Arab American University
Faculty of Graduate Studies
Department of Administrative and Financial Sciences
Ph.D. Program in Accounting and Finance

Extending Beneish's Model for Detecting Earnings Management: An Empirical Investigation of the Role of Corporate Governance, Earnings Quality, and Foreign Ownership

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Dissertation Approval

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Palestine, Feb/2025

Declaration

I declare that this dissertation is an original report of my research, has been written by me, and has not been submitted for any previous degree. The work is entirely my own work; the collaborative contributions have been indicated clearly and acknowledged. Due references have been provided on all supporting literature and resources.

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Dedication

As always, to my dear parents, whose encouragement and endless love have been the root of my journey. My father instilled in me the principles of diligence, resilience, and the quest for truth. So, thank you again for your sacrifices and motivation, without which this would not have been possible.

My loving sisters and relatives, my strength and my inspiration. Thank you for your eternal love and belief in me, which keeps me going to achieve this milestone.

To my professors and mentors, you have guided me down the path. Thank you for trusting me and challenging me to think critically and creatively. Finally (and perhaps most importantly), your expertise in your field inspires me to drive toward continuous improvement.

To my friends and colleagues who have shared this journey with me, your support during the late nights and long days has not only made this process tolerable but has also made it unforgettable. Thank you for your laughter, encouragement, and discovery.

Finally, I leave you with my dedication of this article to the souls of all the martyrs of Palestine. The bravery and sacrifices of people like them are a constant reminder of the fight for justice and dignity. May their legacy inspire us in our pursuit of peace and truth.

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Abstract

This study examines earnings management practices within the financial environments of Amman and Palestine. It examines the relationship between corporate governance, earnings quality, and foreign ownership. This study aims to build a better prediction model than the Beneish M-Score model concerning earnings quality measures, corporate governance variables, and standard financial ratios. This new model aimed to find earnings manipulation within a more dispersed economic environment.

The data used for the study are collected from 30 industrial companies listed on the Amman stock exchange and 11 on the Palestine stock exchange from 2017 till the end of 2023. It employs numerical methods such as discriminant analysis and logistic regression to determine the financial ratios, governance features, and earnings quality signals directly influencing earnings management. It explores the implications of foreign ownership on financial statements practices and what that means for multi-national firms.

The results demonstrate that strong corporate governance and high earnings quality significantly reduce earnings manipulation. Given the economic uniqueness of Amman and Palestine, we must focus on defining the framework for governing work and financial extremes. The results demonstrate a significant performance improvement, surpassing the traditional Beneish M-Score model in its ability to forecast earnings. This leads to more openness, trust in the market, and following the rules.

Keywords: Earnings Management, Corporate Governance, Earnings Quality, Foreign Ownership, Financial Reporting.

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List of Definitions of Abbreviations

Abbreviations	Title
SGM	Systemic Governance Mechanism
DSRI	Days Sales in Receivables Index
VIC	Value of Issued Capital
EM	Earnings Management
SGI	Sales Growth Index
SGAI	Sales, General, and Administrative Expenses Index
LVGI	Leverage Index
TATA	Total Accruals to Total Assets
AQI	Asset Quality Index
GMI	Gross Margin Index
COGS	Cost of Goods Sold
R&D	Research and Development
CEO	Chief Executive Officer
ESG	Environmental, Social, and Governance
RDT	Resource Dependency Theory
MNCs	Multinational Corporations
IFRS	International Financial Reporting Standards
GAAP	Generally Accepted Accounting Principles
IPOs	Initial Public Offerings
UCE	Unexpected Core Earnings
SPSS	Statistical Package for the Social Sciences
FO	Foreign Ownership
CG	Corporate Governance
EQ	Earnings Quality
AUC	Area Under the Curve
ROC	Receiver Operating Characteristic Curve
PPE	Property, Plant, and Equipment
IQR	Interquartile Range
ATs	Accrual Transactions
VAR	Variance
VIF	Variance Inflation Factor
D	Discriminant
AEM	Accrual-Based Earnings Management
REM	Real Earnings Management
DEPI	Depreciation Index
B2B	Business-to-Business
CSR	Systemic Governance Mechanism

