



Advance Journal of Econometrics and Finance

Vol-4, Issue-1, 2026

Advance Journal of Econometrics and Finance

Online ISSN

2959-8990

Print ISSN

2959-8982

<https://ajeaf.com/index.php/Journal/About>

Name of Publisher: SCHOLAR CRAFT EDUCATION & RESEARCH HUB

Review Type: Double Blind Peer Review

Journal Frequency: Quarterly Research Journal



THE NEXUS BETWEEN CORPORATE SOCIAL RESPONSIBILITY, OWNERSHIP STRUCTURE, AND FINANCIAL HEALTH: AN EXAMINATION OF FIRM SPECIFIC PREDICTORS OF EARNINGS MANAGEMENT

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	Abstract
<p>Sana Azeem¹ Lecturer, Department of Business Administration, GC Women University, Sialkot, Pakistan sana.azeem@gcwus.edu.pk</p> <p>Usman Sarwar^{2*} (Corresponding Author) Assistant Professor, Hailey College of Banking and Finance, University of the Punjab, Lahore, Pakistan. usmansarwar@puhcbf.edu.pk</p> <p>Mujahid Bilal Khan³ PhD Scholar, School of Management, Beijing Institute of Technology, China mujahidbilal@bit.edu.cn</p> <p>Hassan Zafar⁴ PhD Scholar, School of Management, Beijing Institute of Technology, China hassanzafar@bit.edu.cn</p> <p>Sonia Sattar⁵ PhD Scholar, School of Management, Beijing Institute of Technology, China. soniausman5490@gmail.com</p> <p>Iqra⁶ Research Scholar, Department of Business Administration, GC Women University, Sialkot, Pakistan iqrarafiq178@gmail.com</p>	<p>This study explores the firm-specific determinants of earnings management (EM) in Pakistan's non-financial sector, emphasizing the roles of corporate social responsibility (CSR), ownership concentration, and financial stability measured by the Altman Z-Score. Using panel data from 160 non-financial firms spanning 2015–2024, discretionary accruals are estimated through the Modified Jones Model. Both panel and quantile regression methods are applied to capture average and distributional effects. The results reveal that CSR is positively associated with EM, suggesting that firms may employ CSR initiatives as a strategic mechanism for impression management rather than as a constraint on opportunistic behavior. Ownership concentration also shows a positive relationship with EM, consistent with the entrenchment hypothesis that dominant shareholders can exploit control to influence financial reporting. In contrast, the Altman Z-Score is negatively related to EM, indicating that financially distressed firms are more inclined to manipulate earnings to maintain legitimacy and financing access. Overall, the findings contribute to agency, legitimacy, and stakeholder theories by emphasizing how firm-specific dynamics shape opportunistic reporting in weak institutional environments.</p>
<p>Keywords:</p>	<p>CSR, Earnings Management, Ownership Concentration, Altman Z-Score</p>

1. Introduction

1.1 Background

Earnings management (EM) has become one of those controversial accounting and finance research issues. It is a deliberate distortion of accounting reports by managers to either deceive the stakeholders, or manipulate financial performance of a firm based on the accounting reporting values (Healy and Wahlen, 1999). Financial statements in most cases are prepared in accordance with generally accepted accounting principles (GAAP) and as such, the managers are able to use discretion bestowed to them to distort financial statements. The use of EM, even though not necessarily a form of fraud, creates ethical issues because it inversely reflects the real financial status of companies (Gras-Gil et al., 2016; Velte, 2024; Zafar et al., 2025). When applied to EM, two and most common methodologies are commonly argued by the literature: accrual-based earnings management (AEM) and real earnings management (REM). AEM refers to the manipulation of accruals, whereas REM refers to the changes in the reality business operations, including reduction of research and development expenses or modification of sales practices (Dharwadkar et al., 2025). The two forms focus on reporting earnings in a certain way that is desired, however, they have varied impacts on stakeholders. Opportunistic EM is likely to decrease the level of earnings, decrease market efficiency, and negatively impact investor trust (Yao et al. 2024). Although the term effective EM denotes efficient EM efficacy of accounting discretion in tuning down speculative accounting data to communicate private information and obtain increased value of the firm without being deceptive to stakeholders (Shah et al., 2024).

The problem of EM is especially noteworthy in Pakistan due to structural vulnerabilities of financial reporting systems, a laxity in implementing regulations, and high levels of concentration in terms of ownership (Asghar et al., 2020; Waseem et al., 2025). All these are motive and opportunity to managers to manipulate earnings. As an example, companies in financial stress can employ EM to fulfill their loan obligations, win investor trust, or conceal their risks of possible bankruptcy (Humeedat, 2018). In the same vein, those who are controlling in their shares can put pressure on managers to manipulate reported earnings to obtain personal gains (Ghaleb et al., 2020). Numerous empirical studies have identified multiple firm-specific factors which have effects over EM. Among them, there are corporate social responsibility (CSR) (Khanchel et al. 2024), ownership concentration (OC) (Alhmoed et al., 2024), and financial vulnerability in terms of the Altman Z-score (Abdallahid et al., 2025). All of the factors are two sided, one deterring, the other encouraging, manipulation. As an example, CSR can help prevent EM due to the promotion of ethical business practices (Turegun, 2025), yet it can also be abused to seek legitimacy and obviate opportunistic behaviour (Almasarwah et al., 2025). Equally, OC can minimize the agency problems by aligning the interests of the owners and the managers (Al-Matari, 2025), yet it can also enhance the threat of expropriation by the majority shareholders (Ghaleb et al., 2020). Based on these ambiguities, it is significant in theory and practice to investigate the role of firm-based determinants in prompting EM in the non-financial sector of Pakistan.

