NUST Business School
NUST Business Review
An International Journal
NBR

EARNINGS SMOOTHING OR FINANCIAL MANIPULATION? AN EMPIRICAL INVESTIGATION OF REVENUES RECLASSIFICATION USING EXPECTED REVENUE MODEL

Received: 28 june 2025
Revised: 07 July 2025
Accepted: 06 August 2025
Published: 30 August 2025

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NBR
NUST Business Review
ID: NBR25061601
Vol. 07 (01)
08, 2025
pp. 1-25
DOI: https:doi.org/10.37435/nbr.v7i1.110

ABSTRACT

Purpose: This study aims to identify red flags indicating the prevalence of earnings management in a politically influential and financially volatile industry susceptible to economic biases and government intervention.
Design/Methodology: By operationalizing an expected revenue model, this quantitative study provides empirical evidence of earnings manipulation in Pakistan's sugar sector, using an unbalanced panel of 168 observations over six years (2018–2023) from firms listed on the Pakistan Stock Exchange (PSX).
Findings: The results of dynamic regression models based on the expected revenue approach reveal a positive and significant intercept term, indicating that a substantial portion of firms reported operating revenues remain unexplained.
Theoretical/Practical/Social Implications: The findings have important implications for investors, regulators, and auditors in Pakistan's sugar sector, enhancing understanding of earnings management practices and their potential consequences.
Originality/Value: Using a novel approach, this study contributes to the literature by providing empirical evidence of earnings manipulation through expected revenue model in a developing-country context.
Keywords: *Earnings Management, Expected Revenue Model, Classification Shifting, Accruals Management, Real Activity Management*
Paper type: Research Paper

INTRODUCTION

The manipulation of financial reporting to conceal the relevant and faithful financial information of entity is identified as earnings management which remains a critical concern for stakeholders in publicly traded companies (Malikov et al., 2018; Bansal, 2024). Managers opportunistically employ judgment in financial reporting and transaction structuring to influence financial statements, potentially misleading stakeholders about a company's economic affairs (Smaili et al., 2022). Regulatory bodies and accounting standards across the globe require firms to report relevant and

reliable financial information and any deviation from these accounting standards are perceived as earnings management which can disintegrate the reliability of financial statements, compromising their value for decision-making, as it represents a distortion of financial communication between managers and external parties (Rehman et al., 2024; Utami et al., 2019). Motivations for earnings management range from boosting market capitalization and management compensation to reducing the cost of capital (Shah, & Wan, 2024). Therefore, according to positive accounting theory, managers adopt earnings management to maximize their utility including but not limited to influence equity valuations, inducing debt covenants opportunistically and persuading imbursements (Salato et al., 2024).

The opportunistic financial reporting by managers creates agency problems, leading to conflicts of interest between managers and shareholders. Earnings management, also referred to as earnings manipulation, involves strategic actions taken within or outside the bounds of accounting principles to alter reported earnings (Subastian et al., 2021). Some consider this phenomenon a legal way of managing profits, while others consider it to be an illegal manipulation of profits (Strakova, 2020) but in either case this phenomenon is deemed to be unethical practice across the globe thus this practice is discouraged by regulators and accounting standard boards due to outset of information asymmetry (Ali et al.,2024). Earnings management manifests in various forms, including accrual-based earnings management, real earnings management, and classification shifting (Bansal, 2024; Ishak et al., 2018). Accrual-based earnings management involves using accounting discretion to manipulate reported earnings through estimates and accruals, while real earnings management entails altering operational decisions, such as production levels or discretionary expenses, to achieve desired earnings targets (Davis & Khadivar, 2024). A contemporary practice of earnings manipulation being adopted by managers is classification shifting of costs or revenues which fundamentally do not have any impact on the net profits (Rehman et al., 2024).

Therefore, classification shifting being a subtler form, involves misclassifying items within the income statement without affecting net income, potentially misleading investors about the sources and sustainability of a company's earnings (Vernando & Mustakini, 2025; Malikov et al., 2018) thus, managers might shift non-operating revenues to boost operating revenues. In the context of ethical considerations, such deceptive practices including earnings management, are viewed as unethical due to their compromise of the financial reporting system's integrity and the hindrance of transparent business operations (Fowler, 2023). Consequently, these practices deter the stakeholders right to have relevant and reliable financial information for decision making. Therefore, the use of aggressive accounting practices to artificially inflate or deflate sales, profits, or returns is referred to as earnings management (Strakova, 2020). Managers may adopt real earnings management by making decisions about a company's operating activities, or they may manage profits by other means. The size of a company can be a determinant of earnings management practices, though the direction of the effect is debated (Kurniawati & Panggabean, 2020). Smaller companies may have fewer resources and weaker internal controls, making them

more susceptible to earnings management, while larger companies may face greater pressure to meet earnings expectations (Asim & Ismail, 2019).

A contemporary practice of earnings management adopted by managers is classification shifting as firms might have more incentives to inflate operating revenues than to understate core expenses through misclassification, because an increase in operating revenues is more valued by investors than a decrease in core expenses (Boahen & Mamatzakis, 2025). Moreover, analysts issue forecasts for sales revenue in addition to core earnings; managers can more readily meet both of these forecast targets by shifting non-operating revenues to sales operating revenues rather than misclassifying core expenses as non-recurring expenses (Malikov et al., 2018) therefore firms sometimes shift transitory gains to operating revenues to signal that their income is mainly from operating activities. Prior research indicates that firms might overstate operating revenues by offering price discounts or lenient credit terms (Voon & Ma, 2024) thus managers tend to shift operating revenues to non-operating revenues or vice versa to achieve specific goals which are conferred by positive accounting theory. This contemporary form of earnings management is even more detrimental as investors tend to give greater weight to individual line items in the income statement, particularly operating revenues, when assessing a firm's financial performance (Anagnostopoulou & Malikov, 2024).

Earnings management can be motivated by various factors, including the desire to meet or beat analyst forecasts, increase management compensation, or avoid regulatory scrutiny. Consequently, managers adopt various earnings management practices including but not limited to expected revenue approach which is the basis of classification shifting (Vernando & Mustakini, 2025). Positive accounting theory, being operationalized as anchoring theory in this research study, postulates that managers make accounting choices to maximize their own utility, which may involve manipulating earnings to achieve personal or organizational goals (Md et al., 2024). Therefore, the purpose of this research study is to investigate the red flags indicating the prevalence of earnings manipulation in sugar industry of Pakistan using expected revenue model which is also operationalized in the study of (Anagnostopoulou & Malikov, 2024; Malikov et al., 2018; Rehman et al., 2024) to detect earnings manipulations using classification shifting of revenues. The sugar sector in Pakistan presents a unique context for examining earnings management due to its inherent volatility, regulatory complexities, and significant impact on the national economy. With both economic and political significance in the industry, there is a high risk of earnings management, in this case, the classification shifting earnings management, which needs scholarly as well as regulatory attention. The sugar industry is particularly vulnerable to earnings management due to the cyclical nature of sugar production, government regulations, and the presence of powerful family-owned businesses (Franzoi et al., 2021) consequently due to cyclical nature of revenue generation in this specific sector, managers have more flexibility to manipulate earnings. Moreover, Firms with strategies that significantly deviate from conventional industry strategies are more likely to adjust their earnings, potentially due to increased scrutiny or a desire to manage investor perceptions (Wang & Zhao,

2018). Although, majority of the earnings management studies in Pakistan have concentrated on accruals and real activities, not much has been done on classification shifting, especially, in the sugar sector. The Cyclical earnings, inherent political influence, and failure of regulation oversight of the sugar sector in Pakistan define it as a risky environment to the earnings management practices involving shifting the classification.