Chapter One: Introduction

1.1 Background of the Study and Field of Implementation

In this context, accounting and finance are the bedrock of contemporary economies, delivering critical information on the financial health and performance of organizations. Earnings management (EM), which has been defined as the grey area of accounting (Healy & Wahlen, 1999; Schipper, 1989), has received considerable attention from scholars as it can hinder transparency by presenting a distorted picture of the economic reality of firms. Financial engineering allows a company to craft financial reports that may portray a picture that is not wholly accurate. They manipulate accounting figures, whether it's through the timing of revenue recognition, expense recognition, or selective disclosure of information. This can sometimes make it challenging for regulators, investors, and financial analysts to accurately assess the financial health and performance of the company.

The high frequency of earnings management also reflects the necessity of strong corporate governance mechanisms. Corporate governance (CG) styles, such as the presence of boards, auditing committees, or internal controls, seek to guide transparency, accountability, and ethical practices within organizations (Mechelli & Cimini, 2021; Jensen & Meckling, 1976). Robust governance practices reduce the likelihood of earnings falsification and foster investor trust by safeguarding shareholder interests. Yet, the determinants of CG may operate differently from one institutional region to another (Gompers et al., 2003). Consequently, comprehending the detailed aspects of CG and their influence on earnings management practices is imperative in fostering market integrity and investor trust. Additionally, recent corporate scandals have brought to attention the significance of adequate governance in preventing and detecting fraudulent financial reporting, reinforcing the need for continuous research and improvement of governing practices to ensure the confidence of financial markets.

Earnings quality (EQ) is also one of the most important factors for the reliability and usefulness of financial statements per se, in addition to CG. Nonfinancial variables, like EQ (e.g., accruals quality, persistence, and predictability), also supply meaningful signals about the true state of a firm (Dechow & Dichev, 2002; Kothari et al., 2005). Earnings that are high in quality align with the underlying economics of transactions and

events, thereby increasing the credibility of financial reporting and enabling stakeholders to make better decisions. On the other hand, low EQ can undermine investor confidence and have negative repercussions for firms, such as a rise in capital costs as well as lower market value (Le et al., 2021). Therefore, we must evaluate and ensure the quality of earnings in order to maintain market efficiency and foster investor confidence. Moreover, higher EQ can reflect management accountability and sustainability, leading to an overall positive perception of the company among investors even in the long run as they focus on growth and development for the future.

Moreover, due to the increase in foreign trade activities, foreign ownership (FO) related earnings management practices have been an attractive and significant research topic in recent years. The regulatory environment, the cultural context, and the reporting requirements of different jurisdictions where a company operates vary significantly, and this could influence the company's financial reporting decisions (Shahriar et al., 2020; Doidge et al., 2004). FO adds yet another layer of complexity as companies wrestle with how accounting standards differ worldwide, differences between countries in taxation regimes, and diverse disclosure practices. FO is critical for performance enhancement, especially for listed firms; therefore, analyzing how ownership shapes EM is imperative, which provides insights for investors, regulators, and policymakers seeking to develop transparency and comparability across global markets. Therefore, the link between FO and EM practices is not just an area of academic inquiry but also an articulation of the real-life problems and prospects experienced by international firms regarding the consistency and integrity of their financial statements.

Even though there has been a considerable amount of academic work done surrounding EM, no accepted model has yet been developed that can be used to assess the degree of earnings manipulation. Many methods have been proposed to detect abnormal earnings behavior, like accruals-based models, discretionary accruals models, and anomaly-based models (Healy & Wahlen, 1999; Beneish, 1999; Kothari et al., 2005). Such models are minimal and do not incorporate all EM components. Moreover, since financial markets are dynamic and accounting standards evolve, it becomes even more challenging for researchers interested in developing models to detect earnings manipulation. The fact that many companies are still using EM strategies demonstrates the growing importance of research to provide higher levels of knowledge about these

practices and to implement better tools for earnings manipulation detection and prevention in the reporting process.

