P-ISSN: 2790-6795	Annals of Human and Social Sciences	July-September 2025,Vol. 6, No. 3
O-ISSN:2790-6809	http://doi.org/10.35484/ahss.2025(6-III)24	[288-298]

Annals of Human and Social Sciences
www.ahss.org.pk

RESEARCH PAPER

Discretionary Accounting and Earnings Management Practices: Evidence from Sugar Industry of Pakistan

[1]Hina Aziz, [2]Moazzam Ali* and [3]Tanzeela Nadeem

1. Deputy Registrar, National University of Pakistan, Rawalpindi, Punjab, Pakistan
2. Assistant Professor, Department of Commerce, Allama Iqbal Open University, Islamabad, Pakistan
3. Director, Apex Group of Colleges, Katha Sughral, Khushab, Punjab, Pakistan

Corresponding Author moazzam.ali@aiou.edu.pk

ABSTRACT

This study examines the accounting practices of earning management in the sugar industry of Pakistan. Using two broader categories; Accruals Based Earnings (AEM) and Real Earnings Management (REM), this study examines the phenomena of earning management. The study uses the data of 27 listed sugar firms on the Pakistan Stock Exchange for the period 2014-2023. The Modified Jones Model is applied to estimate the AEM and Roychowdhury Model is used for REM. The results of Pooled OLS suggest the complementary relationship between AEM and REM. Notably, AEM exhibits a stronger explanatory power in predicting REM, as reflected by its higher coefficient value. This study offers valuable insights for investors, regulators, and policymakers, particularly in the context of Pakistan's sugar industry. The findings highlight the need for stricter and transparent financial reporting standards to enhance transparency and objectivity by implementing more rigorous regulations.

Keywords: Earning Management, Pakistan Stock Exchange, Accruals Earning Management, Real Earning Management, Modified Jones Model (1995), Roychowdhury Model (2006), Pooled OLS, Sugar Industry, Discretionary Accounting

Introduction

Behind the reporting of every figure in the financial statements there is an opportunity – an opportunity to conceal, how to disclose and how to shape the perception of stakeholders (Diri, 2016). These opportunities stem from the management strategic intent which could result from external pressures such as competition, regulatory compliance etc. or it could originate internally from motives like higher compensation, promotions etc. (Healy, 1985; Jensen & Murphy, 1990; Dechow & Huson, 1994; Gelb & Zarowin, 2002; Laux & Laux, 2009). This strategic intent is financial reporting and is termed as Earning Management (EM). The EM is an art through which management chooses reporting that suits their interests best, rather than reporting the actual position (Schipper, 1989; Healy & Wahlen, 1999). Such reshaping of numbers does not fall under the ambit of fraud but involves carefully navigating within the permissible limits of accounting standards and regulatory frameworks. This is a game of management's judgment, accounting estimates, and reporting timelines. Within the broader academic domain, this permissible manipulation of financial results is called discretionary accounting practices which are shaped by management decisions.

Earnings management (EM) is instrumental in shaping the perceived financial health of an organization, as stakeholders often interpret financial statements at face value without questioning the underlying accounting choices. Healy & Wahlen (1999) defined earnings management as *"when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes*

that depend on reported accounting numbers." Such practices can significantly influence the decision-making of shareholders, prospective investors, vendors, regulators, and government bodies. Literature broadly classifies the EM into Real Earning Management (REM) and Accruals Earning Management (AEM). The REM is the real shift in actual operations and activities such as intentionally delaying the delivery of a shipment to record the cost of purchase to next financial year. In contrast, EM is the puzzle of judgment and estimates mostly, such as management decision to increase the provision of bad debts or change the asset valuation method. Several studies reveal the strategic advantage of REM over AEM (Chen et al., 2010).

