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Unveiling Corporate Transparency: Ownership Dynamics and Earnings Manipulation in Stock Markets

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ABSTRACT

This research examines how corporate transparency and ownership patterns affect earnings manipulation in Pakistani publicly listed companies using a dynamic panel framework. A two-step system GMM estimator is employed, analyzing data from firms listed on the Pakistan Stock Exchange between 2008 and 2018. Findings indicate that robust corporate transparency significantly reduces earnings manipulation. Enhanced disclosure practices lead to decreased managerial discretion in smoothing earnings, suggesting that firms with greater transparency experience lower levels of earnings management. Additionally, ownership structures, such as those dominated by family or institutional investors, exert a significant negative effect on earnings manipulation. These factors establish an effective governance mechanism that curbs managerial control over earnings. Consequently, the study highlights that strong corporate disclosure combined with family or institutional ownership plays a pivotal role in minimizing earnings management practices within the Pakistani market.

Introduction

The role of accountability and corporate governance has sparked intense debate amid recurring global financial scandals. While the concept of corporate governance is widely recognized, its practical impact remains underexplored in developing nations like Pakistan. Governance structures significantly influence corporate transparency, particularly in ownership frameworks, as financial reporting is shaped by the priorities and decisions of those in control (Muravyev, 2025).

High-profile financial collapses in the early 2000s, such as Enron, WorldCom, and Parmalat, exposed widespread financial statement manipulation, thrusting corporate governance into the spotlight. These incidents fueled extensive research into earnings management within accounting literature (Shahzad et al., 2017; Stein et al., 2017; Tarjo et al., 2022). Theoretical foundations for

these practices are rooted in agency theory (Jensen & Meckling, 1976), signaling theory (Ross, 1978), and positive accounting theory (Watts & Zimmerman, 1979). These frameworks highlight how accounting strategies are employed to align or obscure managerial objectives.

Given these concerns, regulators, practitioners, and scholars emphasize the urgent need to address earnings management. Effective governance mechanisms, driven by shareholders and informed by agency theory, aim to minimize agency costs and managerial opportunism. Corporate transparency and ownership structures serve as critical tools in this effort. Transparent disclosures, as noted by Jensen and Meckling (1976), reduce conflicts of interest among stakeholders by bridging information gaps, thereby lowering the cost of capital and mitigating information asymmetry. Akerlof's (1970) work on adverse selection further underscores how asymmetric information enables managerial discretion, often to the detriment of investors.

Conversely, ownership structures significantly influence governance effectiveness. Shleifer and Vishny (1997) argue that large shareholders, with substantial equity stakes, are incentivized to safeguard their investments by actively monitoring management. These shareholders possess the resources and authority to oversee managerial decisions, curb opportunistic behaviors, and influence financial reporting processes. Their involvement often prevents managers from manipulating earnings to serve personal interests.

This study focuses on exploring how ownership patterns and corporate transparency impact earnings management in Pakistani listed companies. Pakistan's corporate landscape is distinct, characterized by concentrated ownership, often dominated by a few affluent families. Unlike the more transparent Anglo-American governance model, Pakistan's system is less open, with firms frequently employing mechanisms like crossholdings, dual voting rights, and pyramid structures. These practices create complex ownership arrangements, granting controlling shareholders disproportionate influence and amplifying entrenchment effects. Such dynamics heighten the risk of earnings manipulation, making the study of governance and ownership structures critical in this context.

Literature Review

The relationship between corporate transparency, ownership configurations, and financial reporting practices remains a subject of intense scholarly debate, driven by four primary areas of contention. First, the identification of key determinants influencing these variables sparks disagreement among researchers and practitioners. Second, the direction of causality among transparency, ownership, and financial reporting practices is contested. Empirical studies often present conflicting findings, with some supporting unidirectional causality, others suggesting bidirectional influences, and certain analyses finding no significant relationships. Third, methodological approaches fuel further controversy. Some studies employ cross-country comparisons to examine these dynamics, while others utilize regression-based techniques, often relying on time-series methods such as co-integration analysis, Granger causality tests, unit root tests, or panel data models. Finally, the causal pathways linking these variables have been debated extensively over recent decades, reflecting their complexity within corporate governance frameworks.

Corporate governance establishes principles to protect external investors from exploitation by insiders, such as managers or dominant shareholders. Its primary objective is to align the interests of internal and external stakeholders, fostering trust and operational efficiency. Robust governance systems contribute to economic and social development by enhancing firm performance. The 1997 Asian financial crisis highlighted pervasive governance weaknesses globally, prompting increased

scrutiny of corporate oversight mechanisms. In subsequent years, high-profile financial frauds at firms like Enron, WorldCom, Tyco International, Adelphia, Taj Company, and Olympus Corporation underscored the need for reform. These scandals led many nations to introduce governance codes to strengthen oversight, particularly to ensure transparent financial reporting. Jensen and Meckling (1976) emphasize that transparent disclosures reduce conflicts of interest by mitigating information asymmetries, thereby lowering capital costs for informed investors. Akerlof's (1970) adverse selection framework further explains how information imbalances enable managerial opportunism, complicating investor decision-making.