This research aims to address these deficiencies by examining EM activity within the financial contexts of Amman and Palestine. Considering that Amman and Palestine are prominent economic centers in the Middle East, analyzing the interaction between CG, EQ, and FO in these contexts may provide valuable insights. Amman, the capital of Jordan, serves as a regional financial center, drawing local and international investors in pursuit of prospective development possibilities (Al-Htaybat, 2018; Hasan & Habib, 2018). The study's results will substantially aid in understanding how corporate governance (CG) measures influenced Amman's financial reporting process, resulting in increased investor trust, protection of investors' interests, and preservation of market integrity. From Palestine's standpoint, it is distinctive due to chronic political instability, insufficient access to financial markets, and weak regulatory frameworks (Dabdoub & Mdaires, 2017; Elayan & Talafha, 2018).

This study sheds light on an important area in an under-researched context, addressing the relationship between EQ and FO in Palestine. This study seeks to make significant contributions toward the development of financial practices and CG in Amman and Palestine by identifying the factors affecting EM practices that ultimately contribute to the overall improvement of transparency and integrity in the global financial system.

There are 11 industrial companies in the Palestine Stock Exchange (PEX) and 30 industrial companies in the Amman Stock Exchange (ASE). This study will focus on the period from 2017 to 2023 as this period provides an appropriate time frame to complete the study and determine the number of companies listed during this period. Investigating the relationship between EQ and FO in Palestine and Amman will provide valuable insights into the positive impact on economic development, making sustainable development more practical. Previous studies in this area have focused only on US companies or other countries, so this study will shed light on the characteristics that influence EM behavior in Amman and Palestine.

This study arises from an urgent need to contribute to enhancing knowledge of EM at the localized level, specifically in the case of Amman and Palestine. The problem of EM is not new, as evidenced by several high-profile scandals and market collapses in

recent years, underscoring the urgent need for effective methods to identify and eradicate this practice (Goldstein & Yang, 2019; Dechow et al., 1995). These experiences thus underscore just how vulnerable financial systems are to dishonest practices, reinforcing the importance of perfect tools to protect investors and tackle such practices and market integrity.

The goal of this study is to equip relevant stakeholders with a robust analytical model that goes beyond previous methods for identifying EM. Incorporating material considerations such as CG, EQ, and FO, the research aims to impart a comprehensive insight into the complex nature of EM behaviors (Rahman & Ali, 2018; Le et al., 2021). This method not only makes it easier to find cases of earnings manipulation but also sheds light on some of the underlying drivers and mechanisms driving such behavior.

This study's anticipated impact extends beyond academia, with industry practitioners, regulatory authorities, and other researchers expected to widely adopt the proposed model. That being said, adding CG, EQ, and FO to the analysis frame might make the current methods better at finding earnings manipulation (Faqih, 2020; Talal & Suwaidan, 2017). Thus, the study seeks to contribute to greater transparency, increased market confidence, and a climate of accountability and trust in the financial systems of Amman and Palestine by developing a deeper understanding of the unique characteristics of financial reporting practices.

The primary motivation for this research is to inform policy decisions and facilitate financial reforms in the regions under investigation. The economic relations model fills in the gaps in the existing literature on EM by looking at the different factors that cause it to happen in different industries and regions. It does this by showing how these factors affect how companies manage their earnings on average (Gompers et al., 2003; Jensen & Meckling, 1976). By providing a basis for a more reliable and transparent financial system in Amman and Palestine, the research seeks to promote sustainable economic growth and development through collaborative efforts held across academia, industry stakeholders, and policymaking.

1.2 Research Problem

Earnings management is a significant concern in accounting and finance literature and remains a primary focus of study. Despite extensive examination, challenges in

establishing a universally acknowledged standard approach for quantifying EM have persisted (Healy & Wahlen, 1999; Gunny & Pollard, 2023). According to new research, EM methods are complicated and have many different parts. This means we need a complete and organized way to study and find them (Dakhlallh et al., 2020; Dechow et al., 2010).

