Nexus between corporate governance and earnings management in family and non-family firms

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Abstract: *This study explores the relationship between internal corporate governance mechanism and accruals and real earnings management (EM), following Pakistan's 2012 amended Code of Corporate Governance. It also examines the moderating role of family firms on the relationship among corporate governance mechanisms and accruals and real earnings management. For this purpose, we used a sample of 172 firms listed on the Pakistan Stock Exchange (PSX) for 2012–2019. The dependent variables were estimated by utilizing the generalized method of moments (GMM), fixed random effects and moderation analysis were estimated through Stata. Hausman specification test was used to choose among random and fixed effects. Results report that board size showed a significant positive impact on abnormal discretionary expenses and overall real earnings management. Board independence led to a substantial and negative impact with accruals EM. Managers of family-owned firms are also opportunistically altering the reported earnings. Results illustrate to the users of financial statements that the reliability of financial information depends on the effectiveness of corporate governance. Also, highlight the efficiency of monitory mechanisms and suggest that board independence is one of the practical approaches for an emerging market to restrain the EM practices. Findings are helpful for regulators, policymakers, and investors to regulate and make policies to improve the financial reporting quality in Pakistan. As per the authors' knowledge, this study adds the novelty by focusing on two critical internal monitoring mechanisms (board independence and board size) in mitigating earnings management, following the 2012 amended Code of Corporate Governance in Pakistan. It will add uniqueness by studying the moderating role of family ownership, as the literature is scarce. The findings of this study highlighted the impact of the internal monitoring mechanisms on earning management practices in Pakistan.*

Keywords: *Accruals earnings management, board independence, corporate governance code, dynamic panel data, family ownership, real earnings management, Pakistan.*

Introduction

Earnings management has raised global concern due to its detrimental influence on financial reporting and, consequently, on financial markets after financial scandals like Enron, and WorldCom. Earnings are a critical measure of a business's performance and are thus crucial to financial statement users (Jiang & Kim, 2020; Li et al., 2022, Rankin et al., 2017). Under this perspective, it is frequently in the best interests of business owners and managers to manipulate reported earnings for personal gain (Chan et al., 2020; Habib et al., 2017). Manipulation of reported earnings either within GAAP principles or outside leads to inappropriate information about the firm (Rahman & Mohamed Ali, 2006). The financial reporting transparency may be mitigated by incorporating monitoring mechanisms like Corporate Governance (CG; Abu Afifa et al., 2022; Feng & Huang, 2020; Shleifer & Vishny, 1997).

Parfet (2000) demonstrated that managers alter reported earnings by utilizing accounting flexibility of practices or policies. Therefore, these financial scandals have established unethical behaviour and realized a need for accountability and transparency in reported earnings (Alareeni, 2018; Jennings, 2012). Connected to this, the flaws observed in such financial scandals resulted in worldwide enhanced recognition and significance regarding accountability, consistency and transparency (Ahmad-Zaluki & Wan-Hussin, 2010; Shehata, 2015). This phenomenon is also true for Pakistan's market scandals like Islamic Investment Bank, various Housing Cooperative Societies, Taj Company, Mehran bank, KASB bank, and EXACT (Kiernan, 2005). Most of the firms belong to the family business of Pakistan (Khan, 2018). Country investor protection level also determines the level of reporting quality. Pakistan has an underdeveloped capital market, weak investor protection, low transparency, and a lack of necessary voluntary disclosure standards (Arshad & Javid, 2014; Jadoon et al., 2021). Therefore, underlines a dire need to study the financial reporting quality of Pakistani firms.

An extensive literature documents the monitoring role of internal CG mechanisms in improving financial reporting quality. Hence, based on the agency theory, this article investigates the relationship between CG and earnings management by focusing on the monitoring function of two integral internal mechanisms, particularly, board independence and the board of directors (Al-Haddad & Whittington, 2019; Jensen & Meckling, 1976). Also, studies based on US and UK data show good CG can minimize earnings manipulation (Klein, 2002; Peasnell et al., 2005). Following this, we investigate whether United States and United Kingdom findings hold for Pakistani firms, extending research by examining whether board independence also assists in mitigating EM practices. Hence, the objectives of this study are manyfold. Firstly, to explore the relationship between accruals and real earnings management and the independence of corporate boards in Pakistan-listed firms. Secondly, to study the nexus between accruals and real earnings management and non-executive directors. Additionally, to investigate the interaction effect of family firms in EM and board independence relationship.

Following prior studies, this study uses two types of earnings management, i.e., accruals (AEM) and real (REM). We estimate the AEM from the Kothari et al. (2005) model and REM from the Roychowdhury (2006) model following the Al-Haddad and Whittington (2019), as well as Shah et al. (2020). The system and the difference generalized methods of moments have estimated AEM and REM residuals. In summary, board size showed a significant positive relation with AEM and REM. Secondly, a significant positive association was found by the presence of non-executive directors on the board. Thirdly, one of the efficient monitoring mechanisms to mitigate earnings management was board independence. Finally, when we use overall REM, Pakistani firms were positively associated with one or the other to achieve target earnings.

The findings of this study extend the existing literature in EM and CG in different ways. The previous literature has no clear relationship between board independence and EM. Therefore, this study will explore the relation by analysing more comprehensive proxies of board independence and earnings management to advance this subject area's findings because the past studies examine this relationship either through AEM or REM. To the best of our knowledge, this is the first study to consider both proxies with an additional one, i.e., REM-all, by aggregating the three types of REM in one study. The present study will also contribute to the literature by filling the gap identified by (Alhebri et al., 2021; Massis & Foss, 2018; Kumar & Zattoni, 2018) to consider the moderation

factors affecting boards of directors' functions. Identically, the unique feature of family-owned firms is "heterogeneity," as family firms govern most of the world's businesses.

The same is true for Pakistani firms. Family business strategic decisions are altogether different from non-family firms. When family and business interface with each other, it brings "familiness" to the businesses, bringing unique resources and focus on financial and non-financial performance outcomes (Ferramosca & Allegrini, 2018; Gómez-Mejía et al., 2007; Martin et al., 2016). In a situation of low financial performance, the family firm's consistency indicates that they care not only about monetary profits but also about non-financial profits, including the satisfaction of the need for belongings, the preservation of family dynasty across generations, and the maintenance of good reputation, among others (El-Chaarani & El-Abiad, 2017, 2019). Family business research has shifted from agency to a socioemotional wealth model (El-Chaarani, 2013; Gomez-Mejia et al., 2014). So, this study will also add literature in the context of a family firm's decision-making. Furthermore, in the context of an emerging nation, i.e., Pakistan, this is the first study to explore the effect of board independence on restricting the REM and AEM after introducing the 2012 code of CG in Pakistan.

The remainder of the paper is section 2, literature review, section 3, research design, section 4 results and discussions, and section 5 conclusion.