Some studies suggest the existence of a substitution effect between the two EM tactics; this shows the implication of one tactic in place of other (Said & Malik 2021; Khunkaew et al., 2019). Other researchers reveal a complementary effect between REM & AEM; indicate the presence of both techniques simultaneously (Al-Haddad et al., 2019). Meanwhile, some studies confirm the use of only one form of EM by the management in the certain contexts (Potharla, 2023; Viana et al., 2021; Li et al., 2020). Management typically avoids to reveal their engagement in EM strategies; therefore, selection of a particular EM strategy is mostly depended upon the organizational structure, regulatory scrutiny and other organizational specific factors. Studies highlighted that auditors appointment among big four chartered accountant firms reduce the EM practices, public owned entities do not indulge in EM, Independent directors on Board of Director reduces EM, investors protection is high management is indulge in REM instead of AEM (Enomoto et al., 2015), political connected firms are more focused for REM than non-political connected firms (Braam et al., 2015), CSR Reporting is negatively associated with REM (Ghaleb et al., 2021), strong corporate governance structure limit the use of REM (Shahzad et al., 2020). Prior studies provide evidence that earnings management is practiced globally. However, earnings management is often shaped by regional dynamics and industry-specific characteristics. In the context of Pakistan, the sugar industry stands out for its distinct blend of economic, political, structural, and regulatory features. Sugar Industry is the second largest agriculture driven industry in Pakistan (VIS, 2023). The government role in sugar industry is substantial, particularly in the area of price regulation, import and export limitations and financial assistance.

Ranked as Pakistan's second-largest industry, the sugar sector plays a crucial role in the national economy by contributing nearly 0.8% to the country's GDP. It supports the livelihoods of approximately 1.5 million people and was valued at around USD 1,813 million in 2020 (VIS, 2023). These attributes highlight the sector's significant economic importance. The sugar sector in Pakistan is characterized by seasonal production cycles, import/export uncertainty, political influence & Lobbying, weather dependency, subsidy dependent, weak monitoring. These factors make this industry more prone to financial volatility and create a picture of overall uncertainty. As a result, management is often unable to meet its earnings targets. In response to such challenges, management may opt earnings managements practices through real or accruals or the combination of both earning management techniques.

Earning management practices challenge the accuracy and transparency of financial reporting, eventually leading to misguidance of stakeholders. By employing EM, management may get the personal motives in the shorter run but push the organizations towards financial distress in the longer run. Such financial crisis may result in significant losses for investors, breach of supplier agreements, job insecurity for employees, and broader negative implications for the national economy. Existing literature on earnings management in Pakistan lacks comprehensive sector-wise analysis. This study has explored the relationship between AEM and REM in Pakistani Sugar Sector. This study aims to help stakeholders better understand the earnings management strategies employed in the sugar sector, enabling them to make more informed and prudent decisions. This study seeks to

examine the earnings management practices in the sugar industry of Pakistan based on data from 2014 to 2023.

Literature Review

Prior research has examined accrual-based and real earnings management both as independent strategies and in relation to one another, exploring whether firms use them as substitutes or complement in achieving their objectives. Shah et al., (2024) in their study of 150 non-financial listed firms in Pakistan over the period ten years from 2008-2017, found a significant negative relationship between AEM and REM, indicating a substitution effect between these two approaches. Similar negative association is also confirmed by Imran and Malik (2021) in the presence of political risks. Authors studied the 197 Pakistani listed firms on PSX over the period of 2007-2019 and found the substation relationship between real and accrual-based earning management while political risks have positive impact towards REM and insignificant impact on AEM. This substitution association is also confirmed by the Fatima et al., (2023) in their work they took the data of 500 non-financial companies across 22 countries categorized in 8 industries over the period of 2007-2018. The researchers explored the negative association between Ream and AEM in Pakistan.