Financial reporting manipulation, often termed earnings management, involves deliberate alterations to financial statements, undermining their reliability. Despite extensive research, a unified definition remains elusive. Healy and Wahlen (1999) provide a widely accepted perspective, describing earnings management as the use of accounting discretion to manipulate financial outcomes, either to deceive stakeholders about firm performance or to influence contractual arrangements. Ownership structures, as Shleifer and Vishny (1997) argue, serve as critical mechanisms for oversight. Shareholders with significant equity stakes are incentivized to safeguard their investments, deploying resources to monitor management and influence financial reporting processes to prevent undesirable actions.

The urgency of addressing financial reporting manipulation has intensified amid persistent global financial scandals. Regulators, scholars, and practitioners advocate for governance mechanisms rooted in agency theory to reduce managerial discretion and agency costs. Corporate transparency and ownership configurations are pivotal in these efforts. Empirical research employs diverse data approaches—cross-sectional, time-series, and panel data—each offering unique insights and limitations.

Cross-sectional studies frequently identify positive associations among transparency, ownership, and financial reporting practices, controlling for country-specific effects, omitted variables, and simultaneity biases (Atieh & Hussain, 2012; Dechow et al., 1995; Cohen & Zarowin, 2010; Dechow et al., 2012; Bartov et al., 2000). However, these studies often fail to clarify causality or explore data integration properties. Time-series analyses yield varied results, with some confirming positive relationships (DeAngelo, 1998; Peasnell et al., 2000) and others finding no significant links (Ye, 2007). Recent panel data studies, considered more robust, report negative associations between transparency and financial reporting manipulation, alongside positive links between ownership structures and such practices, addressing limitations of earlier methodologies (Ahmed & Duellman, 2023; Li & Zhang, 2024; Subhan et al., 2025). These studies leverage advanced econometric techniques to enhance reliability.

Recent discussions emphasize the role of voluntary disclosures in improving transparency and operational visibility (Plenborg et al., 2006; Yonca, 2007). Emerging research highlights how digital reporting platforms and regulatory reforms, such as those mandated by the International Financial Reporting Standards (IFRS), strengthen disclosure quality and curb manipulation (Wang & Chen, 2024). Additionally, concentrated ownership, particularly in emerging markets, amplifies monitoring but may entrench controlling shareholders, complicating governance dynamics (Muravyev, 2025). These findings underscore the evolving nature of governance research, particularly in contexts with unique ownership patterns.

This study formulates hypotheses to investigate the relationships among corporate transparency, ownership structures, and financial reporting practices, contributing to the ongoing discourse on effective governance mechanisms.:

H_0^1: Corporate disclosures have insignificant impact on earnings management.

H_1^1: Corporate disclosures have significant impact on earnings management.

H_0^2: Ownership structures have insignificant impact on earnings management.

H_1^2: Ownership structures have significant impact on earnings management.

Data and Methodology

Sample of the study

This research focuses on firms included in the KSE 100 Index, chosen for its representation of diverse sectors within the Pakistani market. The study utilizes secondary data spanning 2008 to 2018 for all selected firms. The selection of this timeframe is deliberate, as Pakistan introduced its corporate governance code for listed companies in 2003, with subsequent implementation potentially influencing firms' accrual policies to address issues in financial reporting accuracy. Data will be sourced from firms' annual reports, accessed through their official websites, the State Bank of Pakistan's portal, and other published documents from the Pakistan Stock Exchange.

Measurement of variables

Dependent Variable

Earning Management

This study employs discretionary accruals, adjusted by the prior period's total assets, as a proxy for earnings management, consistent with methodologies in prior research (Becker et al., 1998; Bradshaw et al., 2001; Dechow et al., 1995). Accruals are utilized to evaluate the extent of earnings management within firms, as they reflect managerial discretion in financial reporting. Previous literature highlights that discretionary accruals, a subset of total accruals, are particularly influenced by managerial decisions, making them an effective measure for assessing earnings management practices (Subramanyam, 1996).