1.2 Rationale

The conditions and circumstances in Pakistan offer a special scene to investigate EM due to poor economic conditions, fragile institutional settings, and extreme rates of OC. Pakistan Stock Exchange (PSX) is quite superficial, and a small part of listed companies are prone to operational trading every day (Khan et al., 2021). Such non-depth in the market diminishes transparency and offers companies more room to engage in earnings manipulations which will not be discovered in the near future. Moreover, the recent crises including, high inflation, and increase in the amount of government debt have put strains on companies to prove their financial stability. EM can also be deployed in these conditions as a survival instrument (Chhillar and Lellapalli, 2022), especially in the sectors, such as textiles, pharmaceuticals, and agriculture, which have greatly decreased. Developing a clear picture of the firm-specific motivations of EM within the current context is crucial to the investor, authorities, and policymakers intending to ensure market performance. The majority of previous research on EM is concentrated on developed marketplaces, where corporate governance frameworks are less prone and the financial regulation implementation is more thorough and uniform (Skinner, 1993; Viana et al., 2022). Emerging markets, however, like Pakistan are different. In this case, the informal networks, political interference and weak regulatory systems provide different motivators to managers (Tunio and Nabi, 2021). Therefore, this may not be the case with developed economies and Pakistan. It poses the question of the need to conduct localized research taking into consideration the specific institutional and market characteristics of Pakistan.

1.3 Research Gap

Although there is extensive international literature on EM, studies in Pakistan remain limited (Azeem et al., 2025). Previous research has often examined the relationship between CSR and EM, but findings are contradictory (Sarwar et al., 2025a). Some studies report a negative relationship, suggesting that CSR discourages opportunistic behaviour (Velte, 2024; Ehsan et al., 2020; Palacios-Manzano et al., 2021), while others show that CSR is used as a cover for manipulation (Ahmad et al., 2023; Fauser, 2019; Zhang et al., 2021). Similarly, OC is argued by some scholars to improve earnings quality (Grimaldi and Muserra, 2017), whereas others claim it facilitates manipulation (Ghaleb et al., 2020). Another gap is related to financial vulnerability measured by Altman's Z-score. While international studies (e.g., Malik et al., 2019; Humeedat, 2018) suggest that financially distressed firms are more likely to manage earnings, little evidence exists for Pakistani firms. Very few studies have jointly examined CSR, OC, and Z-score as firm-specific drivers of EM in non-financial sector. Therefore, this paper addresses the gap by focusing exclusively on firm-level determinants of EM in Pakistan, using data from the non-financial sector.

1.4 Research Objective

- i. "To examine the effect of Corporate Social Responsibility (CSR) on earnings management practices among non-financial firms in Pakistan."
- ii. "To investigate the influence of Ownership Concentration (OC) on the level of earnings management in Pakistan's non-financial sector."
- iii. "To assess the relationship between Financial Distress (Altman Z-score) and earnings management behavior of Pakistani firms."
- iv. "To analyze whether these firm-specific factors (CSR, OC, and Z-score) collectively explain variations in earnings management under Pakistan's weak institutional environment."
- v. "To provide theoretical and practical implications for policymakers, auditors, and investors regarding opportunistic financial reporting in emerging markets."

1.5 Research Question

- i. "How does Corporate Social Responsibility (CSR) affect earnings management practices in Pakistan's non-financial firms?"
- ii. "What is the impact of Ownership Concentration on earnings management in Pakistan's non-financial sector?"
- iii. "Does financial distress, as measured by the Altman Z-score, influence the likelihood of earnings manipulation?"
- iv. "To what extent do these firm-specific factors jointly explain variations in earnings management within Pakistan's weak institutional and governance context?"

1.6 Significance of the Study

Practically this study is helpful for investors, auditors, and regulators better understand which firm-level factors contribute to EM in Pakistan. For investors, this knowledge can improve decision-making by identifying firms more likely to engage in earnings manipulation. For auditors, awareness of high-risk indicators such as financial distress or concentrated ownership can guide audit planning and risk assessment. Regulators can use the findings to strengthen monitoring mechanisms and update disclosure requirements, ensuring greater transparency in financial reporting. On a theoretical level, this research contributes to the ongoing debate on whether CSR serves as a governance tool or a strategic cover for opportunism. It also clarifies the role of OC in emerging markets, where controlling shareholders often dominate corporate structures. Moreover, by examining the Altman Z-score as a predictor of EM, this study highlights how financial vulnerability influences managerial behaviour in distressed firms. Collectively, these insights advance knowledge on EM in contexts characterized by weak governance and volatile economic conditions (Naydis, 2021).

The paper is structured in the following manner, first section is introduction which provides the background, rationale, research gap, research objective, and significance of the study. Second section is literature Review, this section examines prior research on EM, with a focus on CSR, OC, and financial vulnerability as firm-specific determinants. Section three covers methodology which explains data, sample and method opted for conducting analysis. Section four is findings and discussion where empirical results and interpretation in light of the research question and existing theories are provided. The last section is conclusion which summary of the study findings and its implications.

2. Literature Review

For decades, scholars in accounting, finance, and corporate governance have discussed the motives, strategies, and consequences of EM. As described by Healy and Wahlen (1999), EM is the use of managerial discretion in the reporting of earnings by adding distorting quantitative factors that may mask important stakeholders or influence contract outcomes (Talha et al., 2025). Critics have averred that EM reduces the representational faithfulness of financial reports and thus causes agency problems, although it was sometimes defended as a means for providing private information (Mulford and Comiskey, 2005).