Other scholars have examined the link between Earning Management and other firm performance indicators. Dakhlallh et al. (2020), analyzing 180 Jordanian listed firms over the period of 2009-2017, observed that both AEM and REM have a significant negative association with firm performance (Tobin's Q). This study highlights that earnings manipulation reduces long-term firm value and misleads stakeholders. Braam et al., (2015) investigated the trade-off between real and accrual EM in the presence of politically connected firms. The authors investigated the 5,493 listed companies across 30 countries, confirmed the politically connected firms are more likely to substitute real earnings management (REM) for AEM due to its higher secrecy and lower detectability. Researches also highlighted financial leverage as key driver of earning management practices. Vakilifard and Mortazavi (2016) examined the impact of financial leverage on earnings management using data from 118 firms listed on the Tehran Stock Exchange between 2008 and 2013. Their data regression analysis revealed that as leverage increases, managers prefer real earnings management (REM) over accrual-based earnings management (AEM).

Financial distress is also a key factor shaping the Earning management. Muljono and Suk (2018), using Indonesian data, reported a positive relationship between financial distress and REM but a negative relationship with AEM. Kazmi et. al., (2024) examined the 96 non-financial listed companies on Pakistan Stock Exchange over the period of 2017-2022 and revealed that financial distress companies are involved in earning managements practices, however, the presence of Big-4 audit firms reduced the effect of this relationship. The same findings are also reported by Viana et. al., (2022). The authors examined the sample of 20 emerging markets over the period of 20 years and concluded that financial distress companies are more engaged in earning management practices but such practices are lower in the companies being audited by Big-4 audit firms. Malik et al., (2019) studied the 20 commercial banks listed on PSX during the period of 2010-2015 and revealed that banks adopt the discretionary & non-discretionary accruals to manage the times of financial distress.

Shahzad et al. (2020) found that strong governance improves earnings quality and controls REM, while Al-Zaqeba et al. (2022) noted that board composition and audit committee independence reduce EM in Malaysian firms. Likewise, Ghaleb et al. (2021) demonstrated that corporate social responsibility (CSR) and board gender diversity significantly reduce REM in Jordanian companies. Enomoto et al. (2015) in their study investigate the 38 countries over the period of 1991-2010 and concluded that stronger investor protection regimes encourage firms to reduce the AEM practices and as substitute use REM, while Ballesta and Yagüe (2020) reveals that SMEs engage in both type of

strategies, depending upon the motives such as avoiding losses, showing stable income, and manage financial issues. Their work highlights that when SMEs need to show higher profits, they focus more on earnings management rather than avoiding taxes. But when there is no pressure to show high profits, SMEs may try different ways to reduce the taxes they pay. Ali et al. (2022) studied that how real earnings management (REM) affects future dividends and company returns. They took the data of 120 manufacturing firms listed on PSX from 2011 to 2020 and found that the association between REM and future returns is negative but insignificant on dividend payments policies. This shows that Pakistani firms are more inclined to show stable dividend payments to maintain the investors trust and interest than showing higher returns.

Variables and Measurement

Discretionary Accrual

Discretionary accruals are calculated using the Modified Jones Model (1995), which is one of the most extensively used models as a proxy for accrual-based earnings management (Shah et al., 2020; Hasan et al., 2020; Al-Zaqeba et al., 2022). In this study we used the discretionary accruals (modified jones model, 1995) as proxy for accrual based earning management.

Discretionary accruals are calculated using cashflow approach as detailed below

Total Accruals = Non-Discretionary Accruals + Discretionary Accruals……**..... (1)**

We can also say that

$$TA_t/A_{t-1} = \alpha_1(\frac{1}{A_{t-1}}) + \alpha_2(\frac{\Delta\ Sales\ Rev_t - \Delta\ Receivables_t}{A_{t-1}}) + \alpha_3(\frac{PPE_t}{A_{t-1}}) + \varepsilon \quad \text{.....(2)}$$

Where;

- TA_t/A_{t-1} = Total Accrual
- $\alpha_1(\frac{1}{A_{t-1}}) + \alpha_2(\frac{\Delta\ Sales\ Rev_t - \Delta\ Receivables_t}{A_{t-1}}) + \alpha_3(\frac{PPE_t}{A_{t-1}})$ = Non -Discretionary Accruals
- ε= Discretionary Accruals

Total Accruals (TA_{it}) = NI (NI_{it}) – Cashflow from operating Activities ($CFOA_{it}$) ……. (3)