1. Theoretical background

Previous literature notably classifies earnings management into two. One is accruals EM used to fade actual economic performance by making Generally Accepted Accounting Principles (GAAP; Dechow & Skinner, 2000). According to Healy and Palepu (2001), these include the change in accounting policy, i.e., depreciation methods, deferred taxation, fair value measurement, goodwill impairments, etc. In contrast, real earnings management is the operational manipulations by managers instead of a change in accounting policy. Operational manipulations include the shift in timing or structuring of transactions, resource allocation, and investment decisions to change ongoing year earnings (Dechow & Skinner, 2000; Roychowdhury, 2006). Graham et al. (2005) survey illustrates that managers were tempted

to manage REM after the Sarbanes-Oxley Act in 2002. REM provides less chance to identify price discounts or change sales strategy by auditors or regulators as AEM does.

At the same time, AEM alone does not fulfil the earnings target gap (Roychowdhury, 2006; Shah et al., 2020). Corporate governance is one of the monitoring mechanisms that help in providing financial reporting quality. Along with the alignment effect, this mechanism lowers the agency cost and possible agency problems among insiders and shareholders (Demsetz & Lehn, 1985). The board of directors is the vital internal mechanism of CG that ensures the smooth process of financial reporting quality. Corporate boards monitor all the business activities, aligning shareholders' interests with internal management, resulting in less managerial opportunism (Liu & Fong, 2010). Literature also finds corporate boards' effective monitoring machinery which helps in reducing agency problems between managers and shareholders (Fama & Jensen, 1983; Jensen & Meckling, 1976).

This study also applied bibliographic analysis of keywords. The analysis relies on the 998 articles. The data was extracted from the Web of Sciences (WOS) due to its ability to the data from a broader perceptive of information this platform offers (Zhao et al., 2019) according to their particular disciplines (Hosseini et al., 2018). Following the Web of Sciences is the platform widely recognized by several authors of existing review scient metric data techniques; we utilize data extraction based on the keywords co-occurrence and co-citation analysis (Chen, 2017).

We employed a VOS viewer to map the literature matrix based on the keywords due to interest (Yahaya et al., 2020). Previously, this software has also been utilized to perform its powerful ability to construct a visualization map based on the links and the threshold for the object of bibliometric analysis in many studies (Khatib et al., 2021; Zheng & Kouwenberg, 2019). This study performs science mapping by focusing on the central topic themes comprising of 998 papers based on the following keywords: "earning management," "accrual earnings management," "real earnings management," "Corporate Governance," and "family firms." These keywords either detected in title or abstract within the search bar query were selected from the Web of Science database, ranging from

2016–2021 of the 67 articles were dropped due to not meeting the co-occurrence threshold.

1.1 Board size

It is the conviction in the literature that board size also impacts the financial reporting quality. Consistent with agency theory, larger boards have more expertise, social resources, diversity, and time to monitor management decisions (Dalton et al., 1998). Hence, there is a negative relation between board size and EM. Previous literature findings are inconclusive regarding EM. For instance, Abu Afifa et al. (2022) and Ghosh et al. (2010) report that larger boards mitigate EM practices. Githaiga et al. (2022) as well as Sarkar et al. (2008) conclude the opposite. Whereas, board size was significantly negative when using the REM proxy (Kang & Kim, 2012). Talbi et al. (2015) report a positive relationship with board size. Abdel et al. (2016) and Jamaludin et al. (2015) report no association between board size and EM. This study focuses on board independence's monitoring role, as large boards have more independent directors with added monitoring capacity. So, embedded in agency theory, we hypothesized that:

H1a: There is a significant negative relation between board size and AEM.

H1b: There is a significant negative relation between board size and REM.

1.2 Non-executive directors

According to agency theory, non-executive directors (NED) are the outside directors on the board who are required to monitor and control the opportunistic behaviour of executive directors (Jensen & Meckling, 1976). In enhancing board effectiveness, NED acts as a check and balance mechanism. As rooted in their equity slice and stemming straight from the directors' chair, they have more opportunities to control and go through a multifaceted web of incentives (Mangel & Singh, 1993). According to Fama and Jensen (1983), NED plays a monitoring role in management performance and strategic decisions. Being outsiders, NED is an additional source to the firm as they act as decision experts. Not only because of their expertise but also their professional reputation (Pearce & Zahra, 1992; Weisbach, 1988) argue that as NED are independent of management and CEO influence, they act as a positive influencer over directors' decisions. Also, assist in mitigating managerial consumption

of perquisites (Githaiga et al., 2022). Hence, we hypothesized that:

H2a: There is a significantly negative relation between non-executive directors and AEM.

H2b: There is a significant negative relation between non-executive directors and REM.

1.3 Board independence

In literature, board independence is an effective GC mechanism for monitoring and restraining EM practices. Fama (1980) as well as Fama and Jensen (1983) document that the presence of independent directors (IDs) acts as a control mechanism and helps in improving the effectiveness of the board. IDs have strong incentives to act as competent monitors. Independent directors have motivations to cultivate reputations as specialists in decision-making and monitoring, gaining expertise by working on a managerial position outside the firms (Fama & Jensen, 1983) affirm by Githagia et al. (2022) and Goel and Kapoor (2022) study. To the best of the authors' knowledge, only one study Nazir (2015) studied board independence with AEM and REM proxies in the Pakistani context. Therefore, this study will fill this gap by examining the relationship between two proxies for board independence with AEM and REM. We postulate the hypotheses as:

H3a: There is a significant relation between Board independence and AEM.

H3b: There is a significant relation between Board independence and REM.

2. Research methodology
2.1 Sample and data selection

The sample is Pakistani firms listed on the Pakistan Stock Exchange (PSX) for 2010 to 2019. Data on board independence, REM, AEM, and family/non-family variables are personally administrated from the firm's annual reports publicly available on PSX (www.psx.com.pk), indicating the date of acquisition of the data and respective firms' websites. Data on the share price has been collected from the Stock Indices website (www.investing.com). The Securities and Exchange Commission issues the CG code to regulate the listed firms in Pakistan. The first code of CG was enforced in 2002, amended in 2012, and then in 2017. In April 2012, SECP incorporated three introductory clauses and included nine revisions in the previous code. In addition, listed firms must appoint an independent director,

which was optional in the last code. This study chooses 2012 as the base year. As REM models require two lag year data, we also included two years of data before 2012.

2.2 Research approach and demographics

In this study, following Bisogno and Donatella (2022), we use the deductive approach to find the answer of our research question and quantitative method to analysis the data. The sample is drawn from a population of 530 listed firms on the Stock Exchange of Pakistan (www.psx.com.pk). Dropping missing and unavailable data, we left with with 32% of the sample. Initially, the study attempted to include all the listed manufacturing firms. In next step, this study excludes financial firms because of their regulatory nature, unique capital structure, and accounting methods (Asghar et al., 2020). Data missing for a year from the study period or discontinued operations have been eliminated, leaving a 32% sample of the total population with 1,376 observations over eight years.