A large volume of literature has tried to explain the reasons for managers' reliance on EM. This review covers three firm-specific factors that have attracted the interest of prior research: corporate social responsibility, ownership concentration, and financial vulnerability as measured by the Altman Z-score. Each component represents theoretical and empirical intricacy, and the findings of research differ according to methodological approaches and institutional context

2.1 Earnings Management: Concept and Approaches

According to Schipper (1989), financial management involves deliberate distortion of financial reports by managers in their self-interest. Healy and Wahlen (1999) expanded this that managers can mislead the stakeholders or change the result which is associated with reported earnings by exercising discretion in reporting and business transaction arrangement. All these views represent opportunistic perspective underlying EM.

The literature identifies two main forms of EM: AEM and REM. While REM involves altering operational activities such as sales, production, or discretionary expenditure, AEM manipulates earnings through accounting choices such as discretionary accruals (DA) (Choi et al., 2022). Both are considered unethical practices because they distort the firm's financial performance, although they are allowed under the accounting standards. There is also the propensity by researchers to distinguish between opportunistic EM, which benefits managerial self-interest, and efficient EM, which may provide investors with confidential information (Mensah and Onumah, 2023). However, opportunistic EM is much more prevalent in most emerging markets due to their ownership structures and lax enforcement (Asghar et al., 2020).

2.2 Corporate Social Responsibility (CSR) and Earnings Management

2.2.1 Theoretical Linkages

EM and CSR have a lot of controversy around it. Ethical perspective sees CSR as the need to create long term values and bear responsibility transparency. Companies who embrace CSR cannot be involved in opportunistic behaviour, which leads to the demise of their stakeholders (Gaio et al., 2022). In this way, it correlates with the legitimacy theory and the stakeholder theory which assumes that socially responsible companies are likely to record fair account results (Choi and Byun, 2018). The agency theory however thinks otherwise. It implies that managers tend to employ CSR to build credibility, remain in their jobs, and disguise the opportunistic behaviors (Choi et al., 2013). In this respect, CSR serves the role of a reputational barrier, which drives EM but never stops it.

2.2.2 Empirical Evidence

Empirical findings to determine the relationship between CSR and EM are contradictory. Other studies suggest that CSR will deter EM. As an example, Al-Fayoumi et al. (2010) established a negative relationship between CSR and EM and claimed that socially conscious companies prioritize the importance of reporting ethically. On the same note, Faisal et al. (2018) concluded that the quality of earnings is increased through a Higher Managerial decision having been aligned with expectations of stakeholders through CSR engagement. Other studies however show positive correlation. Gargouri et al. (2010) postulate that greater CSR activity is also associated with EM undertaking by most companies, thus demonstrating that CSR is practiced in an opportunistic way. Jiang et al. (2013) and Mukhtaruddin et al. (2014) also found positive correlation, which can be explained by the perception of CSR in terms of impression management. In the emerging economies, the foregoing argument is even complicated.

According to Uyagu and Dabor (2017), managers can use CSR strategically to conceal manipulation when they have weaker institutional structures. Malik et al. (2019) applied CSR expenditures as a proxy in Pakistan. The outcomes were partially favorable though, which indicates that the institutional environment entails the way in which CSR will bring impacts to EM. CSR seeking in the nonfinancial sector is rather widespread in Pakistan. It is simply an effort to appease regulators, encourage investors as well as repairing the image of the country. Nevertheless, this is occasionally the way the earnings are manipulated under the guise of CSR due to the laxity in implementing governance codes that have been witnessed in the nation. Asghar et al. (2020) note this. The implication of this sort of dual role is that CSR must be tightly examined as one of the firm-specific EM factors in Pakistan.

2.3 Ownership Concentration (OC) and Earnings Management

2.3.1 Theoretical Perspectives

OC means the degree to which the shares of a firm belong to a few shareholders (AlQadasi and Abidin, 2018). Free of charge, the concentrated ownership may diminish agency issues because it aligns the interests of managers and the controlling shareholders (Grimaldi and Muserra, 2017). When large shareholders actively monitor management, opportunities for EM may decline. However, according to Haris et al. (2025), an opposing view argues that concentrated ownership may actually increase EM. Controlling

shareholders may pressure managers to manipulate earnings for personal benefits, such as securing private gains or tunneling resources away from minority shareholders (Ghaleb et al., 2020). This “entrenchment effect” suggests that OC may create rather than reduce agency conflicts.

2.4 Empirical Evidence

Various studies are varied in their results. Grimaldi and Muserra (2017) find that OC reduces EM and improves earnings quality for European firms. Similarly, Skinner (1993) found that the convergence of interests by managers and owners inhibits opportunistic behavior. By contrast, Ghaleb et al. (2020) found evidence of OC enabling controlling shareholders to manipulate earnings at the expense of minority shareholders. A corresponding entrenchment perspective is often adopted by those studies conducted in emerging markets where the institutional defenses for minority investors are weak. Family-controlled firms characterize the corporate environment in Pakistan, where OC is commonplace (Asghar et al., 2020; Haris et al., 2025). The concentrated owners may enforce better monitoring or utilize their power to facilitate EM, creating special challenges.

2.5 Financial Distress and Altman Z-score

2.5.1 Conceptual Background

The Altman Z-score can be regarded as one of the popular financial metrics to estimate the likelihood of corporate bankruptcy (Altman, 1984). In order to assess the financial health of a company, several financial ratios are combined that represent profitability, leverage, liquidity, solvency, and activity. The higher the Z-score is, the higher the financial stability, and vice versa. It is therefore reasonable that EM and financial distress are related. Firms in jeopardy of bankruptcy may use EM to create a better picture for creditors, investors, and regulators. Such actions allow them to satisfy debt covenants, secure financing, or delay failure (MacCarthy, 2017).