An examination of the present model's inadequacies, especially with rising markets such as Amman and Palestine, reveals that current models inadequately include the complex interactions of many elements affecting behavior related to EM. While classic models, such as the Beneish M-Score, have significantly advanced in detecting earnings manipulation, they overlook critical factors such as company governance, EQ, and FO (Beneish, 1999; Kasznik, 1999). This omission shows the importance of an integrated model that includes these undervalued factors to make EM detection more accurate and effective (Al-Htaybat, 2018; Dabdoub & Mdaires, 2017).

Furthermore, Amman and Palestine's unique economic frameworks, business standards, and laws complicate the correct observation of EM techniques. Consequently, these areas have distinct problems and possibilities in financial reporting and governance, attributable to their varied geopolitical and socio-economic dynamics (Mechelli & Cimini, 2021; Shahriar et al., 2020). Successfully navigating these mazes requires a solid understanding of the local business environment, cultural nuances, and regulatory frameworks. Consequently, there is a critical need for specialized detection models that account for these nuances and complexities at the regional level.

Furthermore, no comprehensive models integrated CG, EQ, and FO with traditional financial values. Such a lack of information makes it difficult for the related stakeholders to make an informed decision, which may lead to the above and increase the likelihood of fraudulent financial activity (Adams et al., 2005; Salimi et al., 2022). This study aims to investigate these challenges and incorporate the previously mentioned variables into a refined model. This model will enable a more accurate evaluation of EM, especially in the distinctive settings of both Amman and Palestine. The careful empirical analysis and validation processes will try to provide a solid, reliable way to find and stop earnings management behaviors. This will enhance financial transparency, foster investor trust, and safeguard market integrity in the targeted areas.

Numerous studies have shown that effective CG mechanisms can be influential in alleviating EM, such as those by Adams et al. In fact, Huang et al. (2005) found a link between strong CG structures and lower levels of earnings manipulation. This supports adding these features to models that look for fraud. Dechow and Schrand (2004) found an inverse relationship between EM practices and the notion of EQ, which signifies the reliance and transparency of financial reporting. A high EQ also decreases information risk and improves investor confidence, making it even more critical in detecting earnings management (Bartov et al., 2002).

FO and the accompanying consideration of differences in regulation standards and cultural practices across regions add another layer of complexity to EM practices (Leuz & Verrecchia, 2000; Guedhami et al., 2017). Foreign-owned firms under the dual pressure to cope with the accounting principles of home countries and the local regulatory environment may significantly impact the financial disclosures (Han et al., 2022). Overdo is a first step toward a more complete model that will be crucial in understanding the inherent complexities of EM in the international setting.

In this context, the present study attempts to include these varying elements, together with CG, EQ, and FO, into a new detection model. We collected data from firms in Amman and Palestine to provide a regional analysis, answer this question, and corroborate the model's findings with the unique economic and regulatory conditions in place. As such, this study will also provide important insights into the drivers of EM and help develop more effective detection techniques.

The proposed model and its added variables will allow better detection of companies applying EM. They will also improve the understanding of EM practices and their determinants, thus overcoming the criticism of existing models. The findings have important implications for many stakeholders, including investors, regulators, and policymakers, as they offer an improved and multidimensional tool to evaluate financial integrity and encourage market confidence in emerging markets.

1.3 Objectives of the Study

The primary aim of this dissertation is to enhance the identification of earnings management by creating a detailed and sophisticated model. To achieve this primary purpose, the research outlines the following specific objectives:

1. Develop an Expanded Model for Detecting Earnings Management: The first part of this study aims to develop a comprehensive model that surpasses previous financial ratio research by incorporating significant factors that influence EM, including FO, CG (Adams et al., 2005), and earnings quality (Dechow & Dichev, 2002). Introducing this potential bias as an additional variable in the model improves the identification of earnings management cases in companies. This entails not only the identification of additional variables but also their optimal integration into the model framework. Additionally, the model will undergo an iterative training validation process to ensure accuracy and reliability in identifying EM practices.
2. Identify Influential Financial Ratios and Variables: Another intention is to spot the financial ratios and variables that are excellent indicators of EM behavior (Dechow et al., 2010; Beneish, 1999). The study endeavors to identify the metrics that would indicate the difference between companies with EM and companies having clean earnings practices based on rigorous theoretical and empirical evidence. To achieve this goal, we must thoroughly examine the literature on EM detection techniques and systematically analyze candidate variables related to sectors and regulatory contexts. Moreover, multivariate analysis, machine learning algorithms, and other complex statistical models can identify underlying causes and connections between variables.
3. Evaluate the Applicability and Effectiveness of the Developed Model: The study is also concerned with assessing the applicability and effectiveness of the proposed model across a wide range of companies from different industries and regions (Kothari et al., 2005; Shahriar et al., 2020). The research aims to provide insights into the effectiveness and reliability of the model across various contexts and scenarios by employing thorough testing and validation processes. This includes gathering data from companies in the real world and using the model to find evidence of EM. In addition, we will conduct sensitivity analysis and scenario simulation on the model to test its applicability and predictive power under different severity levels of EM and different quality levels of CG. These evaluations and their results will inform the model's generalizability, limitations, refinement, and future use.

Through the fulfillment of these aims, this study seeks to provide substantial insights into EM practices, which will ultimately lead to the enhancement of financial practices and CG in the broader organizational and international sphere. This study spans from the training until October 2023 and aims to provide stakeholders with valuable insights and tools for improving transparency, integrity, and accountability in financial reporting practices. Ultimately, this research hopes to advance beneficial financial decision-making and CG throughout the globe.

1.4 Research Questions

The research will address three primary questions, each aimed at elucidating different aspects of earnings management and its detection:

A. What variables significantly contribute to detecting earnings management when integrated with corporate governance, EQ, and FO?

This question investigates the multidimensional nature of the detection of EM as it examines the fundamental variables that represent and explain the relationship among CG, EQ, and FO. This thesis describes the complex interplays between these elements, their influence on the detection process, and the relationship between all four aspects. This research will examine crucial elements that may indicate the adoption and degree of EM strategies via a comprehensive literature analysis and case studies. Variables may include board composition, audit quality, financial reporting development, earnings persistence, and the influence of FO on local ownership. How different factors affect each other will give us much information about how well EM detection models work and help us tell the difference between real and false correlations between feature variables. The research will also explore potential moderating and mediating effects among these factors to enhance our understanding of their combined impact on identifying EM.

B. How do financial ratios and variables vary between companies engaged in earnings management and those not?

Therefore, this question aims to provide evidence of the unique financial features and metrics that distinguish earnings managers from those who adhere to ethical financial reporting principles. This involves comparing financial ratios and variables across the two groups, looking for trends, abnormalities, and outliers that signal earnings manipulation—becoming a fraud detector. From a practical point of view, the study will

focus on a broader range of financial factors, such as profitability ratios, leverage ratios, accruals quality metrics, and cash flow metrics. The goal is to determine how the EM detection scores can help tell these factors' differences. By thoroughly analyzing financial statement information and performance measures, the study seeks to explain the underlying mechanisms and practices of EM behavior. Additionally, it will examine sector-specific and horizontal levels within industry/sector-level trends to identify similarities and differences in financial reporting practices. The study will attempt to identify predictive models that can accurately classify companies engaging in EM from those not by utilizing advanced statistical techniques, including cluster analysis, discriminant analysis, and machine learning algorithms.

C. What is the practical applicability and accuracy of the developed earnings management detection model in different industries and regions?

The third research question assesses the applicability and validity of the EM detection model developed in this study from the perspective of the Arab financial markets. We can then test the model eventually by applying it to a heterogeneous sample of companies from different business sectors and geographical locations in the Arab world and see how it can lead to stimulating or inhibiting action. We will examine real-world financial statements, auditor information, and regulatory submissions to God to analyze the proposed model's capacity for predicting the probability of the manipulation. A series of empirical analyses and sensitivity and specificity evaluations will assess the predictive power of the study and performance metrics. Moreover, we will follow some documentation of the model performance during the testing and discuss the possible sources of bias, errors, and uncertainty that might affect the validity and generalization of the model in Arab financial markets. The research will be field-tested by industry leaders, regulatory bodies, and academic scholars, who will offer feedback and insights to ensure the model is suitable for practical scenarios. The study will also look for ways of improving this model by correlating empirical results with feedback received from the various stakeholders to develop a complete and general tool that can be used in order to identify EM in Arab financial markets.