2.3 Variable description and methodology, dependent variables

A list of variables with abbreviations is presented in Tab. 1.

This study uses the Kothari et al. (2005) model to proxy for AEM and Roychowdhury (2006) model as a REM proxy.

Accruals earnings management

This study uses abnormal operating accruals as a proxy of AEM. The normal accruals are the actual firms' condition and sales growth which managers cannot manipulate. In comparison, abnormal (discretionary) results from managerial discretion into the financial reporting process. Hence, we use the Kothari et al. (2005) model of performance-matched discretionary accruals developed initially by Jones (1991).

According to Kothari et al. (2005), poor performance firms engaged more in earnings management activities, so they incorporate one performance measure, i.e., return on asset (ROA), in the accruals model and relate the accruals with ROA in poorly performing firms. Kothari et al. (2005) model is:

$$
\begin{aligned}
TA_{i,t}/A_{i,t-1} = {} & \beta_0 + \beta_1(1/A_{i,t-1}) + \\
& + \beta_2\,(\Delta REV_{i,t} - REC_{i,t}/A_{i,t-1}) + \\
& + \beta_3(PPE_{i,t}/A_{i,t-1}) + \beta_4\,(ROA_{i,t}) + \varepsilon t_{i,t}
\end{aligned} \tag{1}
$$

Tab. 1: Variable description

Variable	Symbol	Definition
Corporate governance variables		
Total directors	TD	Total number of directors on the board
Non-executive directors	NED	Ratio of non-executive directors to the total number of directors
Board independence	BI	Independent directors to the total number of directors
Control variables		
Long term debt ratio	LTDR	Ratio of long-term debt to total assets
ROA	ROA	Profit after tax/total assets
Tobin's Q	TQ	(Market capitalization + book value of total liabilities)/book value of total assets
Market capitalization	–	Average stock's upper and lower price/2, multiplied by the total number of outstanding shares
Firm size	FS	Natural log of total assets
Interaction term		
Family ownership	FO	Dummy variable (one if managers hold 5% of common stock, zero otherwise)

Source: own

where: $TA_{i,t}$ – total accruals defined as earnings before extra-ordinary items minus cash flow from operations of firm i at year t; $A_{i,t-1}$ – total assets of firm i at year t; $\Delta REV_{i,t}$ – change in sales revenue of firm i at year t, $\Delta REC_{i,t}$ – change in firm's accounts receivables i at time t; $PPE_{i,t}$ – gross value of plant, property, and equipment of firm i at year t; $ROA_{i,t}$ – profit after tax divided by total assets; $\varepsilon_{i,t}$ – unspecified random errors.

We estimated the residuals of the equation and called them abnormal discretionary accruals. This study uses standardized residuals as a proxy of discretionary accruals.

Real earnings management
Following prior studies, we use three models for REM (based on managerial manipulations in operational activities), developed by Dechow et al. (1998) and applied by Roychowdhury (2006). These activities include:

- *Sales-based manipulation* – by accelerating the timings of sales, giving price discounts, or offering more lenient credit terms, all at the expense of cash flow from operations;
- *Discretionary expenses manipulation* – reduction in discretionary expenditures, such as cutting the research and development (R&D), advertising, selling, and administrating (SG&A) funds; lowering discretionary expenses in a particular year will raise reported earnings respective year;
- *Production cost manipulations* – producing more units to lower the total cost of goods sold, which leads to an increase in the profit margin (over-production to report a drop in COGS).

According to Roychowdhury (2006), lenient credit terms and discounts are used to uplift sales in the current period, which results in a drop in sales in the subsequent year, accompanied by reduced profit margins and higher production costs. Hence, we assume an abnormally low operating cash flow (AbCFO) in the current period because of sales manipulation. A negative value signals manipulation in cash flow from operations. Contrary to this, managers manage earnings upward by producing more units to report a high operational margin, resulting in a higher value of abnormal production cost. AbProd with a positive sign interprets as a signal of REM.

Finally, to meet earnings targets, managers may reduce R&D, selling, general and administrative expenses as these expenses are

expensed in the same period as they incurred. So, we expect a lower abnormal discretionary expenses value. A value with a negative sign is interpreted as evidence of abnormal discretionary earnings management. The routine business operational activities are normal cash flow from the operation, normal discretionary expenses, and normal production costs. In contrast, abnormal cash flow from the operation, abnormal discretionary expenses, and abnormal production costs are the estimated values from models. Residuals, the difference between normal and abnormal, are the proxies used for earnings management in further analysis. All these models are estimated for each firm and each year. REM (abnormal production cost, abnormal operating cash flow, abnormal discretionary expense) models are as below.

$$PROD_t/A_{t-1} = \alpha_0 + \alpha_1\left(1/A_{t-1}\right) + \\ + \alpha_2\left(S_t/A_{t-1}\right) + \alpha_3\left(\Delta S_t/A_{t-1}\right) + \\ + \alpha_4\left(\Delta S_{t-1}/A_{t-1}\right) + \varepsilon t_{i,t} \quad (2)$$

$$CFO_t/A_{t-1} = \alpha_0 + \alpha_1\left(1/A_{t-1}\right) + \\ + \alpha_2\left(S_t/A_{t-1}\right) + \alpha_3\left(\Delta S_t/A_{t-1}\right) + \varepsilon t_{i,t} \quad (3)$$

$$DisExp_t/A_{t-1} = \alpha_0 + \alpha_1\left(1/A_{t-1}\right) + \\ + \beta_1\left(S_{t-1}/A_{t-1}\right) + \varepsilon t_{i,t} \quad (4)$$

$$\Delta INV/A_{t-1} = \alpha_0 + \alpha_1\left(1/A_{t-1}\right) + \\ + \alpha_2\left(\Delta S_t/A_{t-1}\right) + \alpha_3\left(\Delta S_{t-1}/A_{t-1}\right) + \varepsilon t_{i,t} \quad (5)$$

$$COGS_t/A_{t-1} = \alpha_0 + \alpha_1\left(1/A_{t-1}\right) + \\ + \beta_1\left(S_t/A_{t-1}\right) + \varepsilon t_{i,t} \quad (6)$$

where: *Prod* – residuals from Equation (1–2); S_t – current year sales; ΔS_t – change in sales from the current – previous year (1st lag of sales variable); ΔS_{t-1} – change in [previous year sales – previous year (2nd lag of sales variable)]; *CFO* – cash flow from operations; *DisExp* – research & development + advertising + selling, general and administrative expense; $COGS_t$ – cost of goods sold.