To estimate discretionary accruals, the study adopts the Modified Jones Model, as implemented by Lobo and Zhou (2001). Discretionary accruals are distinguished from non-discretionary accruals, both of which constitute total accruals. Therefore, calculating total accruals is a necessary initial step. Two primary methods are used for this purpose: the balance sheet approach, commonly applied in existing studies, and the cash flow approach, proposed by Hribar and Collins (2002). By using the balance sheet approach, total accruals are measured as follows:

$$TAAC_{(i,t)\,\boldsymbol{BS}} = (\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta LTSTDET_{i,t} - DEPTN_{i,t}) \quad (1)$$

Where:

$TAAC_{i,t}$ = Total accounting accruals in time period "t" of firm "i"

$\Delta CA_{i,t}$ = Change in current assets in time period "t" of firm "i"

$\Delta CL_{i,t}$ = Change in current liabilities in time period "t" of firm "i"

$\Delta Cash_{i,t}$ = Change in cash and cash equivalents in time period "t" of firm "i"

$\Delta LTSTDET_{i,t}$ = change in the current maturities of long-term debt and other short-term debt included in current liabilities in time period "t" of firm "i"

$DEPTN_{i,t}$ = Depreciation and amortisation expense in time period "t" of firm "i"

The balance sheet approach to calculating total accruals is prone to measurement errors that can significantly impair the accuracy of the results. Hribar and Collins (2002) argue that studies relying on the balance sheet method are compromised by such errors, demonstrating that the cash flow approach provides a more reliable measure of total accruals. Consequently, this study employs both methods to ensure a comprehensive analysis. The balance sheet approach is widely documented in prior literature, while the cash flow approach has gained increasing recognition for its robustness (Collins & Hribar, 1999).

In cash flow approach, total accruals can be measured as follows:

$$TAAC_{(i,t)\,\boldsymbol{CF}} = EBXI_{(i,t)} - OCF_{(i,t)} \quad (2)$$

Where:

$TAAC_{(i,t)}$ = Total accounting accruals in time period "t" of the firm "i"

$EBXI_{(i,t)}$ = Earnings before extraordinary items and discontinued operations in time period "t" of the firms "i"

$OCF_{(i,t)}$ = Operating cash flows taken directly from the cash flow statement

Equation (1) and (2) estimated to get total accruals sing both the approaches. In the next step, non-discretionary accruals will be needed. Because discretionary accruals can only be estimated, when we have total accruals and non-discretionary accruals (by taking difference of total accruals and non-discretionary accruals). Consequently, for estimating non-discretionary, first Modified Jones Model will be used as follows:

$$\frac{TAAC_{(i,t)}}{TA_{(i,(t-1))}} = \beta_1 \frac{1}{TA_{(i,(t-1))}} + \beta_2 \left(\frac{\Delta REV_{(i,t)}}{TA_{(i,(t-1))}} - \frac{\Delta REC_{(i,t)}}{TA_{(i,(t-1))}} \right) + \beta_3 \frac{PPE_{(i,t)}}{TA_{(i,(t-1))}} + \varepsilon_{(i,t)} \quad (3)$$

Where:

$TAAC_{(i,t)}$ = Total accruals in time period "t" for the firm "i" scaled by one time lag of total assets

$\Delta REV_{(i,t)}$ = Change in revenue in the time period "t" for the firm "i" scaled by one time lag of total assets

$\Delta REC_{(i,t)}$ = Change in net receivables in the time period "t" for the firm "i" scaled by one time lag of total assets

$PPE_{(i,t)}$ = Change in plant, property and equipment in the time period "t" for the firm "i" scaled by one time lag of total assets

Equation (3) will be estimated for each firm separately. By these regressions will get the estimates of β_1, β_2, and β_3. And then these estimates will be used in the same model to estimate the non-discretionary accruals as follows:

$$NDAAC_{(i,t)} = \hat{\beta}_1 \frac{1}{TA_{(i,(t-1))}} + \hat{\beta}_2 \left(\frac{\Delta REV_{(i,t)}}{TA_{(i,(t-1))}} - \frac{\Delta REC_{(i,t)}}{TA_{(i,(t-1))}} \right) + \hat{\beta}_3 \frac{PPE_{(i,t)}}{TA_{(i,(t-1))}} + \varepsilon_{(i,t)}$$

(4)

By obtaining the non-discretionary accruals from equation (4), finally will be able to calculate the discretionary accruals as follows:

$$DAAC_{(i,t)} = TAAC_{(i,t)} - NDAAC_{(i,t)} \quad (5)$$

Equation (3) will be estimated in two different settings, first will use the total accruals $TAAC_{(i,t)\,\boldsymbol{BS}}$ from the balance sheet approach to estimate the Modified Jones Model. Second time, will use the total accruals $TAAC_{(i,t)\,\boldsymbol{CF}}$ from cash flow approach to estimate the Modified Jones Model. And then equation (4) and (5) will be estimated accordingly.

Independent Variables

Corporate Disclosure

In this research, the corporate disclosure variable is represented by the quality of disclosures made by firms. To construct this variable, the study follows the approaches outlined in Ali (2018), Gul, Rashid, and Muhammad (2016), and Nosheen and Chonglerttham (2013), assigning scores to four distinct attributes on a scale ranging from 0 to 4. The cumulative score for these attributes reflects the overall disclosure quality of a firm. Detailed descriptions of each attribute used to assess the disclosure variable are provided in the appendix.