Therefore, the examination of earnings management within specific industries is crucial for understanding the nuanced ways in which companies manipulate financial reporting to meet specific objectives (Malikov et al., 2018). Thus, this study fills a gap in literature by providing empirical evidence on the prevalence of earnings manipulation using expected revenue model which is fundamental approach to detect earnings management using classification shifting in a developing-country context. Most research on revenue misclassification focuses on developed markets such as US, UK, East Asia, with little known about firms in South Asia therefore limited research exists on this phenomenon in developing economies, particularly in Pakistan's sugar industry, which is politically influential and financially volatile. By documenting systematic revenue overstatement in Pakistan's sugar industry, this research extends the earnings-management literature. While prior studies have examined earnings manipulation via accruals or real activities, classification shifting of revenues using expected revenue approach remains underexplored, creating a critical research gap. This study addresses this gap by investigating whether firms in sugar sector in Pakistan engage in revenue reclassification to inflate operating performance, especially given the industry's cyclical nature and regulatory pressures. The significance of this study becomes more crucial because of its potential to uncover opaque financial reporting practices in a sector prone to economic distortions and government intervention. By analyzing revenue misclassification patterns, the research can provide insights into how firms manipulate earnings to meet benchmarks, avoid scrutiny, or secure favorable policies. The findings of this study have important implications for regulators, auditors, and investors, highlighting the need for stricter disclosure requirements and enhanced governance mechanisms to curb misleading financial reporting. Additionally, the study contributes to the broader literature on earnings management in emerging markets, offering a contextual understanding of classification shifting tactics within a politically sensitive industry.

LITERATURE REVIEW

Earnings management, a pervasive phenomenon, involves the fabrication of reported financial information to present a biased view of a company's performance by encompassing a range of techniques employed by managers to influence reported earnings often with the intention of meeting specific objectives (Goel & Kapoor, 2022; Ishak et al., 2018). Experts hold diverse perspectives on earnings management, with some viewing it as a legitimate means of managing profits and others criticizing it as an illegal manipulation of financial results (Durana et al., 2022) thus their research concluded that earnings management is unethical and illegal practice adopted by

managers because it results in deprivation of relevant and faithful financial information for stakeholders hence establishing information asymmetry ripples.

One of the earliest attempts to detect earnings management was due to Hepworth (1953) who described possible methods of smoothening profits but not the identification method. Then Gordon (1964) developed the first graphical technique stating that accounting options were related to a smoother earnings experience but did not provide any empirical outputs. Following research such as Gordon et al. (1966) modeled a deterministic approach but it was not sufficient to generate decisive empirical results because of the experimental limitations. Archibald (1967) was able to provide some empirical evidence, and the study analyzed the changes in depreciation but was unable to associate it with earnings management. Later, researchers attempted the probabilistic method such as Copeland (1968) applied a variety of smoothing proxies; however, the study had validity issues because of samples and time problems. A first major breakthrough was the work by White (1970) who developed a regression analysis and discovered other, hidden factors in addition to discretionary choices which were later on enhanced and confirmed by several researchers before the three major practices of earnings management (Beidleman 1973).

Earnings management can be generally categorized into three main types: accrual-based earnings management, real earnings management, both were frequently adopted till first decade of twenty first century, and a contemporary classification shifting earnings management (Bansal, 2024; Lizińska & Czapiewski, 2018; Nguyen et al., 2023). Jones, (1991) expectation model included the control variables for effects of change in economic environment as well as to control the non-discretionary expenses. Later, Dechow et al, (1995) suggested the modification in Jones model. The study contemplates the existing Jones model and found that the model has computational error pertaining to measurement of discretionary accruals. Accrual-based earnings management involves the manipulation of accounting accruals, which are estimates and judgments used to translate business activities into financial statements thus this specific practice fundamentally involves opportunistically utilizing the mismatch between accounting transactions, based on accruals basis of accounting, and cashflows (Hsieh et al., 2021).

While real earnings management, on the other hand, involves altering real business activities to achieve desired earnings outcomes. This includes actions such as accelerating sales, delaying research and development expenditures, or overproducing goods to reduce per-unit costs thus unlike to earlier technique this specific practice primarily grounded on speculative consumption of resources by delaying or advancing recognition of proceeds and expenditure outlays (Chang et al.,2022). In contrast to former earnings manipulation practices, earnings management through classification shifting using the expected revenues model is a sophisticated approach that accents on misclassifying the reported financial information with the intent to influence the financial decisions of stakeholders by disseminating the false market signals (Malikov et al., 2018; McVay, 2006; Rehman et al., 2024). The expected revenue model, operationalized by these researchers, is based

on unveiling the plausible association between predictors and expected or reported revenues and then identifying any unexplained segment of these revenues through determining the residuals. Within the realm of earnings management detection, the expected earnings model has emerged as a widely used tool for identifying deviations from normal earnings patterns (Zalata, & Abdelfattah, 2021). Therefore, the convergence of Positive Accounting Theory and the expected earnings model provides a powerful approach for detecting earnings management.

Anchoring Theory

Positive Accounting Theory, in contrasting with normative accounting theory, elucidates that managers tend to employ such techniques to modify the financial outlook of firm financial affairs with the purpose of achieving individual or institutional gains at the cost of stakeholder's gains (Olaoye & Adeleke, 2021) furthermore integrating PAT with the expected earnings model enhances the ability to detect earnings management by providing a theoretical basis for understanding why managers might engage in such practices and by identifying the specific circumstances under which earnings management is most likely to occur (Rehman et al., 2024). The theory's focus on the rational, self-interested behavior of managers makes it a valuable tool for understanding why companies might resort to earnings management techniques like classification shifting. There are mainly three assumptions, incentive plans, debt agreement and political costs, of this specific theory which illustrates that managers have a predisposition for adoption of such manipulation. This theory provides a framework for understanding and predicting accounting choices made by managers (Binda & Qadir, 2024). Furthermore, PAT suggests that managers are rational actors who make accounting decisions to maximize their own self-interest. Thus, classification shifting, a specific form of earnings management, involves strategically reclassifying items within the income statement to portray a more desirable financial picture for better incentives. Finally, positive accounting theory is concerned with explaining accounting practice and predicting firms' accounting choices, and it describes the choices that firms make in specific situations and managers are more likely to engage in earnings management when their compensation is tied to reported earnings or when they face pressure from investors and analysts to meet earnings targets (Iatridis & Kadorinis, 2009; Kurniawati & Panggabean, 2020).

Lagged Revenues as predictor of expected revenues

The complex relationship between past sales performance and anticipations for future financial outcomes constitutes a basis for forecasting and strategic planning, warranting rigorous investigation and comprehensive analysis. The utilization of lagged sales revenue as a predictive variable stems from the inherent assumption that historical performance patterns often exhibit a degree of persistence, thereby offering valuable insights into potential future trends (Malikov et al., 2018). Either revenues are earned from sales or services both have predictive value for forecasting future sales or it can also be inferred that lagged revenues can predict current revenues. Sales

forecasts are predictions derived from historical sales data and analyses of anticipated market conditions, playing a crucial role in various management and control decisions (Gahirwal, 2013). Lagged values, which represent data points from prior periods, encapsulate the cumulative effects of multifaceted factors, including marketing initiatives, competitive dynamics, and macroeconomic conditions, providing a holistic reflection of the firm's recent performance trajectory (Simanjuntak & Tjandrawinata, 2011).