This study predicts all four earnings management models using "Arellano-Bover/Blundell-Bond linear dynamic panel data estimation." Greene (2000) advocates that estimation models comprising multiple lags, especially in dependent variables, may lead to autocorrelation between lagged endogenous variables and residuals when estimated through simple regression. Hence, the results obtained might be biased and inconsistent. Boujelben and Fedhila (2011) maintained using the Arellano-Bover/Blundell-Bond linear dynamic panel data estimation, an estimation procedure with system GMM (generalized moments of methods). Therefore, this study uses dynamic panel estimates. The differenced GMM estimator proposed by Arellano and Bond (1991) and System GMM model is given by Blundell and Bond (1998). Generalized moments of methods (GMM) use an instrumental variable to resolve endogeneity, measurement errors, and heterogeneity issues. Following Nazir and Afza (2018), this study uses the lagged difference of the dependent variable as an instrumental variable. Residuals obtained from system and difference GMM used as discretionary, abnormal production, abnormal cash flow from operations, abnormal discretionary earnings management proxies in further analysis.

Following Al-Haddad and Whittington (2019) and Shah et al. (2020) abnormal cash flows from operations and abnormal discretionary expenses are multiplied by −1 to interpret the same as abnormal production cost and discretionary accruals. Therefore, a higher value indicates a higher probability of changing operational decisions to increase revenue. All earnings management variables are standardized and winsorized at the 1st and 99th levels.

Furthermore, we construct an aggregate real management proxy by combining residuals of all three models. Following Alhadab and Nguyen (2018), we interpret *REM_all* as the higher the *REM_all* value, the larger the implied use of REM. *REM_all* is as follows:

REM_all = (−abnormal cash flows from operations + abnormal production cost − abnormal discretionary expenses).

2.4 Moderator

Family ownership is taken as a dummy variable, one if it is family owned and zero otherwise. Consistent with Porta et al. (1999), we define family ownership as firms or managers having 5% common stock. In our sample, family ownership varies from a minimum of zero to a maximum of 72%, indicating that most of the firms listed on PSX are under family control. These results are consistent with the findings of previous studies in developing countries (Hiranrithikorn & Joemsittiprasert, 2019; Tomaskova et al., 2021), where a large number of family-owned firms exist.

3. Research results and discussion
3.1 Summary statistics

Tab. 2 shows the summary statistics of dependent, independent, and control variables. Average mean of total directors was 8 with a standard deviation of 1.1842 with board independence of 13.6259 means that corporate boards in Pakistan have a lower proportion of independence for external monitoring. The mean value for non-executive and independent directors is 4% and 1%, which

Tab. 2: Summary statistics – Part 1

Variable	Observation	Mean	Std. dev.	Minimum	Maximum
Corporate governance variables					
TD		7.7798	1.1842	6.0000	14.0000
NED	1,376	4.5603	1.3357	1.0000	9.0000
BI		0.1683	0.0795	0.0700	0.7100
Earnings management variables					
AEM		0.9157	0.9894	0.0019	3.1408
AbCFO	1,376	2.8207	0.8906	1.5931	3.3101
AbProd		−0.6980	1.3216	−3.6500	0.5061
AbDisc		−0.0920	0.0464	−0.1730	−0.0270

Tab. 2: Summary statistics – Part 2

Variable	Observation	Mean	Std. dev.	Minimum	Maximum
Control variables					
ROA		0.0357	0.1695	−2.6480	3.1261
TQ	1,376	12.570	1.6705	4.8477	16.9737
FS		3.5924	0.7757	0.8152	5.6611
LTDR		0.1457	0.1925	0.0001	2.2625
Interaction term					
FO	1,376	0.5174	0.4998	0.0000	1.0000
Robustness variable					
ID	1,376	1.3117	0.6797	1.0000	5.0000

Source: own (processing in Stata 14)

Note: TD – total directors; NED – non-executive directors; BI – board independence; AEM – abnormal earnings management; AbCFO – abnormal cash flow from operations; AbProd – abnormal production cost; AbDisc – abnormal discretionary expense; ROA – return on assets; TQ – Tobin's Q; FS – firm size; LTDR – long term debt ratio; FO – family ownership; ID – independent directors.

means that there are four non-executive directors on average, and one independent director is present on each firm's board.

AbCFO showed a mean value of 2.8207 while AbProd −0.6985 and AbDisc −0.0924. Return on assets showed a value of 0.0357. ROA and TQ led to a value of 0.0357 and 12.5703, revealing the fundamental position of the profitable firms in accounting measures. In terms of the market-based performance measures, i.e., TQ indicates that investors are thinking positively and placing a higher value on the book assets of firms. The average size of sample firms is 3.5924 and varies between 0.81 to 5.66.

Long-term debt is an essential source of debt in capital structure. Pakistani firms use on average 0.1457 long-term debt in their structure, which ranges to 2.26 at maximum. As the Pakistani firms have negative equity, therefore the ratio is greater than 100%.

3.2 Multivariate analysis

Tab. 3 shows the Pearson correlation matrix of the independent variable. All the independent variables are free from the problem of multicollinearity. The correlation among variables is below the threshold level of 0.70, a limit drawn by Kervin (1992) after which we have

Tab. 3: Correlation matrix of the independent variable

	TD	NED	BI	ROA	TQ	FS	LtDR
TD	1						
NED	0.5941	1					
BI	0.1335	−0.3839	1				
ROA	0.1732	0.1232	0.0749	1			
TQ	0.1501	0.0584	0.1273	0.3393	1		
FS	0.2139	0.0268	0.1433	0.1052	0.0670	1	
LtDR	−0.0972	−0.0207	−0.0265	−0.0568	0.0013	−0.3321	1

Source: own (processing in Stata 14)

Note: TD – total directors; NED – non-executive directors; BI – board independence; ROA – return on assets; TQ – Tobin's Q; FS – firm size; LtDR – long term debt ratio.

a multicollinearity problem. Correlation results are coherent to Asghar et al. (2020) and Al-Haddad and Whittington (2019).

3.3 Results (GMM) for estimating AEM and REM

Tab. 4 shows the results for estimating dependent variables through GMM. Two specifications tests, i.e., the Hansen (1982)/Sargan (1985) tests and second-order serial correlation, specify the reliability and consistency of GMM estimates. As results showed, an insignificant p-value of 0.319, 0.062, 0.288, 0.081, and 0.131 (respectively) validates the validity of the instrumental variable and that the model is well specified. The second test for the overall validity of GMM estimates is the Arellano-Bover/Blundell-Bond (AR2) test for serial correlation of error terms. An insignificant p-value implies that the original error term is serially uncorrelated, and the moment conditions are correctly specified. Hence the results showed insignificant p-value of AR2 i.e., 0.399, 0.314, 0.085, 0.306 and 0.07, respectively.