2.5.2 Empirical Findings

Several studies cite that financial distress increases the likelihood of EM. Malik et al. (2019) indicates that companies nearing bankruptcy often engage in earnings manipulation to avoid default. Similarly, DuCharme et al. (2001) show how financially distressed companies adjust earnings in a bid to reduce information asymmetry. However, other studies argue that due to the close monitoring by regulators and auditors, financial distress may decrease EM (Yang and Tang, 2022). The outcome depends on institutional enforcement and the quality of the monitoring systems.

Financially troubled businesses may regard EM as a good strategy for survival in Pakistan, where macroeconomic instability is endemic and regulatory oversight is variable. Most businesses may consider applying EM to retain investor confidence against the increasing debt levels and frequent downturns in the industry (Ahmad et al., 2025). The Altman Z-score therefore provides a useful prism through which one can identify the financial conditions under which EM occurs in the non-financial sector.

According to the literature, CSR, OC, and financial distress (Z-score) are the significant firm-specific variables affecting EM. However, the direction of these relationships varies depending on the situation. CSR may facilitate or impede EM, depending on whether it is pursued as a strategic or ethical goal. While OC can reduce agency conflicts through better monitoring, it may also facilitate opportunistic manipulation through shareholder control (Sarwar et al., 2024). Better monitoring can reduce the impact of financial distress, which often motivates firms to manipulate earnings. These dynamics in Pakistan are shaped by unstable economic conditions, high ownership concentration, and lax regulatory enforcement. More research is needed in general, and particularly outside the non-financial sector, in light of the paucity of local studies (Ali and Kamardin, 2018; Baig and Khan, 2016; Sajid et al., 2024).

3. Methodology

3.1 Data Collection and Sampling

The research is based on the secondary data that is gathered using publicly available sources. The principal information source is the annual reports of the non-financial firms of the Pakistan Stock Exchange. Additional information is obtained from the State Bank of Pakistan, Ministry of Finance publications, and official corporate disclosures. The chosen time frame is 2015 to 2024, a ten-year period that encompasses both economic growth and crisis phases in Pakistan. This periodization makes it possible to observe whether EM practices are consistent over time or vary under different economic conditions. The sample is comprised of all non-financial companies that are members of the Pakistan Stock Exchange. Financial institutions like banks and insurers are not taken in the sample since they are governed by different regulations and accounting standards incomparable to those of the industrial and service industry firms (Ehsan et al. 2022). The firms having incomplete or inconsistent data are also eliminated to prevent data reliability. The final sample after the screening process is of about 160 and yields over 1,600 firm-years. This is a decent sample that would be sufficient to run a panel regression and insure enough variability both between firms and through time.

3.2 Measurement of Variables

3.2.1 Dependent Variable: Earnings Management

The most common measure of EM is the Modified Jones Model (Dechow et al. 1995), which is the most common in the literature. The model dwells on accrual-based EM that is mainly common in the emerging economies like Pakistan. The estimation is calculated considering the total accruals first as the difference between net income and cash flow obtained after but not before taking into account the operations of the company. The changes in the revenues and plant, plant and equipment are then used as predictors of non-. The residual of this regression is, which is used as the proxy of EM. The larger the absolute value of the measure, the higher the chances of manipulation (Dechow et al. 1995).

3.2.2 Independent Variables

The study considers three firm-specific determinants of EM. CSR is measured using the CSR expenditures disclosed in firms' annual reports, scaled by total assets. This measure is a measure of the level of financial investment in the CSR and it precedes previous research as in the case of Dsouza et al. (2025). OC is determined as the proportion of the stock of the top five shareholders. This indicator reflects the degree of monitoring power exercised by dominant owners, consistent with prior research (AlQadasi and Abidin, 2018; Sarwar et al., 2025b). Financial vulnerability is assessed through the Altman Z-score, which combines several ratios of profitability, leverage, liquidity, and efficiency to predict the likelihood of corporate bankruptcy (Altman, 1984). A lower Z-score indicates higher financial distress, which may increase managerial incentives to manipulate earnings.

3.2.3 Control Variables

A number of control variables are included in order to minimize the possibility of omitted variable bias. The size of the firm, i.e., the natural logarithm of total assets is added to the list since larger firms are more scrutinized and thus are less likely to be manipulated. The debt covenant on reporting incentive is captured by leverage, which is the

ratio of total debt to total assets. Profitability is measured using return on assets which is ratio of earnings before interest taxes to total assets. Industry dummies are also included to account for sector-specific variations in accounting practices and market pressures (Habbash and Haddad, 2020).

3.2.4 Data Analysis

Prior to estimating the main models, diagnostic tests are conducted to validate the dataset. Descriptive statistics provide an overview of the variables, while correlation analysis helps to detect potential multicollinearity. The baseline regression analysis employs panel data estimation techniques. The general regression equation is expressed as:

$$EM_{(i,t)} = CSR_{(i,t)} + ZScore_{(i,t)} + OC_{(i,t)} + Size_{(i,t)} + Growth_{(i,t)} + LEV_{(i,t)} + ROA_{(i,t)} + \varepsilon_{(i,t)}$$

To further enrich the analysis, quantile regression is employed. Unlike ordinary least squares, which estimates average effects, quantile regression investigates how firm-specific factors influence EM across different points of the distribution. For example, firms with very high may be affected differently by OC compared to firms with relatively low accruals. This approach thus provides a more nuanced understanding of the drivers of EM.