Where;

- TA_{it} = Total Accruals of the company i in year t
- NI_{it}= Net Income of Company i in year t
- $CFOA_{it}$ = Operating Cash Flow of company i in year t.

i. **on – Discretionary Accruals =** $\alpha_1(\frac{1}{A_{t-1}}) + \alpha_2(\frac{\Delta\ Sales\ Rev_t - \Delta\ Receivables_t}{A_{t-1}}) + \alpha_3(\frac{PPE_t}{A_{t-1}})$.....(4)

Where:

- A_{t-1} = Total Assets at the end of year t-1
- $\Delta\ Sales\ Rev_t$ = Sales Revenues in year t less Revenues in year t-1
- $\Delta\ Receivables_t$ = Receivables in year t less Receivables in year t-1
- PPE_t = Gross Property Plant and Equipment at the end of year t
- All of the above-mentioned variables are scaled by lagged totals assets.
- α 1, α 2, α 3 are company specific parameters.

Draw the value of Total Accruals (from equ. 3) and Non-Discretionary Accruals (from equ. 4) and put them in equation 2 and estimate the value of discretionary Accruals ($\boldsymbol{\varepsilon}$) using the STATA for each firm for each year.

Real Earning Management

Roychowdhury Model, 2006 is the most powerful model used to estimated the real EM (Nguyen et al., 2023; Ghaleb et al., 2021). In this study we used Roychowdhury Model, 2006 as proxy for real earning management. The proxies for REM are divided into following 3 types of abnormal levels

- Cash flows from Operations
- discretionary expenses
- Cost of Production

Abnormal Cash flow from Operations

$$Ab - CF_t/Ast_{t-1} = \alpha_1(\frac{1}{Ast_{t-1}}) + \alpha_2(\frac{Sales_t}{Ast_{t-1}}) + \alpha_3(\frac{\Delta Sales}{Ast_{t-1}}) + \varepsilon \quad \text{.....(1)}$$

Abnormal Production Cost

$$Ab - PRD_t/Ast_{t-1} = \alpha_1(\frac{1}{Ast_{t-1}}) + \alpha_2(\frac{Sales_t}{Ast_{t-1}}) + \alpha_3(\frac{\Delta Sales}{Ast_{t-1}}) + \alpha_4(\frac{\Delta Sales_{t-1}}{Ast_{t-1}}) + \varepsilon \quad \text{.....(2)}$$

Abnormal Discretionary Expenses

$$Ab - DISEP_t/Ast_{t-1} = \alpha_1(\frac{1}{Ast_{t-1}}) + \alpha_2(\frac{Sales_{t-1}}{Ast_{t-1}}) + \varepsilon \quad \text{.....(3)}$$

By combining all the above equations (1, (2) & (3) as stated below, we get the value of REM

REM = (Abnormal Cashflow from Operations x -1) + (Abnormal Production Cost) + (Abnormal Discretionary Expenses x – 1)

Control Variable

The financial health of a company is commonly assessed through its debt levels and performance ratios. Therefore, two control variables, Leverage and Return on Assets (ROA) are included in the analysis to account for their influence on managerial reporting incentives.

These variables have been used by many studies (Shah et al., 2024; Ali et al., 2022; Ballesta & Yagüe, 2020)

Leverage = Total Liabilities / Total Equity

Return on Asset = net income / Average of current & previous years (total assets)

Table 1
List of Variables

Variable	Measurement	Reference
Discretionary Accrual	$\frac{TA_t}{A_{t-1}} = \alpha_1(\frac{1}{A_{t-1}}) + \alpha_2\left(\frac{\Delta Sales\ Rev_t - \Delta Receivables_t}{A_{t-1}}\right) + \alpha_3(\frac{PPE_t}{A_{t-1}}) + \varepsilon$	Modified Jones Model, 1995
Roychowdhury Model, 2006	REM = (Abnormal Cashflow from Operations x -1) + (Abnormal Production Cost) + (Abnormal Discretionary Expenses x – 1) i. Abnormal cashflow: $\frac{Ab-CF_t}{Ast_{t-1}} = \alpha_1(\frac{1}{Ast_{t-1}}) + \alpha_2\left(\frac{Sales_t}{Ast_{t-1}}\right) + \alpha_3(\frac{\Delta Sales}{Ast_{t-1}}) + \varepsilon$ ii. Abnormal Production cost	Roychowdhury Model, 2006