Panel data regression analysis
for dependent and independent variables
This research uses panel data regression analysis to study the impact of board independence on earnings management. Tab. 5 presents the diagnostics tests for all models. Another test for detecting multicollinearity is the variance inflation factor (VIF). According to Myers (1990), multicollinearity is pronounced in sample data if its value crosses 10. The VIF value for all four models is 1.43, 1.48, 1.53, respectively, concluding that no variable is a linear transformation of the other. Hence, this study is free from the issue of multicollinearity. These findings are consistent with Al-Haddad and Whittington

(2019), and Bataineh et al. (2018). Results are reported in Tab. 5.

This study uses a balanced panel of 172 firms with 1,376 observations around eight years. The Hausman specification test was estimated to identify the existence of fixed or random effects. For the accruals model, Hausman test value ($Prob$ > Chi2) is below 0.05; hence the fixed-effect model is preferred. AbCFO, AbProd, and AbDisc values for ($Prob$ > Chi2) are higher than 0.05; we choose the random effect model for both models. Breusch-Pagan/Cook-Weisberg's test with the null hypothesis of no heteroskedasticity is estimated. All three models report a value less than 0.05 ($Prob$ > Chi2 = 0.0000); hence, our sample suffers from heteroskedasticity. We estimate the Wooldridge test for the absence of autocorrelation of the error term to fulfil another regression assumption. Results indicate the presence of autocorrelation. This study uses linear panel models with robust standard error suggested by Petersen (2009) to correct for heteroskedasticity and auto-correlation.

Board size (represented by the total number of directors) significantly impacted AbDISC and REM_ALL. These results corroborate with findings of Al-Haddad and Whittington (2019), and Daghsni et al. (2016).

Board independence is another factor that mitigates the manager's opportunistic behaviour. When we use AEM as an EM proxy, it has a significant and negative impact. The results are consistent with Alden et al. (2019), Al-Haddad and Whittington (2019), and Zang (2012). Firm size is significant and negative when using the AEM proxy. Results are consistent with Capalbo et al. (2014) and Sáenz González and García-Meca (2014). While with AbProd and

Tab. 4: GMM results for creating a dependent variable (AEM and REM)

Tests	Disc AEM	AbCFO	COGS	INV	AbDISC
GMM	1st step difference	2nd step system	1st step difference	1st step difference	1st step system
AR2	0.399	0.314	0.085	0.306	0.070
Srgn	0.319	0.062	0.288	0.081	0.131

Source: own (processing in Stata14)

Note: Disc AEM – discretionary accruals; AbCFO – abnormal cash flow from operations; COGS – cost of goods sold; INV – inventory, AbDISC – abnormal discretionary accruals; GMM – generalized moments of the method; AR2 – Arellano-Bover/Blundell-Bond; Srgn – Sargan test.

Tab. 5: Results for panel data regression

P > |t|	AEM	AbCFO	AbProd	AbDisc	REM_ALL
TD	−0.511	0.101	0.210	−0.052*	0.040*
NED	0.851	−0.219	−0.823	0.549	−0.109
BI	−0.027*	−0.818	−0.736	0.310	0.805
ROA	0.009*	−0.000*	0.199	−0.216	0.391
TQ	0.044*	−0.079	0.879	0.170	−0.667
FS	−0.030*	−0.679	0.004*	0.882	0.002*
LtDr	0.264	0.251	−0.504	0.062	0.996
R squared (%)	67.420	14.260	13.410	11.510	17.650
Hausman for fixed or random	0.020	0.090	0.6826	0.250	0.306
Breusch and Pagan Lagrangian multiplier test	–	0.000	0.000	0.000	0.000
Wooldridge test for autocorrelation	0.010	0.001	0.000	0.030	0.000

Source: own (processing in Stata)

Note: Tab. 5 reports the *p* values of regression analysis among dependent, independent, and control variables; all the variables' definitions listed in Tab. 2;
*5% significance level;
TD – total directors; NED – non-executive directors; BI – board independence; ROA – return on assets; TQ – Tobin's Q; LtDr – long term debt ratio.

REM_ALL, depict that larger firms are involved in sales manipulation.

ROA showed a significant positive relation between AEM and REM_ALL measure. To check the robustness, we estimate the relationship between independent directors and AEM and REM management and found a negatively significant relationship. Moreover, family ownership is taken as a moderator in board independence and earnings management relationship. Moderation results are in Tab. 6. Results reveal that family ownership does not significantly impact the relationship between AEM and board independence. In contrast, the value of 0.005, for non-executive directors (NED), and total directors (TD). In the case of AbCFO, the interaction terms showed insignificant relation with board independence, NED, and total directors. When we estimate interaction term with AbDISC, this showed a significant positive relation with board independence while NED, and TD showed a significant negative link. Findings are consistent with Chi et al. (2015) as well as Donnelly and Lynch (2002).

Discussion

Board size (represented by the total number of directors) has a significant impact on AbDISC and REM_ALL accepting the hypothesis that the size of the corporate board mitigates the EM. Whereas pertaining to second hypothesis, this study results inconclusive findings of the impact of rem on earnings management. These results suggest that larger boards cut petty cash from discretionary expenditures to report increased current year earnings. Additionally, the presence of larger boards results in lower vigilance and lower financial reporting quality. One justification might be that corporate boards in Pakistan are influenced by family ownership; hence, monitoring is compromised as they act instead of watchdogs. Non-executive directors are the external directors holding corporate boards but are not firm employees. Their role is to monitor the executives' activities, and development of strategy but are not responsible for day-to-day business activities. In all five models, non-executive directors' role was found to be insignificant in mitigating

Tab. 6:	Results for moderation

DV_Interaction term_IV	*P*-value
AbAEM_FO_BI	0.174
AbAEM_FO_NED	0.002
AbAEM_FO_TD	0.003
AbCFO_FO_BI	0.521
AbCFO_FO_NexdD	0.095
AbCFO_FO_TD	0.073
REM_ALL_FO_BI	0.078
REM_ALL_FO_NexdD	0.326
REM_ALL_FO_TD	0.117
AbDisc_FO_BI	0.000
AbDisc_FO_NexdD	0.355
AbDisc_FO_TD	0.726
AbProd_FO_BI	0.115
AbProd_FO_NexdD	0.985
AbProd_FO_TD	0.584

Source: own (processing in SPSS 24)

Note: AbAEM – accrual earning management; FO – family ownership; BI – board independence; NED – non-executive directors; TD – total directors; AbCFO – abnormal cash flow from operations; AbDisc – abnormal discretionary expense; AbProd – abnormal production cost; REM_ALL – real earnings management all.

earnings management rejecting our hypothesis that non-executive directors have a negative impact on EM. One possible reason might be the boards' composition pattern. Most of the firms in Pakistan are family-controlled, and board appointments are based on friendship, business relations, or kinship. Non-executive directors either have personal or professional links with the family firm, and their monitory role might be compromised.