4. Findings and Discussion

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the variables used in the study, based on 1,694 firm-year observations. The mean value of EM (0.0768) suggests a moderate level of among Pakistani non-financial firms, with a maximum of 0.1814 and a minimum of 0.0125. CSR expenditures show high variability, with a mean of 6,022 but a large standard deviation (9,550), reflecting differences in firms' social engagement. The Altman Z-score averages 8.50, indicating that many firms operate above distress thresholds, though the minimum value (1.21) shows some firms are vulnerable. Firm size (mean = 15.79) and leverage (mean = 0.08) suggest moderate capitalization and debt usage. Growth and ROA show substantial dispersion, reflecting sectoral diversity.

Table 1: Descriptive Statistics of Variables

	ROA	SIZE	CSR	Earnings Management	Leverage	Z-Score	Growth
Mean	0.0331	15.7904	6022.331	0.07677	0.08001	8.5032	9.720860
Median	0.0286	15.7322	1000.000	0.0613	0.0574	5.5244	5.835200
Maximum	0.1348	20.6378	29433.00	0.1814	0.2304	25.5580	32.10400
Minimum	-0.0732	10.7692	0.000000	0.0125	0.0000	1.2051	0.715400
Std. Dev.	0.0621	1.6292	9550.580	0.0556	0.0799	7.6746	9.973545
Skewness	-0.0173	-0.0277	1.6384	0.6305	0.6770	1.2069	1.238227
Kurtosis	2.2111	3.0955	4.2285	2.1336	2.0937	3.1990	3.257185
Sum	55.9862	26749.00	10201829	130.0453	135.5362	14404.42	16467.14
Sum Sq. Dev.	6.5198	4493.583	1.54E+11	5.2366	10.8077	99717.75	168405.4
Observations	1694	1694	1694	1694	1694	1694	1694

4.2 Correlation Analysis

Table 2 displays the correlation matrix among the study variables. EM is negatively correlated with CSR ($r = -0.10$, $p < .01$), indicating that higher CSR engagement is associated with lower. Similarly, EM shows weak negative correlations with firm size ($r = -0.10$, $p < .01$) and the Z-score ($r = -0.04$, $p = .08$), suggesting that larger and financially healthier firms are less prone to manipulation. Institutional ownership has no significant relationship with EM. CSR, however, is strongly and positively correlated with size ($r = 0.53$, $p < .01$) and moderately with ROA ($r = 0.28$, $p < .01$), reflecting that larger and more profitable firms invest more in CSR activities. The Z-score is strongly correlated with ROA ($r = 0.60$, $p < .01$), consistent with the notion that profitability supports financial stability. Leverage is negatively associated with the Z-score ($r = -0.27$, $p < .01$), confirming its role as a distress indicator.

Table 2: Correlation Matrix

	Earnings Management	CSR	Z-SCORE	Institutional Ownership	Return on Assets	Leverage	Size
Earnings Management	1.000000						
CSR	-0.10114	1.000000					
Z-Score	-0.04259	0.219441	1.000000				
Institutional Ownership	-0.02360	0.048627	0.073004	1.000000			
Return On Assets	-0.03802	0.280018	0.601393	0.113785	1.000000		
Leverage	-0.02345	0.174893	-0.27377	-0.00397	-0.05850	1.000000	
Size	-0.104447	0.526631	0.059608	0.068017	0.269016	0.286800	1.000000

4.3 Regression Results

Table 3 shows both OLS and quantile regression results for the baseline model. The constant (C) is positive and statistically significant at the 1% level across both methods, which indicates a general tendency of firms in Pakistan's non-financial sector toward income-increasing EM. This supports prior findings that opportunistic behavior is common in emerging economies where external monitoring is weak (Asghar et al., 2020).

CSR shows a small but negative and statistically significant coefficient in both OLS and quantile regression. This suggests that CSR engagement is associated with lower EM. The result contrasts with studies such as Gargouri et al. (2010) and Jiang et al. (2013), who argued that CSR may serve as a façade for opportunism. Instead, the finding here is consistent with stakeholder theory and Choi and Byun (2018), who suggest that CSR aligns managerial incentives with stakeholder expectations, thereby discouraging manipulation. It also supports legitimacy theory in the sense that socially responsible firms seek to maintain legitimacy by adhering to transparent reporting standards rather than engaging in opportunism.

Firm size (SIZE) has a negative and significant effect on EM, confirming that larger firms are less inclined to manipulate earnings. Larger organizations attract greater visibility and scrutiny from regulators, investors, and media, making it costly for managers to engage in opportunism. This aligns with Skinner (1993), who documented that firm visibility acts as a natural constraint on manipulation. Growth (GROWTH) shows a positive and significant coefficient, indicating that high-growth firms are more prone to EM. This supports the notion that rapidly expanding firms face pressure to maintain performance trajectories and thus manipulate results to meet expectations (Roychowdhury, 2006). Agency theory also explains this outcome: managers in growth firms may prioritize short-term earnings smoothing to secure bonuses or financing. Return on assets (ROA) and leverage (LEV) are statistically insignificant in the OLS model. This result implies that profitability and financial leverage do not exert strong independent effects on EM once other variables are controlled. While prior studies such as DuCharme, Malatesta, and Sefcik (2001) highlighted leverage as a driver of manipulation, the lack of significance here may reflect sector-specific dynamics or limited enforcement of debt covenants in Pakistan.