The enhancing qualitative characteristics of financial statements also requires presenting past and current period figures of revenue and other financial statement items to achieve compatibility. Though, some research studies have also concluded otherwise explaining that the temporal dependencies inherent in sales data, where current performance is not solely determined by contemporaneous factors but also influenced by the reverberating effects of past events (Azizah et al., 2021).Lagged revenues operationalized in this study to predict the expected revenues are significant in such a way that along with other predictors if there remain any unexpected or unexplained revenues thus this can indicate the prevalence of earnings management. Accurate revenue forecasting is also critical for effective inventory management, allowing businesses to optimize stock levels and minimize the risk of stockouts or excess inventory (Chavan et al., 2020). Moreover, precise revenue predictions facilitate informed resource allocation, enabling companies to align production schedules, staffing levels, and marketing budgets with anticipated demand fluctuations (Koochakpour & Tarokh, 2017).

Lagged reported revenues are being the reliable predictor of current or reported revenues have significant impact on revenue forecasting which can mobilize and complete the transformation from use value to value (Xu, 2023). Furthermore, this research study further explains from a financial perspective that reliable sales forecasts are indispensable for budgeting, financial planning, and investor relations, providing a foundation for setting revenue targets, projecting cash flows, and managing investor expectations. Though many research studies concluded that lagged revenues as reliable predictor of expected revenues(Malikov et al., 2018) but some research studies have also emphasized the importance of stable economic conditions are necessary thus the effectiveness of lagged sales revenue as a predictor is contingent upon a multitude of factors, including the stability of the market environment, the consistency of the firm's strategic direction, and the presence of disruptive events that may alter established patterns (Banker & Chen, 2006). The modelling based upon using lagged revenues being the predictor of expected revenues can also enable firms to better manage their working capital by optimizing investments in inventory, accounts receivable, and other current assets. Thus, based on the above literature review, the first hypothesis of this study is:

H1: There is an association between lagged operating revenues and expected operating revenues.

Lagged Market-to-Book Ratio as a Predictor of Expected Revenue Growth

The market-to-book ratio, a fundamental metric reflecting the market's valuation of a company relative to its book value, encapsulates investor sentiment regarding future growth prospects and the efficiency of asset utilization (Malikov et al., 2018). A high market-to-book ratio often signals that investors anticipate substantial future earnings growth, driven by factors such as innovative products, expanding market share, or superior management (Hidayat, 2022) thus this study highlighted that market to book ratio have direct association with expected revenues in such way that a positive market to book ratio attracts investments which ultimately utilized for expansion consequently having favorable impact on expected revenues. Conversely, a low market-to-book ratio may indicate skepticism about a company's ability to generate future profits, potentially stemming from concerns about competitive pressures, technological obsolescence, or operational inefficiencies (Novy-Marx, 2013). The market-to-book ratio serves as a barometer of investor confidence, influencing resource allocation decisions and shaping market dynamics (Antara & Suryantini, 2019). The applicable literature suggests positive market to book ratio as proxy of future growth is directly associated with investor confidence which ultimately induces investments (Asiri, 2015).

The lagged market-to-book ratio, representing the market-to-book ratio from a prior period, presents a historical dimension to the analysis, allowing for the assessment of how past market valuations influence subsequent revenue generation (Bernard, 1994). This lagged relationship acknowledges that investment decisions and strategic initiatives undertaken in response to past market signals often take time to materialize in the form of increased revenues. In contrast, few researchers also concluded that lagged market to book ratio can produce biased results thus predicting expected revenues based on this biased predictor may hinder the reality (Beaver & Ryan, 2000). Though many researchers emphasized that by incorporating the lagged market-to-book ratio into predictive models, analysts can capture the dynamic interplay between market expectations, managerial actions, and revenue outcomes (Cheng, 2005). The study further highlighted that the use of lagged variables helps to mitigate potential endogeneity issues, where current revenues might simultaneously influence the market-to-book ratio. While few studies also emphasized the significance of operationalizing the lagged market to book ratio along with other relevant interpreters to reliably predict expected revenues thus the predictive power of the lagged market-to-book ratio can be further enhanced by considering its interaction with other relevant variables, such as asset turnover, research and development expenditure, and marketing expenditure (Simanjuntak & Tjandrawinata, 2011).

Examining the relationship between the lagged market-to-book ratio and expected revenues involves considering several key factors that drive revenue growth. The relevant literature also highlights that lower market to book ratio is not associated with lower future revenues because other factors may also be the contributors depending on the industry thus the predictive power of market to book ratio can vary industry to industry (Donnelly, 2014). While firms with high market-to-book ratios may be more inclined to invest in growth opportunities, such as new product

development, market expansion, or acquisitions, anticipating that these investments will generate future revenue streams (Alberg & Lipton, 2017). These investments, however, require time to translate into tangible revenue increases, justifying the use of a lagged market-to-book ratio in predictive models (Malikov et al., 2018). Many researchers also accentuated the significance of lagged market to book ration as predictor of expected revenues through the positive reflection of firms goodwill(Begley & Feltham, 2002) thus these researchers inferred from their findings that the market-to-book ratio may reflect intangible assets, such as brand reputation or intellectual property, which contribute to a company's competitive advantage and influence its ability to generate revenue over time. However, it is important to acknowledge that the correlation between market value and book value can be negative for companies with negative book value (Jan & Ou, 2011). The impact of market-to-book ratio on firms also depends on profitability and growth opportunities (Chen & Zhang, 2002; Zhang, 2000). Based on the above literature review, the second hypothesis of this research study is:

H2: There is an association between lagged market-to book ratio and expected operating revenues.

Accounts Receivables as a Predictor of Expected Revenues

An obscured association between accounts receivables and expected revenues forms a basis of financial forecasting and working capital management, demanding rigorous scrutiny from both academics and practitioners is not as straightforward as it is assumed (Lev et al., 2010). This endogenous behavior between account receivables and expected revenues makes it further complex and the question of whether lagged accounts receivables can serve as a reliable predictor of expected revenues is multifaceted, influenced by industry dynamics, macroeconomic conditions, and firm-specific strategies (Putri, 2024). This study concluded that both accounts receivables and lagged accounts receivables have significant association with expected revenues. But accounts receivable being a direct consequence of credit sales demonstrate a crucial role in modern competitive economic systems by promoting sales and driving profits (Kannadhasan, 2011). However, extending credit and accumulating accounts receivable introduces a time lag between revenue recognition and actual cash inflow, which can potentially impact a company's liquidity and financial health (Lazich & Popova, 2022). Therefore, understanding the predictive power of lagged accounts receivable on expected revenues becomes essential for effective financial planning and risk management regardless of their endogenous association.

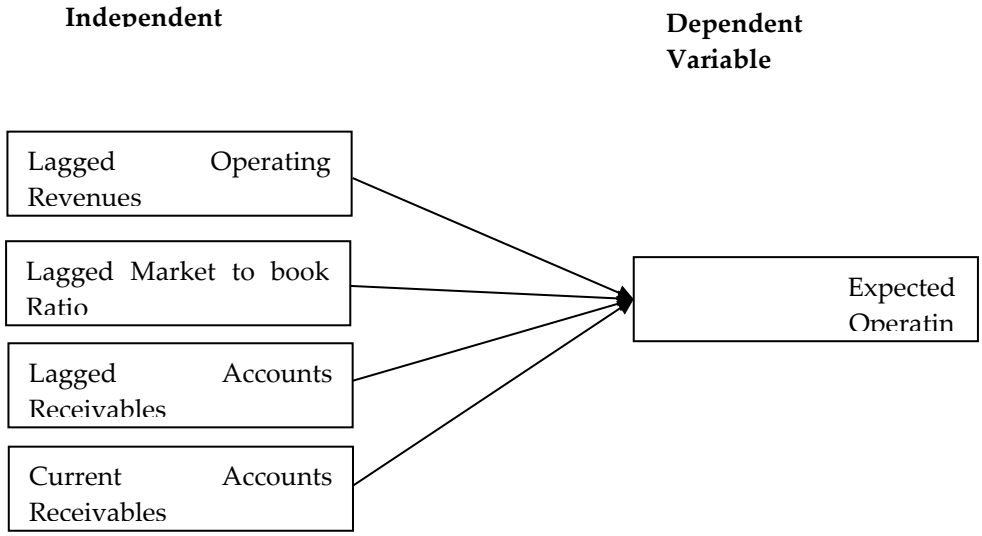
Many research studies have highlighted the operationalization of lagged and current receivables in accruals earnings manipulation thus the predictive capability of lagged accounts receivable on expected revenues is rooted in the concept of accrual accounting, where revenues are recognized when earned, irrespective of when cash is received (Nguyen et al.,2023). An increase in accounts receivable, particularly when lagged, could signal an anticipated increase in future revenues as it represents sales that have already been recognized but not yet collected (Giedt, 2014). However, this relationship is not always straightforward and can be influenced by several factors,