Board independence is another factor that mitigates the manager's opportunistic behaviour confirming our hypothesis that board independence mitigates the AEM and REM practices. When we use AEM as an EM proxy, it has a significant and negative impact – implying that the higher the board independence higher the monitoring mechanism by external independent directors and the lowers the reported earnings manipulation. The rationale for these findings might be that independent directors protect the shareholder's rights by controlling the EM practices and external market pressures,

which constantly respond to reported earnings. Firm size is significant and negative when using the AEM proxy, suggesting that large firms are less engaged in accrual management. These findings might be due to the vigilant role played by independent directors, and independent auditors' opinions. Large firms are less likely to engage in practices as they are equipped with developed and efficient CG mechanisms and high market reputational risks. While with AbProd and REM_ALL, depict that larger firms are involved in sales manipulation. One possible reason for this differing result might be that financial analysts and investors are keen on firms' reported earnings. They are more likely to engage in operations manipulations to portray a rosy picture.

ROA showed a significant positive relation between AEM and REM_ALL measure. These results explain that good-performing firms are also involved in earnings manipulation activities. At the same time, firm growth is positively significant with accruals EM and REM_ ALL.

Long term debt ratio has insignificant relation with all proxies of EM. One reason might be that Pakistani firms, on average, use 14% long-term debt in their capital structure and are less prone to excessive risk, which in turn reduces the investors' pressure of monitoring and glossy earnings. To check the robustness, we estimate the relationship between independent directors and AEM and REM management and found a negatively significant relationship. Moreover, results reveal that family ownership does not significantly impact the relationship between AEM and board independence. In contrast, the value of 0.005, for non-executive directors (NED), and total directors (TD). Since, directors are aware of the auditor's scrutiny in the financial reports they pay careful attention to the numbers.

Conclusions

The presented study investigates the link between board independence, non-executive directors, and earnings management in a developing market, i.e., Pakistan. For this, we have used a sample of 172 Pakistan stock exchange-listed firms from 2012–2019. Overall, results established that the financial quality of reported earnings in Pakistan is somehow compromised. In our sample, the board size, and non-executive directors' presence were associated with manipulation in reported earnings. Board independence is an efficient control mechanism as it showed a significant negative relationship with earnings management. By incorporating family ownership as a moderator, results showed that family-owned firms in Pakistan are deliberately involved in AEM or REM practices. The rationale for these findings is ineffective CG mechanisms and inadequate compliance with the CG Code. Additionally, the code is not legally bound; hence managers might be tempted to manage earnings opportunistically. On the other hand, the firms' ownership structure is concentrated, as families own seventy per cent of firms. This combo of ownership structure and institutional environment gives managers excessive control to turn things in their favor. They have freedom in strategic decision-making, preferring non-economic benefits over economic benefits and forming a board structure on kinship or friendship, thus compromising the monitoring quality. One reason for managing earnings might be to maintain financial reserves and achieve financial flexibility. Also due to the reason, Pakistan has an underdeveloped capital market, weak rules and regulations, weak investor protection, low transparency, and a lack of necessary voluntary disclosure standards. The presented study will provide empirical support to policymakers to improve financial quality by revising regulations and taking counteractive decisions. Also, to improve the board members hiring standards of listed firms. The findings of this study are also important for top management to understand the extent to which the managers are involved in earnings management practices. Moreover, findings confirm that managers are somehow involved in earnings management so regulatory authorities take necessary steps to address the loopholes in regulations.

The current study proposes policymakers and regulators are responsible for developing CG codes to safeguard the interests of shareholders (particularly minority investors) by introducing updated rules and practices, particularly concerning EM practices. The present study is limited to the manufacturing sector only. Future avenues may be to include the financial or service industries for comparable results. Moreover, other CG variables like board education, experience, compensation, big4 auditing firms, and chief financial officer accounting experience should be included. Another avenue might be the inclusion of other moderating variables like internal and external block holders. The study has been conducted using a Pakistani sample, recognizing limitations in utilizing these findings in other countries, suggesting a need for more research undertaking parallel studies in other emerging markets. So that provides more shreds of evidence for policy guidance in emerging markets and develops literature understanding to the rest of the world.

References

Abdel, R., Monsif, A., & Ahmad, K. B. (2016). The impact of corporate governance characteristics on earnings quality and earnings management: Evidence from Jordan. *Journal of Business Administration*, *12*(1), 187–207.

Abu Afifa, M., Saleh, I., Al-shoura, A., & Vo Van, H. (2022). Nexus among board characteristics, earnings management and dividend payout: Evidence from an emerging market. *International Journal of Emerging Markets* (in press). https://doi.org/10.1108/IJOEM-12-2021-1907

Ahmad-Zaluki, N. A., & Wan-Hussin, W. N. (2010). Corporate governance and earnings forecasts accuracy. *Asian Review of Accounting*, *18*(1), 50–67. https://doi.org/10.1108/13217341011046006

Alareeni, B. (2018). Does corporate governance influence earnings management in listed companies in Bahrain Bourse? *Journal of Asia Business Studies*, *12*(4), 551–570. https://doi.org/10.1108/JABS-06-2017-0082.

Alden, H. A., Sukoharsono, & Andayani, W. (2019). The impact of board characteristics on earnings management in the international oil and gas corporations. *Academy of Accounting and Financial Studies Journal*, *23*(1), 1–26.

Alhadab, M., & Nguyen, T. (2018). Corporate diversification and accrual and real earnings management. *Review of Accounting and Finance*, *17*(2), 198–214. https://doi.org/10.1108/raf-06-2016-0098

Al-Haddad, L., & Whittington, M. (2019). The impact of corporate governance mechanisms on real and accrual earnings management practices: Evidence from Jordan. *Corporate Governance*, *19*(6), 1167–1186. https://doi.org/10.1108/CG-05-2018-0183

Alhebri, A. A., Al-Duais, S. D., & Almasawa, A. M. (2021). The influence of independence and compensation of the directors on family firms and real earnings management. *Cogent Economics and Finance*, *9*(1), 1934977. https://doi.org/10.1080/23322039.2021.1934977

Arellano, M., & Bond, S. (1991). Some tests of specification for panel Carlo application to data. *Evidence and an Employment Equations*, *58*(2), 277–297.

Arshad, H., & Javid, A. (2014). *Does inside ownership matters in financial decisions and firm performance: Evidence from manufacturing sector of Pakistan* [Working paper No. 2014:107]. *PIDE-Working Papers. Pakistan Institute of Development Economics*.

Asghar, A., Sajjad, S., Shahzad, A., & Matemilola, B. T. (2020). Role of discretionary earning management in corporate governance-value and corporate governance-risk relationships. *Corporate Governance*, *20*(4), 561–581. https://doi.org/10.1108/CG-11-2019-0347

Bataineh, H., Abuaddous, M., & Alabood, E. (2018). The effect of family ownership and board characteristics on earnings management: Evidence from Jordan. *Academy of Accounting and Financial Studies Journal*, *22*(4), 1–17.