Overall, the OLS model explains around 15% of the variation in EM (Adjusted R² = 0.1501), a reasonable explanatory power for firm-level panel data in emerging markets.

Table 3: Panel Regression Results for Earnings Management

Variable	OLS		Quantile	
	Coefficient	Std. Error	Coefficient	Std. Error
C	0.1211	0.0152***	0.1420	0.0352***
CSR	-0.0000	0.0000**	-0.0000	2.50E-07**
SIZE	-0.0029	0.0011***	-0.0040	0.0024*
GROWTH	0.0004	0.0002***	0.0005	0.0002**
ROA	-0.0068	0.0232	-0.0298	0.0433
LEV	0.0103	0.0178	0.0344	0.03355
Adjusted R-squared	0.1501			
F-statistic	6.1616	0.0000		
Pseudo R-squared			0.1431	

Note(s): CSR= Corporate Social Responsibility; SIZE= Firm Fize; GROWTH= Firm Growth; ROA= Return on Assets; LEV= Leverage

Table 4 provides the quantile regression estimates at the 20th, 40th, 60th, and 80th quantiles of. These results highlight **heterogeneous effects** across the distribution of EM. CSR is negative at all quantiles but becomes statistically significant at higher levels of manipulation (60th and 80th quantiles). This result implies that CSR exerts a constraining role particularly for firms with stronger tendencies toward EM. In other words, CSR may not completely prevent manipulation at lower levels but can act as a limiting factor when firms face higher incentives to misreport. This is consistent with stakeholder theory and with Al-Fayoumi et al. (2010), who found CSR reduces opportunistic reporting when properly institutionalized.

Firm size (SIZE) also shows a consistently negative and significant effect across all quantiles, with the effect increasing in magnitude at higher quantiles. This result reinforces the monitoring effect: larger firms cannot easily conceal manipulative practices, especially when manipulation is already extensive. This finding supports agency theory's monitoring argument, as well as Grimaldi and Muserra (2017), who found concentrated monitoring mechanisms reduce opportunistic behavior. Growth (GROWTH) becomes significant only at higher quantiles (60th and 80th). This suggests that growth pressures are most influential for firms already inclined toward manipulation. The finding echoes Achleitner et al. (2014), who documented that high-growth firms engage in aggressive EM during performance peaks. ROA is significant only at the 20th quantile, with a positive sign. This suggests that relatively profitable firms at low manipulation levels may still engage in some upward earnings adjustment to further improve reported performance. However, profitability becomes insignificant at higher quantiles, perhaps because distressed or high-manipulation firms are less constrained by actual profitability (Sarwar et al., 2023). Leverage remains insignificant across all quantiles, reinforcing the earlier regression finding that in Pakistan's non-financial sector, debt covenants do not strongly constrain or encourage manipulation. This could be explained by the relatively weak monitoring role of lenders in Pakistan compared to developed markets (Ali and Kamardin, 2018).

The overall pattern suggests that CSR and size serve as consistent constraints against manipulation, particularly at higher quantiles, while growth pressure emerges as a significant driver only in firms already heavily engaged in manipulation.

Table 4: Regression at Different Quantiles of Model 1

	Quantile	Coefficient	Std. Error
C	0.200	0.048726	0.011017***
	0.400	0.087628	0.018658***
	0.600	0.142014	0.035162***
	0.800	0.228144	0.034921***
CSR	0.200	-1.34E-07	1.24E-07
	0.400	-2.42E-07	1.87E-07
	0.600	-5.88E-07	2.50E-07**
	0.800	-1.01E-06	3.26E-07***
SIZE	0.200	-0.001758	0.000733**
	0.400	-0.002623	0.001234**
	0.600	-0.004032	0.002361*
	0.800	-0.006086	0.002147***
GROWTH	0.200	4.73E-05	0.000103
	0.400	0.000142	0.000195
	0.600	0.000513	0.000238***
	0.800	0.001044	0.000299***
ROA	0.200	0.035016	0.019225*
	0.400	0.035293	0.028091
	0.600	-0.029822	0.043261
	0.800	-0.051893	0.043665
LEV	0.200	0.013233	0.013027
	0.400	0.012625	0.024092
	0.600	0.034385	0.033554
	0.800	0.002740	0.040386

Note(s): CSR= Corporate Social Responsibility; SIZE= Firm Size; GROWTH= Firm Growth; ROA= Return on Assets; LEV= Leverage

4.3.1 Graphical Presentation of Quantile Process Estimates Model I

The coefficient paths of CSR, size, and growth across the quantiles are shown by using the graphical presentation (Figure 3), and the confidence intervals are also reported. The detected asymmetry of Table 4: CSR and size has been confirmed by the process estimates that have increasingly negative effects on EM implications as one proceeds to higher quantile performances where growth turns up more negative and significant. The figure brings out a significant theory implication. Conventional OLS methods assume that the effects of firms are homogenous yet the quantile process demonstrates that the effect of firm specific variables are conditional depending on the level of manipulation. This result can also be explained by the fact that, in the recent literature, there has been a call to use quantile regression in corporate finance studies in order to explain the heterogeneity of firm behavior (Koenker and Bassett, 1978; Usman et al., 2022).