We use quantitative methodologies, including statistical analysis and case studies, to address these research questions. This attempts to provide comprehensive and nuanced

knowledge of the factors influencing EM and the effectiveness of detection models in various contexts.

1.5 Importance of the Study

This study's general importance becomes even more evident in Amman and Palestine's unique economic and business dynamics. Since Amman is already becoming a major financial center in the region, it is imperative to understand and formulate responses to issues of EM to safeguard the integrity and stability of the financial markets (Alanezi et al., 2019; Mechelli & Cimini, 2021). Understanding EM would contribute to economic stability and progress in Palestine, which has distinct socio-political issues (Hassan, 2018). Its significance transcends scholarly curiosity, yielding profound implications for philosophy, practice, and society. The project seeks to improve the identification and prevention of EM practices by addressing critical deficiencies in current approaches and frameworks.

1) **Develop an Extended Framework for Detecting Earnings Manipulation:**

Developing an extended model for detecting EM indicates a new approach to financial analysis. Even though traditional models are valuable, they struggle to capture the nuanced interplay of factors affecting financial integrity. This multipoint index, incorporating CG, EQ, and FO variables, represents a breakthrough in the practical and comprehensive detection and prevention of financial fraud. This enhanced model will enhance theoretical comprehension and have substantial practical implications. Such a tool could detect nuanced indicators of manipulation, thus helping auditors, regulators, and investors by strengthening market integrity and investor confidence.

2) **Determine Key Financial Metrics and Variables of Significance:**

Indeed, exploring the formulation of significant financial ratios and determinants could enrich our understanding of the multifaceted aspects of financial disclosures. By labeling specific metrics as transparent and others as manipulative, the research emboldens stakeholders to make informed decisions. Such a method considers traditional financial metrics and related aspects, such as culture, regulation, and ethics. With this knowledge reflecting the fundamental causes of EM behaviors, practitioners and regulators can implement appropriate interventions to enhance financial transparency and accountability. Furthermore, acknowledging sectoral inequalities and industry-specific

patterns informs targeted measures aimed at fostering sustainable economic growth and stability. The study findings build upon the work of Alanezi et al. (2019). This facilitates a comprehensive understanding of the specifics influencing financial ratios and factors, enhancing the practical accuracy of the research findings by Mechelli & Cimini (2021).

3) Assess the practicality and efficiency of the Developed Model.

This detailed model relevance and utility evaluation is essential for harmonizing theory and practice. This research shows that the framework is applicable in real-life contexts by testing it in varied organizational and regulatory settings. The research then rigorously validates the model's capacity to detect and reduce EM practices. Empirical validation boosts model credibility and reassures stakeholders of its practicality and relevance. Stakeholders may reduce risks and promote financial stability, integrity, and accountability in international financial markets by using a powerful financial manipulation detection tool. The model's effectiveness is strengthened by building on Dechow et al. (2010) and Beneish (1999). It shows its capacity to improve financial governance and reporting. Adams et al.'s research confirms the study's extensive, significant insights on EM behaviors. Archetti et al. (2005) and Jensen & Meckling (1976) are excellent resources for policymakers and industry practitioners to inform their financial risk management and governance programs.

Theoretical and Practical Implications of the Study for Earnings Management Detection Our model contributes to accounting and finance theory by helping us understand the relationships among determinants such as CG, EQ, and FO while offering valuable tools and insights to practitioners and policymaker stakeholders.

This study develops a multidimensional approach to EM based on existing theories regarding the financial, organizational, and international contexts in which firms operate. Moreover, it contributes to the existing models by including variables believed to impact EM practices. This also establishes an application mechanism that will facilitate further investigation into the intricate relationships between financial reporting and CG.