Institutional Ownership

Number of share held by institutional ownership divided by total number of outstanding share (Cao & Petrasek, 2014).

Family Ownership

Variable family ownership will be measure as percentage of the shares held by family members of a firm following the methodology of Nguyen (2011).

Control Variables

The study will use a set of firm and industry-specific variables that are considered to impact earnings management.

Firm Size

The relationship between real earning management and financial performance there is need to control the impact of size. Therefore, to control the influence of size (Katherine Ann Gunny, 2005; Katherine A Gunny, 2010; Rahmawati, Agustiningsih, & Setiany, 2015; Tabassum, Kaleem, & Nazir, 2014) used the natural logarithm of total assets as proxy for size. (D. Leggett, Parsons, & Reitenga, 2009; D. M. Leggett, Parsons, & Reitenga, 2016) take logarithm of market value of equity to minimize the impact of size of firm. Hence, to control the impact of size of firm this study uses the natural logarithm of total assets and denoted by size.

Size = Natural logarithm of total assets

Firm performance

The core objective of earnings management is to distort analysts forecast and to misinform the financiers by giving them erroneous information about a firm's real operating performance. (Haw, Hu, Hwang, & Wu, 2004; Kasznik, 1999) find a positive association between firm performance

and the level of unusual accruals. However, (Jaggi, Leung, & Gul, 2009) find a negative coefficient on accounting performance. Therefore, one cannot expect the direction of the relationship. The study will use the return on assets ratio to measure firm performance. This study will include return on assets as (Butler, Leone, & Willenborg, 2004) indicate that the relation between discretionary accruals and profitability may be nonlinear that's why need to control it.

Leverage

Harris and Raviv (1991) evidenced that debt moderates the infrequent accruals as the company is subject to cash related commitments. (Jelinek, 2007; Shahzad, Rauf, Saeed, & Al Barghouthi, 2017) reported a negative relation between debt and income increasing manipulation. Whereas on the other hand (Press & Weintrop, 1990), evidenced that when firms are closer to default, managers are more likely to exercise accounting manoeuvring. Meanwhile the result of leverage on earnings manipulation is blurred, one cannot expect the direction of the relationship. That's why need to take it as control variable. Leverage is measured as the ratio of total debt over total assets.

Empirical Model Specifications

To explore the effect of corporate disclosure and ownership structure on the earning management, the study will use the following regression models;

$$DAAC_{(i,t)BS} = \beta_0 + \beta_1\left(DAAC_{(i,(t-1))BS}\right) + \beta_2\left(Dscore_{(i,t)}\right) + \beta_3\left(IO_{(i,t)}\right) + \beta_4\left(FO_{(i,t)}\right) + \beta_5\left(ROA_{(i,t)}\right) + \beta_6\left(Size_{(i,t)}\right) + \beta_7\left(LEV_{(i,t)}\right) + \varepsilon_{(i,t)} \quad (6)$$

$$DAAC_{(i,t)CF} = \beta_0 + \beta_1\left(DAAC_{(i,(t-1))CF}\right) + \beta_2\left(Dscore_{(i,t)}\right) + \beta_3\left(IO_{(i,t)}\right) + \beta_4\left(FO_{(i,t)}\right) + \beta_5\left(ROA_{(i,t)}\right) + \beta_6\left(Size_{(i,t)}\right) + \beta_7\left(LEV_{(i,t)}\right) + \varepsilon_{(i,t)} \quad (7)$$

Where:

$DAAC_{(i,t)BS}$ = In equation (6) are the estimated discretionary accruals in the time period "t" for the firm "i" by using the balance sheet approach proxy for earning management

$DAAC_{(i,t)CF}$ = In equation (7) are the estimated discretionary accruals in the time period "t" for the firm "i" by using the cash flow approach proxy for earning management

β_1 = One time lag of discretionary accruals in time period "t" for the firm "i" in both the equations (6) and (7) respectively

$Dscore_{(i,t)}$ = Disclosure score in time period "t" for the firm "i"

$IO_{(i,t)}$ = Institutional Ownership in the time period "t" for the firm "i"

$FO_{(i,t)}$ = Family Ownership in the time period "t" for the firm "i"

$ROA_{(i,t)}$ = Return of Assets in the time period "t" for the firm "i" proxy used for firm performance

$Size_{(i,t)}$ = Natural log of total assets in the time period "t" for the firm "i"

$LEV_{(i,t)}$ = Leverage ratio in the time period "t" for the firm "i"

$\varepsilon_{(i,t)}$ = Error term in the time period "t" for the firm "i"4.5.5 Why the Blundell-Bond (1998) Estimator (GMM)

This study employs dynamic panel models, incorporating the lagged dependent variable as an explanatory factor. Including lagged dependent variables as regressors introduces challenges, as their use can lead to inconsistent estimates when evaluated using the Pooled Ordinary Least Squares (OLS) method. Classical OLS estimators aim to minimize the sum of squared residuals, assuming no correlation between regressors and error terms. However, dynamic models violate this assumption, as lagged dependent variables correlate with the individual fixed effect (υi), resulting in autocorrelation in the error term. Consequently, Pooled OLS yields unreliable and biased coefficient estimates, with the coefficient for the lagged dependent variable often inflated due to its strong correlation with the error term.