	$\frac{Ab-PRD_t}{Ast_{t-1}} = \alpha_1(\frac{1}{Ast_{t-1}}) + \alpha_2\left(\frac{Sales_t}{Ast_{t-1}}\right) + \alpha_3(\frac{\Delta Sales}{Ast_{t-1}}) + \alpha_4\left(\frac{\Delta Sales_{t-1}}{Ast_{t-1}}\right) + \varepsilon$ iii. Abnormal Discretionary Expenses $Ab - DISEP_t/Ast_{t-1} = \alpha_1(\frac{1}{Ast_{t-1}}) + \alpha_2(\frac{Sales_{t-1}}{Ast_{t-1}}) + \varepsilon$	
Size of Firm (Sz)	Natural Log of total Assets	Shah et al., 2024
Return on Asset (RoAst)	Net Income / Total Assets (Average)	Ali et al., 2022
Current Ratio (CaCl)	Current Asset/Current Liabilities	Rusci et., al., 2021
Leverage (D/Equity)	Total Liabilities / Total Equity	Shah et al., 2024
Return on Asset	Net Income / Total Assets (Average)	Ali et al., 2022

Material and Methods

Quantitative approach and secondary data is used to explore the relationship among the variables. All listed Sugar Companies on Pakistan Stock Exchange from the period of 2014 to 2023. There are 31 listed companies in the period under consideration. However, due to unavailability of data final sample of 27 listed sugar firms is taken for analysis. Report available on the website of State Bank of Pakistan titled financial statement analysis of non-financial companies and audited -financial statement uploaded on the website of Pakistan Stock Exchange are used for the analysis. Panel data methodology is employed for the analysis. The available options were Fixed Effect Model, Random Effect Model and Pooled OLS model. The fixed-random effect models were applied on AEM & REM models separately. The values of Hausman test in AEM model (0.3589) and REM model (0.256) suggest the Random effect model while the values of Breusch Pagan Lagrarian Multiplier (BPLM) test for AEM model (0.296) and REM model (0.357) suggest that Pooled OLS is the appropriate model for analysis. The following equations specified the regression models for OLS estimation;

$$AEM_{it} = \beta_0 + \beta_1 REM_{it} + \beta_2 Sz_{it} + \beta_3 RoAst_{it} + \beta_2 \text{CaCl}_{it} + \beta_2 \text{D/Equity}_{it} + \varepsilon_i$$
$$REM_{it} = \beta_0 + \beta_1 AEM_{it} + \beta_2 Sz_{it} + \beta_3 RoAst_{it} + \beta_2 \text{CaCl}_{it} + \beta_2 \text{D/Equity}_{it} + \varepsilon_i$$

Where

AEM = Discretionary accruals (Modified Jones Model, 1995)
REM = Real Accrual (Roychowdhury Model, 2006)
Sz = Size of the firm
RoAst = Return on Assets
CaCl = Current Ratio
D/Equity = Leverage

Results and Discussion

Table 2
Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
AEM	-2.09E-10	0.1449846	-0.35729	0.933407
REM	-0.0009952	0.3115779	-0.66376	2.167064
Sz	15.56003	0.8157837	13.69263	18.02328
ROAst	1.638261	8.058911	-21.2605	33.77808
CaCl	1.000309	0.8322417	0.02597	7.933566
D/Equity	1.074322	10.31176	-98.2433	42.72596