including the company's credit policy, collection efficiency, and the overall economic climate (Farhan et al., 2020) also the endogenous association between accounts receivables and expected revenues establishes the predicative ability of accounts receivables further composite (García-Teruel & Martínez-Solano, 2010). A relatively flexible credit policy, for instance, may lead to a surge in accounts receivable, but not necessarily translate into higher future revenues if a significant portion of these receivables become uncollectible(Malikov et al., 2018).The association between lagged accounts receivables and expected revenues is compound in nature as many macroeconomic factors such as economic growth or recession can significantly impact the ability of customers to pay their dues, affecting the relationship between lagged accounts receivable and future revenues (Farhan et al., 2020) thereby validating the predictive power of lagged accounts receivable.

Likewise, the association between current receivables and expected revenues is also crucial and many research studies have concluded the significant prediction power of current receivables for expected revenues (Zha, 2018). The intricate relationship between a company's current accounts receivable and its capacity to forecast expected revenues is a subject of considerable importance in financial analysis and corporate financial management, necessitating a thorough exploration of the underlying dynamics. In the modern era, credit sales is being a key feature for success of many businesses thus implication of accounts receivables is inevitable (Sah, 2022) therefore lucrative credit policy has become essential for revenues growth. Accounts receivable, representing the amounts due to a company from its customers for goods or services delivered or used but not yet paid for, serve as a crucial indicator of a company's sales performance and its ability to generate revenue (Lazich & Popova, 2022). The efficiency with which a company manages its receivable accounts directly impacts its working capital, influencing its short-term liquidity and overall financial health (Kannadhasan, 2011) consequently short-term liquidity and overall health are both significant for future growth. Finally effective receivables management, characterized by diligent monitoring, planning, and periodic review, enables companies to enhance turnover, thus contributing to sustained financial stability (Kannadhasan, 2011). Conversely, a poorly managed accounts receivable system can lead to increased opportunity costs, higher bad debt costs, and greater administrative burdens, potentially jeopardizing a company's financial performance (Song, 2012). Therefore, based on the above literature, the third and fourth hypotheses of this study are:

H3: There is a positive association between lagged accounts receivable and expected revenues
H4: There is a positive association between accounts receivable and expected revenues

Research Diagram



METHODOLOGY

Data

This research investigates by imparting the empirical evidence derived from observations and data analysis of non-financial companies of sugar sector in hyperinflationary but developing markets of Pakistan. The sample of this study consists of non-financial public companies from Pakistan's sugar sector that are listed on the Pakistan Stock Exchange (PSX) that have provided their annual financial statements for the period ranging from 2018 to 2023 without any noteworthy omissions or inconsistencies. The data set encompasses four predictors of expected revenue related to company financial fundamentals. The sample includes all sugar sector firms with a total of 168 unbalanced observations over the six years starting from 2018 and ending with 2023. According to recent statistics, the sugar sector's total turnover counts for 1,835,282 billion rupees with a market cap of 26.65 billion rupees. Finally, data has been analyzed using STATA software.

Research Model

The expected revenue modelling indicates the prevalence of earnings management if the error term is significant and sums up significance in causal relationship of predictors with dependent variables. This section of study comprises statistical equations demonstrating the association of dependent independent variables. The equation for current study is as follows:

$$ExRv_{i,t}/Tasts_{i,t} = \beta_o/ Tasts_{i,t-1} + \beta_1 Rv_{it-1}/ Tasts_{i,t-1} + \beta_2 Mb_{IT-1} + \beta_3 Re_{it-1} /Tasts_{i,t-1} + \beta_4 Re_{it}/Tasts_{i,t} + \mu_i \quad (1)$$

$$ExRv_{i,t}/Tasts_{i,t} = \beta_o/ Tasts_{i,t-1} + \beta_1 Rv_{it-1}/ Tasts_{i,t-1} + \beta_2 Mb_{IT-1} + \beta_3 Re_{it-1}/ Tasts_{i,t-1} + \beta_4 Re_{it}/ Tasts_{i,t} + \mu_{it} \quad (2)$$

$$ExRv_{i,t}/Tasts_{i,t} = \beta_0/ Tasts_{i,t-1} + \beta_1 Rv_{it-1}/ Tasts_{i,t-1} + \beta_2 Mb_{IT-1} + \beta_3 Re_{it-1}/ Tasts_{i,t-1} + \beta_4 Reit/ Tasts_{i,t} + \varepsilon_{it} + \mu_{it} \quad (3)$$

Where $ExRv_{i,t}$ is expected operating revenues for firm i in year t, Rv_{it-1} is lagged operating revenues, Mb_{IT-1} is lagged market to book ratio, Re_{it-1} is lagged receivables, Re_{it}, is receivables, $Tasts_{i,t}$ is total assets, $Tasts_{i,t-1}$ is lagged total assets, Common Effect Model is denoted by 1, fixed effect model is denoted by 2 and random effect model is denoted by 3.

To estimate the parameters in expected revenue model, this study used dynamic panel data econometrics, which includes random effects and fixed effects. This is because existing literature emphasizes that the results may show biasness when panel data is computed by using simple least squares method (Hsiao, 2022). These models are powerful tools for research, as they account for cross-sectional effects and aid in estimating the appropriate empirical model. The comparative results from "ordinary least squares (OLS)" regressions, random effects model and fixed effects models are provided. The Hausman test and Breusch-Pagan LM test are operationalized to determine the appropriateness of the fixed effect model and the common effect model, also called ordinary least squares, and then suitability of the random effect model and the fixed effects model, respectively. Both tests are statistical tests used to compare two different estimators to determine which one is more efficient for a given dataset. To control the unobserved company and/or year effects in panel data, it is emphasized to employ fixed or random effects (Greene, 2003). Pertaining to high technicality of this expected revenue model and operationalization of lagged terms, Generalized Method of Moment (GMM) model is utilized to test endogeneity issues along with other dynamic regression models if applicable. Finally, to remove the effect of outliers, the whole data is winsorized for the entire variables at 1 percent and 99 percent.

