviation for tangible assets is 0.221773. Firm size has a mean value of 15.55683 with a minimum value of 10.59125 and a maximum value of 20.45747. The value of the standard deviation for firm size is 1.707563. Sales growth has a mean value of 0.069222 with a minimum value of -3.2427 and a maximum value of 3.777058. The value of the standard deviation for sales growth is 0.391843.

Correlation

Table 2: Correlation Matrix

	REM	BCOMP	OWN	AGE	LEV	TANG	FSIZE	SG
REM	1.0000							
BCOMP	0.0254	1.0000						
OWN	-0.0123	0.0339	1.0000					
AGE	0.1058	0.0599	-0.0040	1.0000				
LEV	-0.0125	-0.0265	0.0218	-0.0663	1.0000			
TANG	-0.0274	0.0649	0.1339	-0.0970	0.2365	1.0000		
FSIZE	0.0289	0.2466	0.2919	0.0054	-0.1488	0.0601	1.0000	
SG	-0.0094	0.0019	0.0193	-0.0230	-0.0551	-0.0313	0.0980	1.0000

Where REM = Real Earnings Management, BCOMP = Board Composition, OWN = Ownership Structure, AGE = Age of firm, LEV = Firm Leverage, TANG = Tangibility, FSIZE= Firm Size, SG = Sales Growth

Table 2 presents the correlation coefficients of all variables. Board composition has a positive correlation of 0.0254 with REM. Board composition has a positive correlation of 0.0599 with the age of the firm. Board composition has a negative correlation of 0.0265 with firm leverage. Board composition has a positive correlation of 0.0649 with the proportion of tangible assets of a firm. Board composition has a positive correlation of 0.2466 with the size of the firm. Board composition has a positive correlation of 0.0019 with sales growth. Ownership structure has a negative correlation of 0.0040 with the age of the firm. Ownership structure has a positive correlation of 0.0218 with firm leverage. Ownership structure has a positive correlation of 0.1339 with a proportion of tangible assets of a firm. Ownership structure has a positive correlation of 0.2919 with the size of the firm. Ownership structure has a positive correlation of 0.0193 with sales growth.

Table 3: Panel Generalized Method of Moments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
REM	0.044731	0.000221	202.1420	0.0000
BCOMP	17.05555	0.267518	63.75482	0.0000
OWN	-0.486155	0.078324	-6.206970	0.0000
AGE	7.150248	0.129960	55.01891	0.0000
LEV	-1.591331	0.306475	-5.192360	0.0000
TANG	-1.633191	0.835299	-1.955216	0.0507
FSIZE	-0.629176	0.069058	-9.110825	0.0000
SG	0.719209	0.019094	37.66624	0.0000

Where REM = Real Earnings Management, BCOMP = Board Composition, OWN = Ownership Structure, AGE = Age of firm, LEV = Firm Leverage, TANG = Tangibility, FSIZE= Firm Size, SG = Sales Growth

The results of the above-mentioned table suggest that BCOMP has a beta value of 17.05555, which indicates that 1 unit change in BCOMP brings a change of 17.05555 units. The t-value 63.75482 is

greater than 1.96, and the p-value is less than 0.05, which indicates that board composition has a significant positive impact on earnings management. Similarly, OWN has a beta value of -0.486155, which indicates that 1 unit change in OWN causes a change of -0.486155 units. The t-value of -6.206970 is greater than 1.96, and the p-value is less than 0.05, which indicates that board composition has a significant negative impact on earnings management. The empirical results suggest that ownership structure is inversely related to the level of EM, which means that as the level of institutional shareholding and family bases shareholding rises, the degree of opportunistic behavior of managing the earnings falls due to the fact that the owners are directly involved as directors and are monitoring the effectiveness of management ever so closely. Another reason for this decrease is explained by the agency theory in the sense that higher family and institutional ownership results in aligning the objectives of management and shareholders, thereby reducing the conflicts of interest between the two parties. This is consistent with the previous literature (Goh et al., 2013; Ali et al., 2020). Hence, it is proved that the composition of the board has a positive impact on the level of earnings management.

The impact of board composition on REM was also analyzed, and the results were as per expectations in that the composition of the board has a positive impact on the level of EM. This is also consistent with the previous studies; as the board size increase, the management is more involved in managing earnings (Ahmad et al., 2020), although some of the previous studies yielded the opposite results (Shah, Rashid, & Shahzad, 2019). The dual role of the CEO is also significantly impacting the degree of EM practices. A single person occupying the roles of CEO and Chairman is more likely to be involved in managing the earnings (Al-Haddad & Whittington, 2019). The level of independent directors also impacts significantly on REM. Thus, a positive relationship is observed between corporate ownership structure and earnings management.

Conclusion

The aim of this study is to investigate the impact of the ownership structure of an organization and the composition of BOD on the level of REM in context companies listed on the Pakistan stock exchange. This study examines 200 non-financial firms listed on PSX. REM was the dependent variable and was measured using Roychowdhury's (2006) model. Initially, the impact of six different independent variables was to be analyzed on REM, but it was reduced to two independent variables by making the index of six previous independent variables. The study uses a generalized method of moments to measure the impact of independent variables on REM. The results indicate that ownership structure has a negative and board composition is positively associated with REM.

This study adds value to the existing literature by confirming the results of previous researchers using different combinations of independent variables. Future researchers can use different combinations of variables to measure independent variables of ownership structure like shareholding percentages of top three shareholders, experience and educational background of BOD, to mention a few. The impact of these variables was seen on REM which was measured using the difference between actual and expected cash flows from operations. Abnormal discretionary expenses and abnormal production costs can be combined with abnormal cash flows from operations to calculate REM. Furthermore, the effect of these variables can be analyzed on AEM and REM jointly, which will give a clearer picture for current and potential investors and regulatory bodies alike.

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