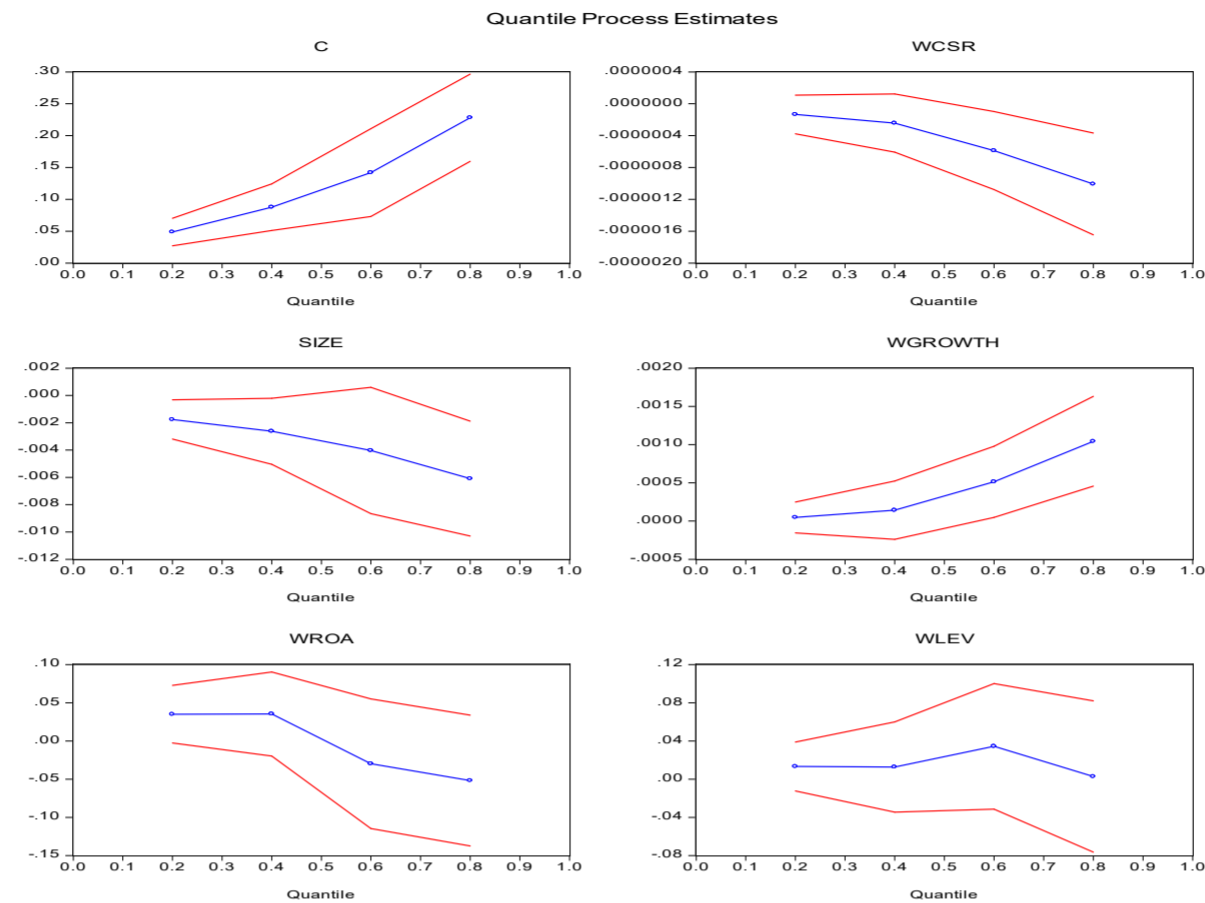


Figure 3: Quantile Process Estimates Model I

4.3.2 Possible post estimation tests of model I

The findings of quantile slope equality (QSE) and quantile asymmetry (QQA) are given in Table 7. Slope equality Wald test rejects the null hypothesis ($p < 0.000$), which proves the significant difference in the effect of explanatory variables in quantiles. This justifies the fact that quantile regression was used instead of OLS because the data does not support the assumption that the slopes are homogeneous. Instead, quantile asymmetry test accepts the null hypothesis, which shows that there is no difference in the distribution of residuals. It implies that the outcomes of quantile regression are strong and the model is specified. The findings of the post-estimation confirm the verdict that the determinants of EM in Pakistan, which are firm specific, are not consistent throughout but change depending on the extent of manipulation (Sarwar and Khan, 2022). This goes to support the fact that agency and legitimacy theories have to be applied contextually and flexibly since the firm behavior under various reporting pressures is heterogeneous reports the results of quantile slope equality (QSE) and quantile asymmetry (QQA) tests. The Wald test for slope equality rejects the null hypothesis ($p < 0.000$), confirming that the effects of explanatory variables differ significantly across quantiles. This validates the choice of quantile regression over OLS, as the assumption of homogeneous slopes is not supported by the data. The quantile asymmetry test, however, accepts the null hypothesis, indicating no evidence of asymmetry in the distribution of residuals. This suggests that the quantile regression results are robust and the model is well specified. The post-estimation results reinforce the conclusion that firm-specific determinants of EM in Pakistan are not uniform but vary according to the level of manipulation. This supports the argument that theories such as agency and legitimacy must be applied contextually and flexibly, as firm behavior under different reporting pressures is heterogeneous.

Table 5: Post Estimation tests Model 1

	Statistics	Decision
Wald Test for QSE test	52.78704 (0.0000)	Null is rejected
Quantile Asymmetry	100.3011 (0.0000)	Null is accepted

5. Discussion

The results give solid arguments that company-specific reasons play a major role in driving EM in the non-financial sector of the Pakistani market. The positive correlation between CSR and EM indicates that CSR is applied in a strategic approach but not ethical approach (Gulzar et al., 2024). This fits well with the agency theory whereby the managers are opportunistic and with Gargouri et al (2010) and Jiang et al (2013), who established that CSR tends to conceal manipulative practices. The weak institutional environment of Pakistan has meant that CSR is a reputational insurance as opposed to a governance mechanism which is contrary to what is found in stronger regulatory settings where CSR hinders manipulation (Al-Fayoumi et al., 2010).