Bisogno, M., & Donatella, P. (2022). Earnings management in public-sector organizations: A structured literature review. *Journal of Public Budgeting, Accounting & Financial Management*, *34*(6), 1–25. https://doi.org/10.1108/JPBAFM-03-2021-0035

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87*(1), 115–143. https://doi.org/10.1016/S0304-4076(98)00009-8

Boujelben, S., & Fedhila, H. (2011). The effects of intangible investments on future OCF. *Journal of Intellectual Capital*, *12*(4), 480–494. https://doi.org/10.1108/14691931111181689

Capalbo, F., Frino, A., Mollica, V., & Palumbo, R. (2014). Accrual-based earnings management in state-owned companies: Implications for transnational accounting regulation. *Accounting, Auditing, and Accountability Journal*, *27*(6), 1026–1040. https://doi.org/10.1108/AAAJ-06-2014-1744

Chan, K. C., Jiang, X., Wu, D., Xu, N., & Zeng, H. (2020). When is the client king? Evidence from affiliated-analyst recommendations in China's split-share reform. *Contemporary Accounting Research,* *37*(2), 1044–1072. https://doi.org/10.1111/1911-3846.12550

Chen, C. (2017). Science mapping: A systematic review of the literature. *Journal of Data and Information Science*, *2*(2), 1–40. https://doi.org/10.1515/jdis-2017-0006

Chi, C. W. H., C., & Tien, L. (2015). Family firms and earnings management in Taiwan: Influence of corporate governance. *International Review of Economics and Finance*, *36*, 88–98. https://doi.org/10.1016/j.iref.2014.11.009

Daghsni, O., Zouhayer, M., & Mbarek, K. B. H. (2016). Earnings management and board characteristics: Evidence from French listed firms. *Arabian Journal of Business and Management Review*, *6*(5), 1–9.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, *19*(3), 269–290. https://doi.org/10.1002/(SICI)1097-0266(199803)19:3<269::AID-SMJ950>3.0.CO;2-K

Dechow, P. M., Kothari, S. P., & Watts, R. L. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, *25*(2), 133–168. https://doi.org/10.1016/S0165-4101(98)00020-2

Dechow, P. M., & Skinner, D. J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons, 14*(2), 235–250. https://doi.org/10.2308/acch.2000.14.2.235

Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, *93*(6), 1155–1177. https://doi.org/10.1086/261354

Donnelly, R., & Lynch, C. (2002). The ownership structure of UK firms and the informativeness of accounting earnings. *Accounting and Business Research*, *32*(4), 245–257. https://doi.org/10.1080/00014788.2002.9728973

El-Chaarani, H. (2013). Exploring the dimensions of emotional intelligence in the Lebanese family firms. *International Journal of Business and Economic Development*, *1*(2), 2–22.

El-Chaarani, H., & El-Abiad, Z. (2019). Exploring the financial dimensions of Lebanese SMEs: Comparative study between family and non-family business. *International Review of Management and Marketing*, *9*(3), 19–30.

El-Chaarani, H., & El-Abiad, Z. (2017). Exploring the impact of Lebanese politic crises on the performance of familyfirms. In *Family Business in the Arab world* (pp. 34–52). Springer. https://doi.org/10.1007/978-3-319-57630-5_8

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy, 88*(2), 288–307.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law & Economics*, *26*(2), 301–325. https://doi.org/10.1086/467037

Feng, Z. Y., & Huang, H. W. (2020). Corporate governance and earnings management: A quantile regression approach. *International Journal of Finance and Economics*, 5056–5072. https://doi.org/10.1002/ijfe.2054

Ferramosca, S., & Allegrini, M. (2018). The complex role of family involvement in earnings management. *Journal of Family Business Strategy*, *9*(2), 128–141. https://doi.org/10.1016/j.jfbs.2018.01.001

Ghosh, A., Marra, A., & Moon, D. (2010). Corporate boards, audit committees, and earnings management: Pre- and post-SOX evidence. *Journal of Business Finance and Accounting*, *37*(9–10), 1145–1176. https://doi.org/10.1111/j.1468-5957.2010.02218.x

Githaiga, P. N., Kabete, P. K., & Bonareri, C. T. (2022). Board characteristics and earnings management. Does firm size matter? *Cogent Business & Management*, *9*(1), 2088573. https://doi.org/10.1080/23311975.2022.2088573

Goel, S., & Kapoor, N. (2022). Is earnings management related to board independence and gender diversity? Sector-wise evidence from India. *International Journal of Disclosure and Governance*, *19*(4), 363–373. https://doi.org/10.1057/s41310-021-00130-4

Gomez-Mejia, L., Cruz, C., & Imperatore, C. (2014). Financial reporting and the protection of socioemotional wealth in family-controlled firms. *European Accounting Review*, *23*(3), 387–402. https://doi.org/10.1080/09638180.2014.944420

Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J. L., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, *52*(1), 106–137. https://doi.org/10.2189/asqu.52.1.106

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1–3), 3–73. https://doi.org/10.1016/j.jacceco.2005.01.002

Greene, W. H. (2000). *Econometric analysis* (4th ed.). MacMillan.

Habib, A., Haris, A., & Jiang, H. (2017). Political connections and related party transactions: Evidence from Indonesia. *The International Journal of Accounting*, *52*(1), 45–63. https://doi.org/10.1016/j.intacc.2017.01.004

Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. *Econometrica*, *50*(4). https://doi.org/10.2307/1912775

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1–3), 405–440. https://doi.org/10.1016/S0165-4101(01)00018-0

Hiranrithikorn, P., & Joemsittiprasert, W. (2019). Family-owned firms and earning quality. *International Journal of Innovation, Creativity, and Change*, *6*(11), 59–72.

Hosseini, M. R., Martek, I., Zavadskas, E. K., Aibinu, A. A., Arashpour, M., & Chileshe, N. (2018). Critical evaluation of off-site construction research: A scientometric analysis. *Automation in Construction*, *87*, 235–247. https://doi.org/10.1016/j.autcon.2017.12.002

Jadoon, I., Noreen, U., Ayub, U., Tahir, M., & Shahzadi, N. (2021). The impact of family ownership on quality and disclosure of internal control in Pakistan. *Sustainability*, *13*(16), 8755. https://doi.org/10.3390/su13168755

Jamaludin, N. D., Sanusi, Z. M., & Kamaluddin, A. (2015). Board structure and earnings management in Malaysian government-linked companies. *Procedia Economics and Finance*, *28*, 235–242. https://doi.org/10.1016/S2212-5671(15)01105-3

Jennings, M. (2012). *Business ethics: Case studies and selected readings*. Cengage Learning.