Measurement of predictors and dependent variable

Table 1: Description of Variables and source

Variables	Measurement
Dependent Variable:	*Reported operating revenues*
Expected Revenues	
Predictor 1:	*Lagged Reported operating revenues*
Lagged operating revenues	
Predictor 2:	*Market capitalization/book value*
Market to book Ratio	
Predictor 3:	*Lagged reported net receivables*
Lagged Receivables	
Predictor 4:	*Reported net receivables*
Receivables	

Lagged revenues operationalized as a fundamental variable for predicting current revenues, capturing the inherent persistence and growth trends within a company's

core operations (Malikov et al., 2018). Lagged operating revenues are hypothesized as predictors of current revenues while they are denoted as expected revenues while unexpected revenues are the error term which are not explained by these predictors. The market-to-book ratio, a proxy for growth opportunities and investor sentiment, may influence management's incentives to manipulate earnings in order to meet market expectations (Hidayat, 2022) in such a way that high market to book ratio indicate growth opportunities transmitting positive signals to current and protentional shareholders consequently enticing the new investments predicting the operating revenues. Lagged receivables and current receivables are operationalized as predictors in this expected revenue model as flexible credit policies and management decision about extending the credit limits can have significant impact on the expected revenues (Farhan et al., 2020) but this association among lagged receivables, current receivables and expected revenues is not complicated. Lagged receivables, representing the outstanding balances from prior sales, provide insights into the efficiency of revenue collection processes and potential red flags for premature revenue recognition. Current receivables, on the other hand, reflect the most recent sales activities and offer a contemporaneous view of revenue generation. The expected revenue model will be estimated using panel data regression techniques, allowing us to control firm-specific fixed effects and time-varying factors. In summary, the above-mentioned four predictors are considered significant predictors of expected revenues (Harymawan & Nurillah, 2017) thus any unexplained revenues will be predicted by residuals highlighting the indication of earnings management.

RESULTS

Table 2: Descriptive statistics

	Mean	**Std. Dev.**	**Min**	**Max**
Lagged operating revenues	3.13	0.16	0.01	7.01
Market to book Ratio	0.94	0.27	0.30	3.15
Lagged Receivables	0.10	0.06	0.01	0.35
Receivables	0.11	0.06	0.01	0.36
Expected Revenues	3.28	0.17	0.02	7.49

The results of descriptive statistics are presented in table 2 showing a summary of univariate data analysis of all variables. It is imperative to mention here that due to the inclusion of different firm sizes reported operating revenues, the predictors except for the market-to-book ratio are standardized by dividing these predictors by total assets, vary usually thus the mean revenue is 3.13 which represents that on average firms have 3.13 rupees of operating revenues for every one rupee of total assets. A relatively large standard deviation, which is 0.16 and usually deemed to be normal

for selected industry, indicating substantial firm-level variation. The market-to-book (M/B) ratio averages around 0.94, suggesting moderate growth expectations indicating that there was neither low growth nor low growth for the selected periodic range of data. Moreover, the standard deviation is 0.27 which is also relatively higher. It is noteworthy to mention here that receivables and lagged receivables also show relatively less dispersion with standard deviation values of 0.06 and 0.06 while the mean value for both variables are 0.11 and 0.10 respectively. Though all variables were divided by total assets of current periods for the current period variables and lagged total assets for lagged variables to standardize the variables but over all the data reflect heterogeneous firm sizes and performance levels in the sample. These statistics provide the context for our panel analysis, confirming sufficient variability to estimate the expected-revenue model across twenty-eight firms over 2018–2023.

Table 3: Wooldridge test results

	F-Statistics	**p-value**	**Conclusion**
Autocorrelation Test	1.87	0.20	No Autocorrelation

*N= 168, ** p<0.01, * p<0.05*

Table 3 highlights the results of the Wooldridge test to detect autocorrelation. The null hypothesis of this test is that there is no autocorrelation while the alternate hypothesis is that there is autocorrelation. Thus, insignificant p-value highlights that there is no autocorrelation. Thus, it can be inferred that data is reliable to conduct further analysis.

Table 4: Correlation results

Variables	**1**	**2**	**3**	**4**	**5**	**VIF**
Lagged operating revenues	1.00					2.17
Market to book Ratio	0.26**	1.00				1.59
Lagged Receivables	0.22**	0.02*	1.00			2.13
Receivables	0.21**	0.02*	0.72**	1.00		5.04
Expected Revenues	0.69**	0.53**	0.67**	0.51**	1.00	3.21

*N= 168, ** p<0.01, * p<0.05*

Table 4 shows that all pairwise correlations among the regressors are moderate and significant. It is essential to mention here that expected revenues (which are reported revenues) and lagged revenues are strongly correlated with a correlation coefficient value of 0.69 as is probable because lagged operating revenues predict the current revenues trend. It is noteworthy to indicate that none of the off-diagonal correlations exceed conventional concern levels as not a single pair value is above 0.80. Crucially, all Variance Inflation Factors (VIFs) are well below the usual cutoff (all below about 5), indicating that multicollinearity is not a material issue. Lagged receivables and current receivables correlation coefficient values are also relatively higher, but these are not beyond the range. Finally, it can be concluded that all the predictors have no issues of multicollinearity.

Table 5: Regression results

Predictors	Expected Revenues		
	Common Effect	Fixed Effect	Random Effect
Lagged operating revenues	1.017***	1.121***	1.114***
	4.13	4.17	4.39
Market to book Ratio	0.251***	0.308	0.311***
	3.19	0.106	2.72
Lagged Receivables	0.138**	0.138***	0.139***
	3.17	5.56	5.56
Receivables	0.142***	0.169***	0.171***
	5.17	6.41	6.54
Constant	0.032***	0.030***	0.029***
	6.14	5.31	5.92
Number of observations	168	168	168
R- squared	57.91%	62.17%	62.89%
Breusch and Pagan LM Prob-chi^2	0.000		---
Hausman Prob-chi^2	---	0.118	

Significance: "p<.10, p**<.05, p***<.01; t-statistics are reported in parentheses"*

The results of regression models using expected revenue approach are presented in table 5 which highlights the results obtained using common effect model and results obtained using dynamic panel data analysis such as fixed effect model and random effects model. Expected-revenue model is estimated by random effects (Hausman test Prob = 0.118, supporting random effect model over fixed effect model thus there is no requirement for further GMM procedures. Above table shows the coefficient estimates and t-statistics in parentheses. Lagged operating revenue is significant and based on results this predictor is directly associated with a dependent variable. The coefficient value of this variable indicates when there is one currency unit change in lagged revenues; there will be 1.114 currency unit change occurring in expected revenues. This confirms strong persistence that firms with higher past sales tend to have higher current sales thus the first hypothesis of this study is accepted. The lagged market-to-book ratio is also statistically significant with the value of t-statistics being 2.72, indicating that growth opportunities, as proxied by market to book ratio, have a direct effect on reported revenues thus the second hypothesis is also accepted. Furthermore, both receivables and lagged receivables are positively also positively associated with expected revenues with significant t-statistics of 6.54 and 5.56 respectively.

It can be inferred from the coefficient value, which is 0.171 of current receivables that with each one currency unit change in value current receivables there will be a change of 0.171 currency units in expected revenues, similarly lagged receivables also indicate the same pattern with a coefficient value of 0.139. Both variables are being statistically significant with t statistics above 2 consequently these results imply that

firms with higher accounts receivable tend to report higher operating revenues, which is plausible given that receivables often stem from credit sales and can reflect aggressive revenue recognition thus 3rd and fourth hypothesis of this study is also accepted Importantly, the constant term is estimated to be positive and statistically significant. In this study, the research model attempts to capture unexpected operating revenues by subtracting the expected operating revenue from operating reported revenues. Thus, expected operating revenue is determined by operationalizing four significant predictors of operating revenues which reported operating revenues are dependent variable. Therefore, any unexplained operating revenues are captured by a significantly non-zero intercept suggesting persistent bias in revenue not explained by modeled drivers that is consistent with the several classification studies(Mcvay, 2006; Malikov et al., 2018; Rehman et al., 2024). In this expected revenue regression, this constant captures any systematic residual: a significant positive intercept means that, on average, reported operating revenues exceed the model's expected revenues after controlling for the predictors thus as per the methodology operationalized in the study of (Malikov et al., 2018), it can be inferred that a statistically significant intercept (residual) indicates strong evidence of earnings management. Furthermore, the insignificant p-value (0.118) highlights that random effect model is more appropriate for the conduct of this analysis thus there this indicates that GMM is not required for testing the endogeneity issues. Finally, all hypothesis of this research has been accepted while it is noteworthy to mention here that, the significant constant term flags persistent, unexplained revenue overstatements by the firms.