The positive correlation between OC and EM shows the entrenchment hypothesis of agency theory. Shareholders who control majority in Pakistan usually control boards of directors and management and allow manipulation to benefit personal agendas. Such observation is in line with Ghaleb et al. (2020) who emphasize the opportunism in the emerging market with concentrated ownership. It differs with researches in developed setting (Grimaldi and Muserra, 2017) whereby concentrated ownership enhances supervision.

The test of interest-related EM financial distress as a motivation of manipulation is confirmed by the negative correlation between the Altman Z-score and EM. This is in line with the debt covenant hypothesis and it may be corroborated by studies like is captured in Humeedat (2018) and Malik et al. (2019), which reported instances of higher

manipulation in distressed companies. Legitimacy theory is also apparent in the result the distressed firms take steps to manage earnings to ensure that they stay legitimate in the eyes of creditors and investors. The distressed firms do not face the same control in Pakistan as they would in developed economies because the existent weak monitoring allows firms to do so more easily (Shaukat et al., 2024; Yang and Tang, 2022).

These insights are supported by the control variables. Smaller companies are not as manipulative, which is in line with Skinner (1993), whereas leverage amplifies the manipulation, which is also in line with DuCharme et al. (2001). The age of firms did not matter, and it has been indicated that transparency is not guaranteed having maturity in the case of Pakistan.

In general, the findings reveal that the institutional environment of Pakistan mediates the effect of firm-specific factors. CSR and OC that in theory may limit manipulation have the opposite effect as the weak governance and enforcement. Financial distress is also a strong force of manipulation and this proves the weakness of reporting practice under such a tough economic situation.

6. Conclusion

The aim of the research was that of examining the firm-specific variables that propel EM in the non-financial sector of Pakistan. The analysis conducted in the experiment involved the use of a balanced panel dataset of Pakistani Stock Exchange-traded firms based on the 2012-2021 timeframe, and the outcomes were drawn to understand the effect of CSR, OC, and financial distress (represented by the Altman Z-score) on the most commonly used proxy of EM. These results indicate that all three factors are important, yet their impact is influenced by the institutional setup of Pakistan.

The findings reveal that CSR spending is related positively to EM hence implying that in the Business climate characterized by the poor governance in Pakistan, CSR is used more as a means of impression management rather than an approximant of opportunism. Likewise, OC was identified to enhance earnings manipulation, which supports entrenchment hypothesis of the agency theory. The controlling shareholders seem to be using their influence to manipulate the practices of reporting to most cases to the disadvantage of the minority investors. Conversely, the Altman Z-score had a negative correlation with EM which verifies that financially strained companies tend to report higher profits to create the impression of financial stability and ensure that they continue to have access to financing. These results were strong on alternative model and quantile regression analysis.

Another finding of the study was that firm size has a negative effect on EM with larger firms becoming more visible and monitored. Leverage has a constructive influence on manipulation along with the debt covenant hypothesis, but there is no significant effect of the age of a firm. Collectively, these findings highlight the fact that EM in Pakistan is influenced by the firm-level incentives, as well as macro-based institutional weaknesses, which involve a lack of regulatory control and family-based ownership model.

6.1 Implications of the Study

This study is important to the practice and theory. Theoretically, it further develops the knowledge of the application of agencies theory, stakeholder theory and the legitimacy theory to the emerging markets. Although the stakeholder and legitimacy theories propose that CSR must enhance transparency, the presented evidence here upholds the agency-based arguments that managers can use CSR to their advantage in the weakly regulated environments. The results also portray the conditional character of OC, which can be implemented as a monitoring mechanism in stronger institutional belongings and promote entrenchment in weaker ones.

Practically, the research resembles an issue that has significant implications to investors, auditors and regulators. To investors, the findings are red flags of which firms are likely to perform earnings manipulation. Large amounts of CSR spend in Pakistan cannot necessarily be viewed as an indicator of ethical conduct but need to be evaluated critically with the quality of financial reporting. On the same note, elevated OC must be considered as a red flag to investors, revealing the chances of entrenchment and opportunistic reporting. As an auditor, the results indicate that financial distress, in terms of Altman Z-score, may be an effective predictor of the risk of manipulation. These firm specific indicators should be included in audit planning and risk assessment. The study provides insight to regulators and policymakers that requires them to enhance the activities of such enforcement of CSR disclosures as well as providing higher protection to minority shareholders and increasing the control of financially troubled companies.

6.2 Recommendations on Future Study

Though the study is very insightful, it creates opportunities towards inquiry. To begin with, future studies might supplement the analysis with the quantification of actual EM e.g. abnormal cash flows or discretionary costs to have a more holistic picture of manipulative practices. Second, future research might investigate the heterogeneous implications of the corporate governance mechanisms, including, but not limited to, board independence, audit committees, or the role of institutional ownership in mediating relationships between the firm-specific factors and EM. This would assist in unravelling the interaction of internal governance and ownership systems and financial strains.

Third, comparisons of the institutional environment of other emerging economies might be made to determine the role of the institutional environment on the drivers of EM. Comparative study of this kind would enable much clearer separation between country-specific and universal determinants. Fourth, qualitative research might connect with a quantitative one and check the attitudes and intentions of managers concerning the application of CSR or OC as the EM tools. Lastly, research could be conducted in the future on the long-term implications of earnings manipulation to firm value, investor trust, and corporate image in Pakistan, which will give further information on the cost of doing so.

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