By leveraging state-of-the-art natural language processing techniques, the model aims to robustly identify potential earnings manipulation cases, ultimately strengthening the integrity of financial reporting and boosting stakeholder confidence in companies' financial statements. In addition, it guides the formulation of CG policies and practices

to reduce the likelihood of EM. In addition, it helps investors and analysts make better-informed decisions by providing a more nuanced understanding of financial statements and the quality of reported earnings. In conclusion, this study adds value to financial market stability and integrity within the contexts of Amman and Palestine through the enhancement of investor confidence and the promotion of sustainable economic development.

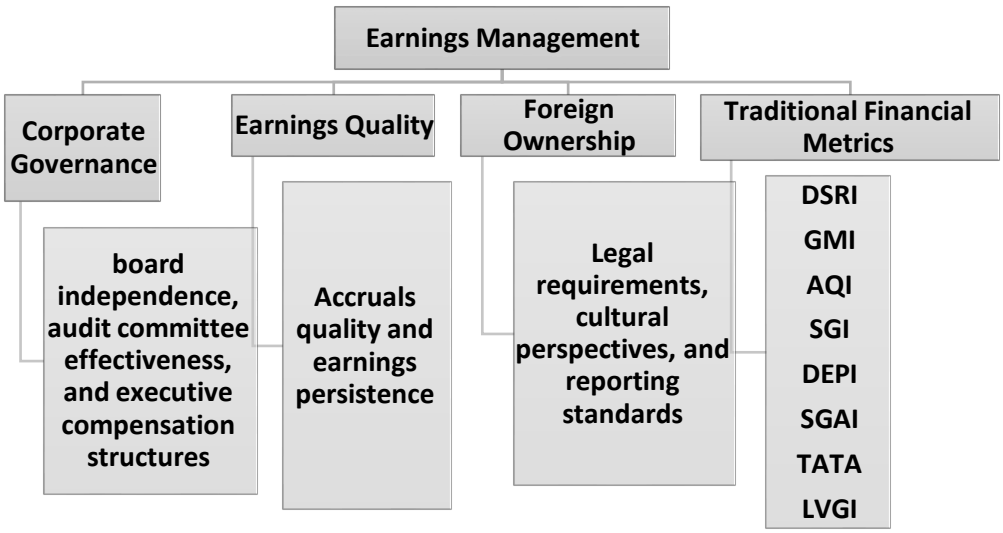
1.6 Overview of the Model

The Beneish M-Score Model, created by Professor Messod Beneish, is a mathematical framework to detect earnings manipulation. The model employs a collection of financial measures and accounting factors to derive a score, with a higher score indicating an increased likelihood of earnings manipulation (Beneish, 1999; Boni et al., 2023). This instrument is essential for analysts and investors seeking to identify corporations using aggressive accounting practices.

The Beneish M-Score effectively identifies anomalies and potential red flags in a company's financial statements via the use of financial ratios and variables, offering early alerts to stakeholders on suspected financial improprieties.

This paper develops a more comprehensive model that includes more variables appropriate to the economic context of Amman and Palestine, enabling a more accurate detection of EM behavior. Such a method improves the understanding of how these determinants affect EM behavior in the respective regions.

The broader model for EM detection incorporates a wide spectrum of independent variables comprising common financial ratios and new variables. This model was very carefully created to dominate the influence of these features on income management behaviors, encompassing the factors of systemic governance of motive (SGM), income fines, and foreign possession of capital.



1. Corporate Governance: Corporate governance includes several procedures related to firm oversight, such as executive compensation structures, audit committee effectiveness, and board autonomy. These components are essential in ascertaining the ethical clarity of financial reporting in firms.
2. Earnings Quality: The quality of accruals and the persistence of earnings enhance the understanding of the reliability and use of financial statements. Strong earnings signify transparent and sustainable financial reporting practices.
3. Foreign Ownership: We analyze the influence of foreign ownership on earnings management strategies, considering legal restrictions, cultural perspectives, and reporting requirements. FO creates a distinctive dynamic that might modify global financial reporting requirements.
4. Traditional Financial Metrics: The method combines conventional financial measures and indicators, including profitability, leverage, and liquidity ratios, to provide a thorough assessment of a company's performance and financial condition. The study included eight financial metrics from the Beneish M-Score model, each meticulously selected to represent specific dimensions of financial performance and possible earnings manipulation:
    - The Days Sales in Receivables Index (DSRI) measures the duration required to collect receivables. High DSRI indicates potential inflating sales (Kovačeviç, 2019).
    - Gross Margin Index (GMI): This index measures changes in gross margin. Material divergence may indicate earnings manipulation (Lokanan, 2021).