DISCUSSION

The results of multivariate dynamic regression analysis elucidate the indication of earnings manipulation in Pakistan's sugar sector. The significant positive coefficient on lagged revenues supports standard revenue persistence, consistent with literature. The significant market to book ratio effect suggests that, contrary to some theoretical expectations, firms' growth opportunities effectively determine revenue levels in this sample in such a way that higher market to book ratio disseminates growth signals in the market consequently alluring the investments for growth opportunities which are ultimately a plausible aspect for predicting the operating revenues. Due to the cyclical nature of operating revenues in the sugar industry, the control prices and regulated aspects of the industry, future growth prospects did not translate directly into revenue beyond what lagged sales predicted. The positive coefficients on receivables indicate that credit sales are closely tied to reported revenues. In practical terms, if firms inflate sales by recognizing non-cash or deferred transactions as operating income, this shows up as higher receivables.

Thus, the receivables results are consistent with revenue-side accrual manipulation, complementing the intercept finding. This analysis further highlights that even including the major significant predictors of expected revenues still the existence of the positive and significant interception term suggests that even after accounting for normal revenue drivers (past sales, growth opportunities, receivables), a significant portion of firms reported operating revenues is unexplained. This pattern is precisely

highlighted by the research study of Malikov et al. (2018) who operationalized these unexpected operating revenues to conclude the prevalence of earnings management using classification shifting by using another regression model which also included control variables for earnings manipulation through accruals and real activity management as their research is a hallmark of revenue misclassification. Furthermore, the findings of this study also follow global evidence patterns such as research by Bansal (2021) applies the Malikov expected-revenue model in an IFRS adoption context and documents that many firms including but not limited to large and mature engaged in revenue shifting to inflate reported sales. Similarly, Al-Haddad et al. (2019) study Jordanian firms and conclude that classification shifting of revenues is a common practice there, with first evidence emerging in those Middle Eastern markets.

The empirical results reveal evidence of earnings management in Pakistan's sugar industry through revenue misclassification, as identified by the expected revenue model. There are far reaching practical implications even beyond statistical significance in such way that due to industry's profit patterns, government influence and the economic magnitude due to inelastic output of the industry, firms tend to manipulate reported revenues in economically meaningful ways. These findings are also consistent with the previous similar studies (Roychowdhury, 2006; Cohen et al. 2008; Rehman et al. 2024) where these studies highlighted comparable global patterns for tendency to adopt revenue misclassification thus reflecting the country's weak regulatory enforcement, limited investor protection, and concentrated ownership structures pertaining to involvement of such bodies who can influence the average revenues of firms. The results from Pakistan, another emerging-market setting, observe these similar insights. The findings of this study highlights that reported revenues from sugar sector of Pakistan systematically exceed what fundamental predictors would rationalize, implying the red flag and an indication of prevalence of earnings management consequently it can be inferred that managers have likely reclassified non-operating or other items as operating revenue to boost the top line.

CONCLUSION AND IMPLICATIONS

This study operationalizes Malikov et al. (2018) expected-revenue model to determine the red flags which indicate the prevalence of earnings manipulation in Pakistan's sugar industry. The empirical results indicate that many sugar firms in Pakistan appear to inflate reported operating revenues or have unexpected operating revenues consequently it can be inferred from the empirical evidence that managers may adopt to misclassifying non-operating income as core sales. These findings are broadly consistent with international studies of revenue shifting (Al-Haddad et al., 2019; Bansal, 2024) and highlight a perilous practice of earnings management in an essential domestic industry. The consequences of earnings management can be far-reaching, affecting various stakeholders, including investors, creditors, and employees thus identification of red flags for earnings manipulations is inevitable for greater consortium of stakeholders. While managers may have incentives to manage earnings to meet targets, increase compensation, or influence stock prices, such practices can

erode investor confidence, distort resource allocation, and ultimately harm the long-term sustainability of the company. Thus, this study highlights that the prevalence of unexpected operating revenues is a vital indication of earnings manipulation. Consequently, managers of firms in the sugar industry tend to be involved in fraudulent financial reporting which is consistent with the findings of (Kurniawan & Panggabean, 2020) who concluded that frequent earnings management can be a precursor to fraudulent financial reporting.

Several research studies commiserate that earnings management practices are adopted to defraud the stakeholders while others consider that earnings management cannot be categorized as fraudulent (Alzahrani, 2019; Christiana, 2020) but this research emphasize that any deviation from standardized financial reporting with the intention to obscure relevant and faithful financial information must be considered as fraudulent activity. Furthermore, this study advocates that earnings management affects corporate reputation therefore, a model with a significant error term is a cause for concern since a significant error term means a firm is more likely to be utilizing discretion to manage earnings. The identification of prevalence of earnings manipulation as a red flag across the firms in sugar industry may or may not have the same pattern as firms in other industries with non-cyclical revenue patterns and related accruals may adopt different earnings manipulation technique which is also accentuated by the research of (Wang & Zhao, 2018) who identified that firms may be more likely to manage earnings when their strategy differs greatly from that of the industry as a whole. Finally, this research concludes that, in the case of Pakistan's sugar industry, the expected-revenue model provides a useful warning mechanism as red flag for prevalence of earnings manipulation and the statistically significant intercept has uncovered an earnings-management concern that necessitates regulatory attention.

The study's findings have important implications for investors, regulators, and auditors in Pakistan's sugar sector, contributing to a deeper understanding of earnings management practices and their potential consequences. Based on industry volatility, cycle nature of revenue recognition and tendency for adopting revenue reclassification, SECP must take significant actions including but not limited to strict disclosures of revenue recognition. Likewise, auditors must increase the substantive analytical procedures. Therefore results-based recommendations are expected to enhance the ability of market participants to identify and address potential risks associated with aggressive revenue recognition, ultimately promoting greater transparency and accountability in financial reporting. The policy implications of this study underline that regulators, auditors, and investors should be especially cautious about revenue recognition in the sugar sector. Securities regulators and exchange officials should increase scrutiny of sugar firms' income statements. Adequate and efficient audit procedures could verify that large "other income" entries are not being diverted into operating revenue.

Additionally, regulators might require firms to detail the components of operating income versus non-operating income. Enhanced transparency will make it harder for managers to highlight red flag for prevalence of earnings management. Furthermore,

analysts and investors should be cautious when interpreting the top-line performance of sugar companies while a particular emphasizes metrics like receivables growth and sudden jumps in reported sales can serve as red flags of potential manipulation which is also highlighted by several research studies (Tracy, 2024). Based on empirical evidence this study suggests that Pakistan's sugar companies may be engaged in earnings management due to flexibility provided by accounting standards as these standards provide relatively broad categories for operating vs. non-operating income consequently managers have flexibility to maneuver such as prior work has already highlighted that accounting standards flexibility can inadvertently facilitate such manipulation (Kateb, 2024) and from a regulatory perspective, this underscores the need for vigilance.

LIMITATIONS AND FUTURE DIRECTIONS

The evidence of red flags which indicate the prevalence of earnings management is obtained from the data ranging from 2018 to 2023 which may also include shocks due to covid-19. Moreover, other shocks are also the feature of relevant data including but not limited to political instability and hyperinflation thus the results may be slightly different without these shocks. Furthermore, due to unavailability of published financial statements for the year ended 2024, the empirical evidence is limited to 2023. Future research should focus on refining the expected revenue model to incorporate additional predictors, including but not limited to discretionary costs and direct costs, that capture the complexities of revenue recognition and to better understand the factors that drive earnings management decisions. Furthermore, understanding the motivations and incentives behind earnings management is crucial for developing effective mechanisms to deter such practices and promote transparent and reliable financial reporting. Finally, the findings of this study suggest examining related issues, such as auditing standards' effectiveness and the role of corporate governance in preventing such practices for future research.