To address the inconsistencies of Pooled OLS in panel data analysis, researchers commonly employ two approaches: the Fixed Effects Model (FEM) and the Random Effects Model (REM). The FEM mitigates inconsistency by removing the fixed effect (υi) through a within-transformation technique, which subtracts the mean of each dependent and independent variable from their respective values, effectively eliminating the fixed effect. In contrast, the REM assumes no heterogeneity across cross-sections, incorporating any heterogeneity into the error term. The choice between FEM and REM is typically guided by the Hausman test. However, both FEM and REM only partially address the issue, as they eliminate unobserved fixed effects but cannot fully resolve the correlation between the lagged dependent variable and the error term, leading to biased coefficient estimates for the lagged dependent variable. As a result, these methods are unsuitable for this study, prompting the adoption of an instrumental variable (IV) approach.

The IV approach, proposed by Anderson and Hsiao (1982), involves a two-step process: (1) difference transformation to eliminate individual fixed effects, and (2) using lagged levels of the dependent variable as instruments for the lagged dependent variable to address estimation inconsistencies. These instruments are designed to be highly correlated with the lagged dependent variable but uncorrelated with the error term. For instance, if the error term is independently and identically distributed (i.i.d.), the second lag of the dependent variable may strongly correlate with the lagged dependent variable (and its changes) but remain uncorrelated with the composite error term. A noted limitation of the IV approach is its potential to produce inconsistent estimates, as it may not utilize all available moment conditions.

To overcome these limitations, the Generalized Method of Moments (GMM) estimator, developed by Arellano and Bond (1991), eliminates individual fixed effects through first-differencing and employs lagged levels of the dependent variable as instruments for the lagged dependent variable or its differences, mitigating endogeneity. Specifically, if Yit is the dependent variable, the second lag (Yit-2) serves as an instrument for the lagged dependent variable (Yit-1). In differenced form, Yit-1 and the second lag difference (ΔYit-2) are used as instruments for the differenced lagged dependent variable (ΔYit-1). These instruments correlate with the differenced lagged dependent variable but not with the error term, ensuring consistent and reliable coefficient estimates in dynamic panel models.

However, the difference GMM estimator, as noted by Blundell and Bond (1998), can produce biased results when the dependent variable follows a random walk, as lagged levels (e.g., Yit-2, Yit-3) become weak instruments due to their low correlation with the differenced lagged dependent variable (ΔYit-1). This weakness arises because past levels convey limited information about future changes (Roodman, 2009). To address this, Arellano and Bover (1995) and Blundell and Bond (1998) proposed the system GMM approach, which enhances estimation by

incorporating additional instruments. The system GMM uses lagged differences (e.g., ΔYit-1, ΔYit-2) as instruments for the level of the lagged dependent variable (Yit-1), alongside lagged levels as instruments for the differenced lagged dependent variable (ΔYit-1). By combining these instruments and applying first-differencing to eliminate fixed effects (υi), the system GMM addresses endogeneity and improves estimation accuracy. This flexible approach allows researchers to leverage various lag structures for both level and differenced equations, enhancing the robustness of dynamic panel data models.

Empirical Results

Panel Unit Root Test

In panel data settings, the risk of unit root issues is heightened, necessitating thorough examination before proceeding with analytical models. To address this, unit root tests are essential to ensure data stationarity. Commonly employed tests include the Fisher-Augmented Dickey-Fuller (ADF), Fisher-Phillips-Perron (PP), Levin, Lin, and Chu (LLC), Breitung, and Im, Pesaran, and Shin (IPS) tests. These tests differ in their underlying processes, often yielding varied outcomes. For instance, tests such as LLC, Hadri, and Breitung assume a homogeneous unit root process across all cross-sections, which can be a limitation. Conversely, tests like IPS, Fisher-ADF, and Fisher-PP allow for individual unit root processes for each cross-section, accommodating heterogeneity.