The average value of AEM (-2.09E-10) is extremely small and close to zero, indicating that accrual-based earnings management is almost negligible in the sugar industry of Pakistan. However, the negative sign suggests a tendency toward downward earnings manipulation, implying that firms may be reducing current profits strategically to benefit in the future. The Standard Deviation (0.1449) depicts the moderate variation across

the firms. The minimum (–0.3572) and maximum (0.9334) values indicate that the sample includes firms engaging in both significantly income-decreasing strategies and strong income-increasing strategies through accrual-based earnings management. The average value of REM (-0.0009) is also near to zero with negative sign, showing the inclination of downward REM. Standard deviation (0.311) is relatively small showing the normal spread of firms in the sample. Min (-0.6637) depicts the negative implication of REM while max (2.1670) shows the very strong tendency towards upward REM. The mean values of Size, ROAst, CaCl, and D/Equity are (15.5600), (1.6382), (1.0003) & (1.0743) respectively showing normal behavior. Standard deviation of ROAst is relatively high (8.0581) indicating the significant variation in the profitability of the firms. The same is further supported by the Min (-21.2605) and Max (33.7780) values of the RoAst in the sample. Standard deviation of D/Equity is also high (10.3117) showing the strong divergence in the dataset. The same is shown by the Min and Max values (-98.2433) and (42.7259) respectively.

Table 3
Correlation Matrix

		AEM	REM	Sz	ROAst	CaCl	D/Equity
1.	AEM	1					
2.	REM	0.7667	1				
3.	Size	0.0887	0.0293	1			
4.	ROA	0.1283	-0.401	0.1781	1		
5.	CACL	0.008	-0.2605	-0.1968	0.5129	1	
6.	D/Equity	0.077	0.0058	0.0372	0.0813	0.0318	1

The correlation matrix given in table 3 above indicates the strong and significant relationship between AEM and REM (0.7667). This shows that sugar sector of Pakistan employs the both AEM and REM tactics in reporting the earnings. ROAst shows the negative and moderate relationship with REM. CaCl shows the positive and moderate relationship with ROAst. Most other relationships are weak and negligible.

Table 4
Pooled OLS Results

Variables	Dependent Variable AEM		Dependent Variable REM	
	Co-efficient	P-value	Co-efficient	P-value
AEM			1.769098***	0.000
REM	.453671***	0.000		
Sz	-.0048049	0.368	.014398	0.171
RoAst	.0093947***	0.000	-.01965***	0.000
CaCl	-.0022575	0.705	.000526	0.964
D/Equity	.0003965	0.306	-.00049	0.520
Constant	.0602816	0.478	-.1895304	0.258
R-squared	0.8075		0.8371	
Prob (F-Statistics)	0.0000		0.0000	
Number Of Observations	256		256	

Statistical significance is represented by *** at 1%.

The results of F-statistics show that both models are statistically fit/significant. The R-square values of AEM model shows that 80.75% variability in the AEM is explained by the independent variable (REM) and other control variables and R-square value of REM model predicts that 83.7% volatility in REM is explained by the independent (AEM) and other control variables. The findings of the regression suggest that AEM and REM are used together in the sugar industry of Pakistan, supporting their complementary relationship. The values of co-efficient in AEM and REM models are positive and significant at 1% level. However, in AEM model co-efficient value (.4536) indicates that 1 unit increase REM will increase the (.4536) unit in AEM, showing firms engage more in REM will tend to increase AEM in a complementary manner. Whereas, in REM Model, coefficient value (1.7690)

indicates that 1 unit increase in AEM will increase 1.7 units in REM. This suggests that firms more engaged in AEM will intensively employ REM strategies to manipulate earnings. Moreover, Return on Assets (RoAst) is also showing positive significant association with in both models. Furthermore, Sz, CaCl, & D/Equity all have insignificant association with the respective dependent variables.