REFERENCES

Ali, K., Arslan, H. M., Mubeen, M., Azeem, H., Zhen-Yu, Z., Yushi, J., & Miao, M. (2024). From reporting to responsibility: investigating the influence of sustainability disclosure on earnings management. *Environment, Development and Sustainability, 1*-34.

Alberg, J., & Lipton, Z. C. (2017). Improving factor-based quantitative investing by forecasting company fundamentals. *arXiv preprint arXiv:1711.04837*.

Alzahrani, A. (2019). The Effects of Real Earnings Management on the Profitability of the Company. *Asian Journal of Humanities and Social Studies*, *7*(6). https://doi.org/10.24203/ajhss.v7i6.5905

Al-Haddad, L., Gerged, A., & Saidat, Z. (2019). Managing earnings using classification shifting: Novel evidence from Jordan. *Academy of Accounting and Financial Studies Journal*, *23*(2).

Anagnostopoulou, S. C., & Malikov, K. T. (2024). The real consequences of classification shifting: Evidence from the efficiency of corporate investment. *European Accounting Review, 33*(4), 1549-1577.

Antara, I. M. Y., & Suryantini, N. P. S. (2019). Pengaruh Rasio Pasar Terhadap Return Saham Pada Saham Lq-45 Di Bursa Efek Indonesia. *E-Jurnal Manajemen Universitas Udayana, 8*(9), 5507. https://doi.org/10.24843/ejmunud.2019.v08.i09.p08

Archibald, TR. (1967). The return to straight-line depreciation: An analysis of a change in accounting method. *Journal of Accounting Research,* 5, 164 -180.

Asiri, B. K. (2015). How investors perceive financial ratios at different growth opportunities and financial leverages. *Journal of Business Studies Quarterly, 6*(3), 1.

Asim, A., & Ismail, A. (2019). Impact of Leverage on Earning Management: Empirical Evidence from the Manufacturing Sector of Pakistan. *Journal of Finance and Accounting Research, 1*(1), 70. https://doi.org/10.32350/jfar.0101.05

Azizah, N., Riwajanti, N. İ., Eltivia, N., & Efendi, A. (2021). Analyzing the Pandemic Effect on Time series Prediction of Demand and Sales Manufacturing Product. *Advances in Economics, Business and Management Research.* https://doi.org/10.2991/aebmr.k.210717.052

Banker, R. D., & Chen, L. (2006). Predicting earnings using a model based on cost variability and cost stickiness. *The accounting review, 81*(2), 285-307.

Bansal, M. (2021). Impact of corporate life cycle on misclassification practices: evidence from IFRS adoption in India. *Journal of Applied Accounting Research*, *23*(3), 628-649.

Bansal, M. (2024). Earnings management: a three-decade analysis and future prospects. *Journal of Accounting Literature*, *46*(4), 630-670.

Beaver, W. H., & Ryan, S. G. (2000). Biases and lags in book value and their effects on the ability of the book-to-market ratio to predict book return on equity. *Journal of accounting research, 38*(1), 127-148.

Begley, J., & Feltham, G. A. (2002). The relation between market values, earnings forecasts, and reported earnings. *Contemporary Accounting Research, 19*(1), 1-48.

Beidleman, CR. (1973). Income Smoothing: The Role of Management. *The Accounting Review*, 48 (4), 653-667.

Bernard, V. L. (1994). Accounting-based valuation methods, determinants of market-to-book ratios, and implications for financial statement analysis

Binda, J., & Qadir, A. (2024). Unraveling the controversy: Assessing the role of accounting theories in defining accounting tenets. *Scientific Journal of Bielsko-Biala School of Finance and Law, 28*(1), 62-68.

Boahen, E. O., & Mamatzakis, E. C. (2025). The impact of interaction between religion and legal environment on expense misclassification and real activities: international evidence. *Asian Review of Accounting, 33*(2), 250-290.

Chang, K., Kim, Y. S., Li, Y., & Park, J. C. (2022). Labor unions and real earnings management. *Journal of Corporate Finance, 75*, 102242.

Chavan, S., Panchal, S., Sawant, T., & Shinde, J. (2020). Predicting Online Product Sales using Machine Learning. *International Journal of Engineering Research, 4.* https://doi.org/10.17577/ijertv9is040708

Chen, P. F., & Zhang, G. (2002). The roles of earnings and book value in equity valuation: a real options based analysis. *Available at SSRN 311800*.

Cheng, Q. (2005). The role of analysts' forecasts in accounting-based valuation: A critical evaluation. *Review of Accounting Studies, 10*, 5-31.

Christiana, I. (2020). FINANCIAL RATIO IN THE ANALYSIS OF EARNINGS MANAGEMENT. *International Journal of Accounting & Finance in Asia Pasific, 3*(1), 8.

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley periods. *The accounting review*, *83*(3), 757-787.

Copeland, RM. (1968). Income Smoothing: Empirical Research in Accounting: Selected Studies. *Journal of Accounting Research*, 6, 101-116.

Davis, F., & Khadivar, H. (2024). Accrual and real earnings management by rumored takeover targets. *International Review of Financial Analysis*, 92, 103105.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *Accounting review*, 193-225.

Donnelly, R. (2014). The book-to-market ratio, optimism and valuation. *Journal of Behavioral and Experimental Finance, 4*, 14-24.

Durana, P., Valaskova, K., Siekelova, A., & Michalkova, L. (2022). Appraisal of earnings management across the sectors. *Journal of Business Economics and Management (JBEM), 23*(2), 399-425.

Harymawan, I., & Nurillah, D. (2017). Do Reputable Companies Produce a High Quality of Financial Statements? *Asian Journal of Accounting Research*, *2*(2), 1.

Hidayat, W. W. (2022). The effect of leverage and liquidity on the value of the firm with age as a moderating variable on companies in Indonesia. *Jurnal Ekonomi MODERNISASI, 18*(2), 264.

Hsiao, C. (2022). *Analysis of panel data*. Cambridge university press.

Hsieh, S. J., Su, Y., & Chang, C. C. A. (2021). The role of discretionary pension accruals in earnings management. *Journal of Applied Accounting Research, 22*(1), 1-21.

Farhan, N. H. S., Tabash, M. I., & Yameen, M. (2020). The relationship between credit policy and firms' profitability: empirical evidence from Indian pharmaceutical sector. *Investment Management and Financial Innovations, 17*(2), 146.

Fowler, D. (2023). Ethical Implications of Deceptive Earnings Management Practices. *Business Ethics and Leadership, 7*(3), 84. https://doi.org/10.61093/bel.7(3).84-96.2023

Franzoi, F., Mietzner, M., & Thelemann, F. (2021). The influence of family board involvement on earnings management. *Corporate Ownership and Control, 18*(2), 106.

Gahirwal, M. (2013). Inter Time Series Sales Forecasting. *arXiv (Cornell University).* https://doi.org/10.48550/arxiv.1303.0117

García-Teruel, P. J., & Martínez-Solano, P. (2010). A dynamic approach to accounts receivable: a study of Spanish SMEs. *European Financial Management, 16*(3), 400-421.

Giedt, J. Z. (2014). The Roles of Receivables and Deferred Revenues in Revenue Management. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2424848

Goel, S., & Kapoor, N. (2022). Is earnings management related to board independence and gender diversity? Sector-wise evidence from India. *International Journal of Disclosure and Governance, 19*(4), 363-373.