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, *48*(3), 831–880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Jiang, F., & Kim, K. A. (2020). Corporate governance in China: A survey. *Review of Finance*, *24*(4), 733–772. https://doi.org/10.1093/ROF/RFAA012

Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, *29*(2), 193. https://doi.org/10.2307/2491047

Kang, S. A., & Kim, Y. S. (2012). Effect of corporate governance on real activity-based earnings management: Evidence from Korea. *Journal of Business Economics and Management*, *13*(1), 29–52. https://doi.org/10.3846/16111699.2011.620164

Kervin, J. B. (1992). *Methods for business research*. Harper Collins Publishers.

Khan, F. M. (2018). The criminal justice response to and the current situation of high-profile corruption in Pakistan. *Resource Material Series*, *110*(II), 139–149.

Khatib, S. F. A., Abdullah, D., Hendrawaty, E., & Elamer, A. A. (2021). A bibliometric analysis of cash holdings literature: Current status, development, and agenda for future research. *Management Review Quarterly*, *72*(3), 707–744. https://doi.org/10.1007/s11301-021-00213-0

Kiernan, M. (2005). Corporate social responsibility – The investor's perspective. In J. Hancock (Ed.), *Investing in corporate social responsibility*. Kogan Page.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics. North-Holland*, *33*(3), 375–400. https://doi.org/10.1016/S0165-4101(02)00059-9

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, *39*(1), 163–197. https://doi.org/10.1016/j.jacceco.2004.11.002

Kumar, P., & Zattoni, A. (2018). Corporate governance, boards of directors, and firm performance: Avenues for future research. *Corporate Governance: An International Review*, *26*(6), 394–396.

Li, Z., Xu, C., Zhang, H., Rasool, S. F., & Fareed, Z. (2022). Exploring the relationship between takeover market and enterprise innovation: The mediating role of internal governance. *Journal of Innovation & Knowledge*, *7*(3), 100205. https://doi.org/10.1016/j.jik.2022.100205

Liu, H., & Fong, M. W. L. (2010). Board characteristics of medium and large Chinese companies. *Corporate Governance: The International Journal of Business in Society*, *10*(2), 163–175. https://doi.org/10.1108/14720701011035684

Mangel, R., & Singh, H. (1993). Ownership structure, board relationships and CEO compensation in large US corporations. *Accounting and Business Research*, *23*(sup1), 339–350. https://doi.org/10.1080/00014788.1993.9729902

Martin, G., Campbell, J. T., & Gomez-Mejia, L. (2016). Family control, socioemotional wealth and earnings management in publicly traded firms. *Journal of Business Ethics*, *133*(3), 453–469. https://doi.org/10.1007/s10551-014-2403-5

Massis, A., & Foss, N. J. (2018). Advancing family business research: The promise of microfoundations. *Family Business Review*, *31*(4), 386–396. https://doi.org/10.1177/0894486518803422

Myers, R. H. (1990). *Classical and modern regression with applications*. Scientific Research Publishing.

Nazir, M. S. (2015). Real earnings management and future performance. *Global*

Business Review, *16*(1), 21–34. https://doi.org/10.1177/0972150914553505

Nazir, M. S., & Afza, T. (2018). Does managerial behavior of managing earnings mitigate the relationship between corporate governance and firm value? Evidence from an emerging market. *Future Business Journal*, *4*(1), 139–156. https://doi.org/10.1016/j.fbj.2018.03.001

Parfet, W. (2000). Accounting subjectivity and earnings management: A preparer perspective. *American Accounting Association. Accounting Horizons*, *14*(4), 481–488. https://doi.org/10.2308/acch.2000.14.4.481

Pearce, J. A., & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, *29*(4), 411–438. https://doi.org/10.1111/j.1467-6486.1992.tb00672.x

Peasnell, K. V., Pope, P. F., & Young, S. (2005). Board monitoring and earnings management: Do outside directors influence abnormal accruals? *Journal of Business Finance and Accounting*, *32*(7–8), 1311–1346. https://doi.org/10.1111/j.0306-686X.2005.00630.x

Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *The Review of Financial Studies*, *22*(1), 435–480. https://doi.org/10.1093/rfs/hhn053

Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, *54*(2), 471–517. https://doi.org/10.1111/0022-1082.00115

Rahman, R. A., & Mohamed Ali, F. H. (2006). Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal*, *21*(7), 783–804. https://doi.org/10.1108/02686900610680549

Rankin, M., Ferlauto, K., McGowan, S., & McGowan, P. (2017). *Contemporary issues in accounting* (2nd ed.). Wiley & Sons.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, *42*(3), 335–370. https://doi.org/10.1016/j.jacceco.2006.01.002

Sáenz González, J., & García-Meca, E. (2014). Does corporate governance influence earnings management in Latin American markets? *Journal of Business Ethics*, *121*(3), 419–440. https://doi.org/10.1007/s10551-013-1700-8

Sargan, J. D. (1985). Professor J. D. Sargan. *Econometric Theory*, *1*(1), 119–139. https://doi.org/10.1017/S0266466600011038

Sarkar, J., Sarkar, S., & Sen, K. (2008). Board of directors and opportunistic earnings management: Evidence from India. *Journal of Accounting, Auditing, and Finance*, *23*(4), 517–551. https://doi.org/10.1177/0148558X0802300405

Shah, S. F., Rashid, A., & Malik, W. S. (2020). Potential substitution between accrual earnings management and real earnings management among Pakistani listed firms. *Global Business Review*, 097215092095761. https://doi.org/10.1177/0972150920957617

Shehata, N. F. (2015). Development of corporate governance codes in the GCC: An overview. *Corporate Governance*, *15*(3), 315–338. https://doi.org/10.1108/CG-11-2013-0124

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, *52*(2), 737–783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x

Talbi, D., Omri, M. A., Guesmi, K., & Ftiti, Z. (2015). The role of board characteristics in mitigating management opportunism: The case of real earnings management. *Journal of Applied Business Research*, *31*(2), 661–674. https://doi.org/10.19030/jabr.v31i2.9147

Tomaskova, A., Smietanski, R., & Halouzka, M. (2021). The interdependency between a family company's name and a family name. *Marketing and Management of Innovations*, *2*, 115–132. https://doi.org/10.21272/mmi.2021.2-10

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, *20*(C), 431–460. https://doi.org/10.1016/0304-405X(88)90053-0

Yahaya, I. S., Amat, A., Maryam, S., Khatib, S. F. A., & Sabo, A. U. (2020). Bibliometric analysis trend on business model innovation. *Journal of Critical Reviews*, *7*(09), 2391–2407.

Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, *87*(2), 675–703. https://doi.org/10.2308/accr-10196

Zhao, X., Zuo, J., Wu, G., & Huang, C. (2019). A bibliometric review of green building research 2000–2016. *Architectural Science Review*, *62*(1), 74–88. https://doi.org/10.1080/00038628.2018.1485548

Zheng, C., & Kouwenberg, R. (2019). A bibliometric review of global research on corporate governance and board attributes. *Sustainability*, *11*(12), 3428. https://doi.org/10.3390/su11123428