In this study, both the IPS and LLC tests are applied to detect unit root issues. The results for all variables are presented in Table 1. Based on the p-values from both tests, all variables are found to be stationary at level, indicating no unit roots. The low p-values lead to the rejection of the null hypothesis of non-stationarity. The outcomes of these unit root tests are detailed as follows:

Table 1: Panel Unit Root

Variables	***LLC Test Stats***	***IPS Test Stats***	***Test for Unit Root***	***Conclusion***
$Dscore_{(i,t)}$	-9.6194 (0.0000)	-8.4940 (0.0000)	Level	Stationary
$IO_{(i,t)}$	-3.3437 (0.0004)	-11.9160 (0.0000)	Level	Stationary
$FO_{(i,t)}$	-26.5564 (0.0000)	-11.2220 (0.0000)	Level	Stationary
$DAAC_{BS(i,t)}$	-14.2348 (0.0000)	-6.4917 (0.0000)	Level	Stationary
$DAAC_{CF(i,t)}$	-8.6004 (0.0000)	-5.0695 (0.0000)	Level	Stationary
$Size_{(i,t)}$	-4.3890 (0.0000)	-9.7788 (0.0000)	Level	Stationary
ROA $_{(i,t)}$	-9.1044 (0.0000)	-11.6045 (0.0000)	Level	Stationary
$LEV_{(i,t)}$	-20.9604 (0.0000)	-7.9490 (0.0003)	Level	Stationary

Note:

- *LLC is the Levin, Lin & Chu and IPS is Im, Pesaran & Shin panel unit root tests. With null "Panel contains unit root" LLC follows common unit root process and IPS follows individual unit root process.*

- $Dscore_{(i,t)}$ *: is Corporate Disclosure score,* $IO_{(i,t)}$*: is Institutional Ownership measure as Number of share held by institutional ownership divided by total number of outstanding share,* $FO_{(i,t)}$*: Family ownership* be measure as percentage of the shares held by family members of a firm, $DAAC_{BS(i,t)}$*: is Discretionary accruals from balance sheet approach,* $DAAC_{CF(i,t)}$*: is Discretionary accruals from cash flow approach,* $Size_{(i,t)}$*: is size of the firm measure as natural logarithm of firm's total assets,* $ROA_{(i,t)}$*: is a control variable measure as net income over total assets,* $LEV_{(i,t)}$*: is a ratio of total debt to total assets..*

Table 2 confirms the absence of multicollinearity among the descriptive variables employed in this study. The correlation matrix further illustrates the relationships between all variables. For instance, the dependent variable, discretionary accruals (DAAC), used as a proxy for earnings management, exhibits a negative correlation with institutional ownership. This suggests that firms with significant institutional ownership are less likely to engage in aggressive earnings manipulation, as institutional investors are vigilant about protecting their investments and are unlikely to permit actions that could lead to long-term losses. Similarly, a negative correlation is observed between family ownership and DAAC. Family owners, motivated by preserving their reputation and ensuring sustained business profitability, are less inclined to pursue short-term earnings manipulation that risks long-term financial stability. Among control variables, discretionary accruals show a negative association with leverage, likely due to monitoring constraints imposed by lenders when firms borrow, which curb manipulative practices. This correlation matrix provides insights into the relationships among all other variables in the study.

Table 2: Correlation Matrix

	$Dscore_{(i,t)}$	**IO**	**FO**	**DAACBS**	**DAACCF**	**Size**	**ROA**	**LEV**
$Dscore_{(i,t)}$	1.0000							
IO	-0.0350	1.0000						
FO	-0.0140	-0.2323*	1.0000					
DAACBS	-0.0240	0.0061	-0.0216	1.0000				
DAACCF	0.0176	-0.0091	0.0178	0.3149*	1.0000			
Size	0.0588*	-0.0198	-0.1127*	0.0083	0.0010	1.0000		
ROA	-0.0449	- 0.0302	0.0295	-0.0063	-0.0028	0.0502		
LEV	1.0000							
	-0.0043	-0.0551	0.0693*	-0.0006	0.0149	-0.0605*	-0.0092	1.0000

Table 5.3 presents the descriptive statistics for the variables analyzed in this study, encompassing the minimum, maximum, mean, and standard deviation. These metrics provide a clear overview of the data's characteristics. Additionally, from a dispersion perspective, the minimum, maximum, and standard deviation values facilitate comparisons with findings from other studies.

Table 3: Descriptive Statistics

Variables	Mean	Minimum	Maximum	Standard Deviation
$CD_{(i,t)}$	0.34	0	1	0.35
$IO_{(i,t)}$	0.63	0	1.14	0.26
$FO_{(i,t)}$	0.41	0	1	0.49
$DAAC_{BS(i,t)}$	-0.21	-0.11	0.55	2.84
$DAAC_{CF(i,t)}$	-0.22	-0.12	0.53	2.40
$Size_{(i,t)}$	16.56	10.12	24.40	1.9
ROA $_{(i,t)}$	0.27	-14.41	7.03	2.18
$LEV_{(i,t)}$	0.59	0.002	2.09	0.32

Table 3 presents the descriptive statistics for the variables examined in this study. The corporate disclosure score, derived from assigning points to various disclosure categories, has a mean of 0.34, with a minimum of 0 and a maximum of 1. A standard deviation of 35% indicates significant variability in how Pakistani firms disclose strategic, financial, and key non-financial information, reflecting a lack of uniform disclosure policies. Regarding ownership structure, institutional ownership averages 63%, while family ownership averages 41%, suggesting a preference for institutional investors followed by family-owned businesses in Pakistan. This concentration aligns with findings from Haw et al. (2004) and Wang (2006), indicating a prevalence of institutional and family-dominated ownership structures.