Gordon, MJ. (1964). Postulates, Principles and Research in Accounting. *The Accounting Review*, 39, 251-263.

Gordon, M. J., Horwitz, B. N., & Meyers, P. T. (1966). Accounting measurements and normal growth of the firm. *Research in accounting measurement*, 23(4), 223-241.

Greene, W. H. (2003). *Econometric analysis*. Pearson Education India.

Hepworth, SR. (1953). Smoothing periodic income. *The Accounting Review*, 28(1),32-39.

Iatridis, G. E., & Kadorinis, G. (2009). Earnings management and firm financial motives: A financial investigation of UK listed firms. *International Review of Financial Analysis, 18*(4), 164. https://doi.org/10.1016/j.irfa.2009.06.001

Ishak, R., Amran, N. A., & Manaf, K. B. A. (2018). Firm Characteristics and Financial Reporting Quality: The Moderating Role of Malaysian Corporate Governance Index. *The Journal of Social Sciences Research*, 924. https://doi.org/10.32861/jssr.spi6.924.932

Jan, C., & Ou, J. A. (2011). Negative-Book-Value Firms and Their Valuation. *Accounting Horizons, 26*(1), 91.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research,* 29(2), 193-228.

Kateb, I. (2024). Reporting lag in the GCC region: exploring the nexus of earnings management and IFRS transition. *International Journal of Accounting & Information Management*, *32*(4), 685-708.

Kannadhasan, M. (2008, February). Receivables Management in a Public Limited Company-A Case Study. In *International Symposium on,"Management Research", Bharathidasan Institute of Management, Trichy-Tamilnadu-India-February*.

Koochakpour, K., & Tarokh, M. J. (2017). Designing sales budget forecasting and revisionsystem by using optimisation methods. *International Journal of Knowledge Engineering and Data Mining, 4*(2), 93.

Kurniawati, A., & Panggabean, R. R. (2020). Firm Size, Financial Distress, Audit Quality, and Earnings Management of Banking Companies. *Proceedings of the 1st Borobudur International Symposium on Humanities, Economics and Social Sciences* (BIS-HESS 2019). https://doi.org/10.2991/assehr.k.200529.086

Lazich, Y. V., & Popova, I. N. (2022). Development of a Telecommunication Company's Accounts Receivable Management System. In *International Scientific and PracticalConference Strategy of Development of Regional Ecosystems "Education Science Industry"(ISPCR 2021)* (pp. 265-270). Atlantis Press.

Lev, B., Li, S., & Sougiannis, T. (2010). The usefulness of accounting estimates for predicting cash flows and earnings. *Review of Accounting Studies, 15*, 779-807.

Lizińska, J., & Czapiewski, L. (2018). Towards Economic Corporate Sustainability in Reporting: What Does Earnings Management around Equity Offerings Mean for Long-Term Performance? *Sustainability, 10*(12), 4349. https://doi.org/10.3390/su10124349

Malikov, K., Manson, S., & Coakley, J. (2018). Earnings management using classification shifting of revenues. *The British Accounting Review*, *50*(3), 291-305.

McVay, S. E. (2006). Earnings management using classification shifting: An examination of core earnings and special items. *The accounting review, 81*(3), 501-531.

Md Nasir, N. A., Che Nawi, N., Zainuddin, S. A., Musa, Z. K. C., & Jamil, A. (2024). The Alarming Shift from Earnings Management to Fraudulent Financial Reporting. *In Board Diversity and Corporate Governance* (pp. 455-465). Cham: Springer Nature Switzerland.

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.

Novy-Marx, R. (2013). The other side of value: The gross profitability premium. *Journal of Financial Economics, 108*(1), 1. https://doi.org/10.1016/j.jfineco.2013.01.003

Olaoye, F. O., & Adeleke, M. T. (2021). Determinants of corporate social responsibility disclosure: a positive accounting theory approach. *International Journal of Critical Accounting, 12*(2), 91-106.

Putri, T. O. D. S. (2024). The Effect of Managing Receivables and Inventory on Profitability: A Case Study of a Multifinance Company in Medan. *Jurnal Ekonomi, Bisnis & Entrepreneurship, 18(*2), 415-426.

Rehman, A. U., Yaqub, A., Ahsan, T., & Rao, Z. U. R. (2024). Earnings management using classification shifting of revenues: evidence from Chinese-listed firms. *Journal of Accounting in Emerging Economies, 14*(5), 1061-1083.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of accounting and economics*, *42*(3), 335-370.

Sah, G. G. (2022). Influence of account receivable management practices on the performance of small and medium scale enterprises. *Technium Soc. Sci. J., 32*, 376.

Salato, R., Gomes, P., & Ferreira, C. (2024). Accrual accounting in the public sector of emerging economies: Bibliometric analysis and future research. Public *Money & Management*, *44*(5), 376-388.

Shah, S. Z. A., & Wan, F. (2024). Financial integration and earnings management: evidence from emerging markets. *Journal of Applied Accounting Research, 25*(2), 197-220

Simanjuntak, D. G., & Tjandrawinata, R. R. (2011). Factors Influencing Sales Revenue in the Multinational Pharmaceutical Companies. *SSRN Electronic Journal*.

Smaili, N., Arroyo, P., & Issa, F. A. (2022). The dark side of blockholder control: evidence from financial statement fraud cases. *Journal of Financial Crime*, *29*(3), 816-835.

Song, Y. Y. (2012). Research on Accounts Receivable Control Problem in Stages. *Advanced Materials Research, 629*, 968. https://doi.org/10.4028/www.scientific.net/amr.629.968

Strakova, L. (2020). Earnings management in global background. *SHS Web of Conferences, 74*, 1032.

Subastian, L. U., Widagdo, A. K., & Setiawan, D. (2021). Related Party Transactions, Family Ownership, and Earnings Management in Indonesia. *Jurnal Keuangan Dan Perbankan*, *25*(3), 688.

Tracy, T. C. (2024). *How to read a financial report: wringing vital signs out of the numbers*. John Wiley & Sons.

Utami, R. B., Nuzula, N. F., & Damayanti, C. R. (2019). The Effect of Earnings Quality on Financial Performance in Indonesia : is the State-Owned Bank better than Private Bank? *Asia Pacific Management and Business Application, 8*(2), 105.

Vernando, A., & Mustakini, J. H. (2025). Earnings and cash flow management using classification shifting: a bibliometric analysis and systematic literature review. *International Journal of Accounting & Information Management*.

Voon, J., & Ma, Y. C. (2024). Compensations, overconfidence and use of loan terms. *International Journal of Managerial Finance, 20*(3), 722-747.

White, GE. (1970). Discretionary accounting decisions and income normalization. *Journal of Accounting Research*, 8(2), 260-273.

Wang, X., & Zhao, X. (2018). Corporate Strategy and Earnings Management. *Proceedings of the 2018 International Conference on Advances in Social Sciences and Sustainable Development (ASSSD 2018)*. https://doi.org/10.2991/asssd-18.2018.51

Xu, S. (2023). Comparison of Sales Prediction in Conventional Insights and Machine Learning Perspective. *BCP Business & Management, 38*, 1681.

Zalata, A. M., & Abdelfattah, T. (2021). Non-executive female directors and earnings management using classification shifting. *Journal of Business Research, 134*, 301-315.

Zha Giedt, J. (2018). Modelling receivables and deferred revenues to detect revenue management. *Abacus, 54*(2), 181-209.

Zhang, G. (2000). Accounting Information, Capital Investment Decisions, and Equity Valuation: Theory and Empirical Implications. *Journal of Accounting Research, 38*(2), 271.