Conclusion

This study explored the prevailing trends in the use of Accrual and Real Earning Management practices within Sugar Industry of Pakistan. The study uses the data of 27 listed sugar companies on the PSX over the past 10 years 2014 to 2023. Modified Jones Model 1995 is used as proxy for estimating the accruals earning management while Roychowdhury Model, 2006 is employed for the estimation of Real earning management. Based on Hausman and Breusch-Pagan Lagrange Multiplier Tests Pooled OLS model was selected for estimation. AEM Model and REM Model were run separately to explore the relationship among the variables. The results confirmed a complementary relationship between AEM and REM. By applying both tactics simultaneously, management can strengthen the impact of earnings manipulation and achieve targeted goals without being exposed (Al-Absy et al., 2021; Al-Haddad et al., 2019; Das et al., 2017). Accrual earnings management based on estimates and judgments, allowing the auditors and stakeholders to identify and assess the impact easily. In contrast, real earnings management is more difficult to detect but may have adverse long-term consequences for the firm.

Recommendations

This study provides valuable insights for all stakeholders by explaining the techniques companies use to adjust or manipulate their earnings. It emphasizes that reported profits may not always reflect the true financial performance of a firm. By being aware of these practices, investors, creditors, regulators, and other stakeholders can make more informed decisions and avoid relying solely on surface-level numbers. Understanding the difference between real financial performance and manipulated results is critical for protecting investments, ensuring fair regulations, and maintaining trust in financial markets.

References

Al-Absy, M., Ismail, K. N. I. K., & Chandren, S. (2021). *The association between real activities and accruals earnings management in Malaysian listed companies*. Contaduría y administración, 66(3), 1-31

Al-Haddad, L., & Whittington, M. (2019). The impact of corporate governance mechanisms on real and accrual earnings management practices: evidence from Jordan. *Corporate Governance: The International Journal of Business in Society*, *19*(6), 1167-1186.

Ali, S., Jiang, J., Murtaza, G., & Khan, M. (2022). Influence of real earning management on subsequent dividend payout decisions and corporate returns: A case of developing economy. *Frontiers in Environmental Science*, *10*, 882809.

Al-Zaqeba, M. A. A., Abdul, H. S., Ineizeh, N. I., Hussein, O. J., & Albawwat, A. H. (2022). The effect of corporate governance mechanisms on earnings management in Malaysian manufacturing companies. *Asian Economic and Financial Review*, *12*(5), 354.

Banks, J. E. (2018). *Toshiba accounting scandal. A case study in corporate governance failure.* In International Conference on Human Rights, E-Commerce, Marketing, and Management Proceedings (pp. 94-98).

Braam, G., Nandy, M., Weitzel, U., & Lodh, S. (2015). Accrual-based and real earnings management and political connections. *The International Journal of Accounting*, *50*(2), 111-141.

Chen, J. Z., Rees, L. L., & Sivaramakrishnan, S. (2010). *On the use of accounting vs. real earnings management to meet earnings expectations-a market analysis*. Real Earnings Management to Meet Earnings Expectations published by A Market Analysis

Dakhlallh, M. M., Rashid, N., Abdullah, W. A. W., Qawqzeh, H. K., & Dakhlallh, A. M. (2020). Accrual-based earnings management, real earnings management and firm performance: evidence from public shareholders listed firms on Jordanian's stock market. *Journal of Advanced Research in Dynamical and Control Systems*, *12*(1), 68-79

Das, R. C., Mishra, C. S., & Rajib, P. (2017). Real versus accrual-based earnings management: do Indian firms prefer one over the other?. *Paradigm*, *21*(2), 156-174.

Dechow, P. M., Huson, M. R., & Sloan, R. G. (1994). The effect of restructuring charges on executives' cash compensation. *Accounting Review*, *69*(1), 138-156

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. The Accounting Review, 70(2), 193–225.

Enomoto, M., Kimura, F., & Yamaguchi, T. (2015). Accrual-based and real earnings management: An international comparison for investor protection. *Journal of Contemporary Accounting & Economics*, *11*(3), 183-198.

Fatima, K., Javaid, A., & Karamat, M. (2023). Trends in Earning Management (EM) Practices: A Cross Country and Industrial Analysis. *Journal of Finance and Accounting Research*, *5*(1), 51-76

Gelb, D. S., & Zarowin, P. (2002). Corporate disclosure policy and the informativeness of stock prices. *Review of accounting studies*, *7*, 33-52.