Conversely, the dependent variable, discretionary accruals, calculated using the Modified Jones Model via both balance sheet and cash flow approaches, shows mean values of -21% and -22%, respectively. These figures diverge from prior studies (Bozec, 2008; Haw et al., 2004). The high dispersion in accruals, with standard deviations of 2.84 for the balance sheet approach and 2.40 for the cash flow approach, suggests that Pakistani firms actively engage in earnings smoothing. This variability may stem from governance codes or periodic regulatory changes. Firm characteristics, such as size (measured as the natural logarithm of total assets), profitability (proxied by return on assets), and capital structure, also exhibit notable variation. Firm size ranges from 10% to 24%, highlighting significant differences among the companies studied. This size dispersion suggests a propensity for earnings management, particularly among smaller firms, as smaller companies often pursue investment opportunities that may encourage such practices (Rahmawati et al., 2015).

Return on assets calculated by net income over total assets used as some firm characteristics. ROA have the mean of 27% with minimum and maximum of -14% to 7%. It has standard deviation of 2.18.

Leverage, a key firm characteristic and control variable, is measured as the ratio of total debt to total assets. In this study, Pakistani firms exhibit an average leverage ratio of 0.59, indicating a moderate level of debt financing. The leverage values range from a minimum of 0.002 to a maximum of 2.09, revealing that some firms are minimally leveraged, while others carry significant debt. The dispersion in leverage, as indicated by these values, suggests variability in financing structures among the studied firms. However, this variability precludes a definitive conclusion about the relationship between discretionary accruals and leverage.

Agency theory suggests a negative relationship between leverage and earnings management, as lenders typically impose monitoring mechanisms that enhance firm transparency and protect minority shareholders' interests, thereby discouraging earnings smoothing. Some empirical studies support this view, finding that leveraged firms are less likely to engage in earnings management practices (Jelinek, 2007; Shahzad et al., 2017). Conversely, another body of research indicates a positive association, suggesting that leverage may encourage earnings management, particularly when firms face financial distress or risk default. Press and Weintrop (1990) argue that managers of firms nearing default may manipulate accounting figures to smooth earnings, aiming to preserve the firm's reputation or attract external investment to mitigate long-term losses. Thus, the relationship between leverage and earnings management remains a subject of ongoing debate.

Regression results of the study

This section presents the regression outcomes in a panel table, as outlined in the methodology chapter. The study initially included all firms from the KSE 100 Index as the sample. However, due to incomplete or unavailable data, some firms were excluded, resulting in a final sample size of 75 firms.

Table 4: GMM regression results using Modified Jones Model

Dependent Variable: "Discretionary Accruals" Proxy for Earning Management				
DA from Balance Sheet Approach			**DA from Cash Flow Approach**	
From Equation 6:			From Equation 7:	
Model 1			**Model 2**	
Variable	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**
$DAAC_{CF(t-1)}$			-0.307	-0.00036***
$DAAC_{BS(t-1)}$	-0.1418	0.003***		
$Dscore_{(i,t)}$	-0.1207	0.031***	-0.333	0.0169***
$IO_{(i,t)}$	-0.653	0.0133***	-0.479	0.0209***
$FO_{(i,t)}$	-0.194	0.002**	-0.214	0.0103***
ROA $_{(I,t)}$	0.0014	0.0096***	0.0018	0.00722***
$Size_{(i,t)}$	-0.789	0.00234***	-0.157	0.00125***
$LEV_{(i,t)}$	-0.256	0.0834***	-0.274	0.0230***
AR-2 Test	0.158		0.406	
Hansen (P-Value)	0.568		0.587	
No. of Obs.	825		825	

Table 4 presents the regression results, revealing a negative impact of the one-period lag of discretionary accruals on the dependent variable, indicating that Pakistani firms consistently engage in earnings management through discretionary accruals. One potential motivation for managers to maintain this practice could be to enhance the appearance of financial statements through window dressing. Additionally, managers may adjust accruals incrementally to avoid abrupt changes that could raise concerns among report readers. Another explanation for this behavior may lie in regulatory reporting standards and corporate governance reforms aimed at protecting minority shareholders. The negative coefficient of -0.1418 suggests that managers avoid holding high accruals across multiple periods to evade scrutiny from analysts, a finding consistent with prior studies (Bradshaw et al., 2001; Jo & Kim, 2007; Lang & Lundholm, 1996; Lobo &

Zhou, 2001; Subramanyam26. Results from both the balance sheet and cash flow approaches for measuring accruals (-0.1418 and -0.307, respectively) are consistent and highly significant, with the cash flow approach (equation 7) yielding a stronger coefficient due to its greater reliability, as measurement errors are more prevalent in the balance sheet approach (Collins & Hribar, 1999).

The regression results in Table 5.4 further demonstrate an inverse relationship between corporate disclosure levels and earnings management. The highly significant negative coefficient of -0.1207 for the corporate disclosure variable supports the hypothesis that greater disclosure reduces earnings management, a finding aligned with previous research (Fan & Wong, 2002; Jo & Kim, 2007; Lapointe-Antunes et al., 2006). Coefficients from both models (-0.1207 from the balance sheet approach and -0.333 from the cash flow approach, significant at the 1% level) confirm that enhanced transparency fosters stronger governance practices, which not only curb earnings management but also strengthen overall management control systems, limiting managerial discretion and safeguarding minority shareholders' interests. High disclosure levels signal transparency, serving as a critical deterrent to earnings smoothing by protecting minority shareholders. This aligns with agency theory, which posits that disclosures reduce information asymmetry and align the interests of shareholders and management (Jensen & Meckling, 1976). Additionally, these findings support signaling theory, as disclosures act as signals to market participants, reducing information gaps and discouraging earnings manipulation.

Ownership structure is a key governance mechanism influencing firm decisions. In Pakistan, firms are predominantly family-owned or institutionally owned. Table 5.4 indicates that institutional ownership is negatively associated with earnings management, with coefficients of -0.653 (model 1) and -0.479 (cash flow approach, model 2), both significant at the 1% level. This suggests that institutionally owned firms are less likely to engage in earnings management, consistent with prior studies (Ding et al., 2007; Fan & Wong, 2002; Gunny, 2005; Javid & Iqbal, 2008; Jiraporn & DaDalt, 2009; Khlifi & Bouri, 2010; Saunders & Samei, 2006; Shahzad et al., 2017; Xingquan & Zhaonan, 2008). Institutional investors, with their substantial resources, can monitor managerial decisions effectively at minimal cost, disciplining management and reducing earnings manipulation.

Family ownership, another key variable in this study, also shows a negative relationship with earnings management. Coefficients of -0.194 (model 1) and -0.214 (model 2) indicate that family-owned firms are 19% to 22% less likely to engage in earnings management, aligning with findings from Achmad et al. (2008), Bozec (2008), Ding et al. (2007), Jiraporn & DaDalt (2009), and Prencipe et al. (2008). Family owners prioritize long-term business sustainability and reputation, avoiding short-term earnings manipulation that could harm their goodwill or wealth.

The models also include control variables—return on assets (ROA), firm size (measured as the natural logarithm of total assets), and leverage—to account for their effects. Table 5.4 shows a positive link between ROA and earnings management, as managers may manipulate earnings to enhance firm performance perceptions (Tabassum et al., 2014). Firm size is consistently and significantly negatively related to earnings management, as larger firms face stricter regulatory scrutiny, making manipulation more challenging. Leverage also shows an inverse relationship with earnings management, as lenders' monitoring reduces opportunities for manipulation, driven by their focus on loan repayment security.

Conclusion

This research examines the interplay between corporate transparency, ownership patterns, and earnings management practices within the Pakistani context. Specifically, it investigates how the

extent of corporate disclosure influences earnings management and explores the connection between firms' ownership structures and their engagement in such practices. The analysis is based on a sample of 75 Pakistani firms. The findings reveal a negative association between both corporate disclosure and ownership structure and earnings management, indicating that firms with higher transparency are less likely to manipulate earnings. Similarly, the study finds that both institutional and family ownership structures inversely affect earnings management, suggesting that robust monitoring mechanisms can reduce such practices. Transparent and closely monitored firms are less prone to earnings manipulation. These results highlight the critical role of corporate disclosure and ownership structures in curbing earnings management in Pakistan, offering a vital mechanism for safeguarding the interests and rights of minority shareholders.

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Appendix

Corporate Disclosure Dimensions

1. Does the Company Disclose Board Members Biographies? Does it list the other boards its directors sit on?

Two marks for each

2. Does the Company have a Policy for Handling Conflict of Interest

Four marks for disclosure zero for absence

3. Does the Board of Directors Provide a Code of Ethics or Statement of Business Conduct for all Directors and Employees?

Four marks for disclosure zero for absence

4. Disclosure of the Attendance Record of Each Director at Committee Meetings

Four marks for disclosure zero for absence