Ghaleb, B. A. A., Qaderi, S. A., Almashaqbeh, A., & Qasem, A. (2021). Corporate social responsibility, board gender diversity and real earnings management: The case of Jordan. *Cogent Business & Management*, *8*(1), 1883222.

Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of accounting and economics*, *7*(1-3), 85-107.

Healy, P. M., & Wahlen, J. M. (1999). A review of the EMliterature and its implications for standard setting. Accounting Horizons, 13(4), 365–383.

Hoang, K. M. T., & Phung, T. A. (2019). The effect of financial leverage on real and accrual-based earnings management in Vietnamese firms. *Economics & Sociology*, *12*(4), 299-333.

Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of political economy*, *98*(2), 225-264.

Kazmi, S. T. F. H., Rasheed, B., Malik, Z. F., Shakeel, A., & Gulzar, M. (2024). Impact of financial distress on earnings management with the moderating role of audit quality: Evidence from Pakistan. *Journal of Economic Impact*, *6*(1), 37-43.

Khunkaew, R., & Qingxiang, Y. (2019). Substitution between accruals-based and real activities earnings management of listed Thai firms. *Journal of Corporate Accounting & Finance*, *30*(4), 99-110.

Laux, C., & Laux, V. (2009). Board committees, CEO compensation, and earnings management. *The accounting review*, *84*(3), 869-891.

Li, Y., Li, X., Xiang, E., & Djajadikerta, H. G. (2020). Financial distress, internal control, and earnings management: Evidence from China. *Journal of Contemporary Accounting & Economics*, *16*(3), 100210.

Malik, A., Din, S. U., Shafiq, M., Butt, B. Z., & Aziz, H. (2019). Earning Management and the Likelihood of Financial Distress in Banks—Evidence from Pakistani Commercial Banks. *Public Finance Quarterly= Pénzügyi Szemle*, *64*(2), 208-221.

Muljono, D. R., & Suk, K. S. (2018). Impacts of financial distress on real and accrual earnings management. *Jurnal Akuntansi*, *22*(2), 222-238.

Nguyen, T. T. H., Ibrahim, S., & Giannopoulos, G. (2023). Detecting earnings management: a comparison of accrual and real earnings manipulation models. *Journal of Applied Accounting Research*, *24*(2), 344-379.

Potharla, S. (2023). Impact of real earnings management on earnings persistence–evidence from India. *International Journal of Emerging Markets*, *18*(11), 5454-5476.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. Journal of Accounting and Economics, 42(3), 335–370.

Said, I., & Malik, I. R. (2020). Country-level Risk and the Tradeoff between Real Earnings Management and Accrual Earnings Management: Evidence from Pakistan. *Published in NUST Business Review, NBR-20-0018*, *2*(02), 12.

Sánchez-Ballesta, J. P., & Yagüe, J. (2021). Financial reporting incentives, earnings management, and tax avoidance in SMEs. *Journal of Business Finance & Accounting*, *48*(7-8), 1404-1433.

Schipper, K. (1989). Commentary on earnings management. Accounting horizons, 3(4), 91-102.

Shahzad, A., Nazir, M. S., Qamar, M. A. J., & Abid, A. (2023). Impact of corporate governance on firm value in the presence of earning quality and real earnings management. *International Journal of Business Excellence*, *29*(3), 409-436.

Shah, S. F., Rashid, A., & Malik, W. S. (2024). Potential substitution between accrual earnings management and real earnings management among Pakistani listed firms. *Global Business Review*, *25*(1), 180-197.

Vakilifard, H., & Mortazavi, M. S. (2016). The impact of financial leverage on accrual-based and real earnings management. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *6*(2), 53-60.

Viana, D. B. C., Lourenço, I., & Black, E. L. (2022). Financial distress, earnings management and Big 4 auditors in emerging markets. *Accounting Research Journal*, *35*(5), 660–675.