- Asset Quality Index (AQI): This index measures variation in asset quality. A high AQI may indicate the need to capitalize on expenses to increase profits (Kovaeviç, 2019).
- The Sales Growth Index (SGI) measures the sales growth rate. Wijesinghe et al., 2021, introduced the concept of Aggressive Revenue Recognition.
- Depreciation Index (DEPI): Monitors fluctuations in depreciation rates. Changes can expose earnings manipulation (Esther, 2021).
- Sales, General, and Administrative Expenses Index (SGAI): Assesses SG&A expenses changes. Changes for these measures must not be sudden and unjustified, which indicates earnings management (Anh & Da Hanh, 2022).
- Total Accruals to Total Assets (TATA) refers to the accruals ratio to total assets. According to Kovaceviç (2019), a high level suggests earnings manipulation.
- The Leverage Index (LVGI) measures changes in leverage. The Leverage Index (LVGI) illustrates strategies for managing debt and provides indicators of financial strain in 2023.

The model also integrates the effectiveness of various media types with structured information to enhance the accuracy of detecting EM. It guarantees a deeper understanding of the factors influencing profit management actions and provides valuable insights to those involved in decision-making and regulatory compliance processes. It aims to contribute to the improvement of the financial reporting process, which helps enhance CG practices and investor confidence in Amman and Palestine through empirical validation and continuous modification of the model.

We use two different modeling techniques in this study, discriminant analysis and logistic regression, to model and interpret the nature of EM dynamics.

The Statistical Approach (Quantitative Model) employs discriminant analysis to pinpoint subtle variations in firms' EM practices. This quantitative model allows us to segment companies into two buckets: earnings managers (1) or non-earnings managers (0). Financial ratios, indicators of good CG, metrics for measuring EQ, and FO comprise the discriminant function. Estimates from the analysis, then, are key to distinguishing between firms that engage in EM to differing extents.

The logistic regression (binary model) complements the quantitative model by estimating the probability of a firm engaging in EM. It helps classify companies into two buckets: profits controlled (1) versus no profits controlled (0). There were four independent variables in the logger model: financial ratios, CG measures, earning quality index, and FO. The model looks at the log odds for the probability of profit management.

What financial ratio method is best for distinguishing experiments by companies that manipulate earnings from those that don't? Determining the most significant and valuable financial ratios provides us with valuable insights into identifying EM practices in specific locations such as Amman and Palestine.

1.7 Scope and Limitations

In this study, we aim to create a holistic model for detecting emerging EM, combining several variable dimensions and their information, including CG, EQ, FO, and traditional financial performance variable data. We focus primarily on how these factors affect EM practices in Amman and Palestine.

We also analyze the metrics of EQ, such as accruals quality and earnings persistence, focusing on their potential to signal transparent and sustainable earnings and financial reporting during the pandemic period. It also explores how FO affects EM practices in multinationals by considering legal practices, cultural perspectives, and reporting standards. Conventional financial performance ratios, such as profitability, leverage, and liquidity ratios, evaluate these variables to define the firm's EM condition over time.

Despite this study's ambition, it is important to acknowledge its limitations. Findings about accuracy and completeness are based on the availability and reliability of financial data for Amman and Palestine firms. The inaccuracy or absence of data can influence the model's strength. Furthermore, the distinct political climates of Amman and Palestine frame the findings and the suggested model, limiting their applicability to other areas with varying economic, regulatory, and cultural contexts. Incorporating variables such as CG, EQ, and FO into a cohesive model introduces complexity, which may result in challenges in model construction and interpretation.

Amman and Palestine's distinctive economic environments could be subject to unpredictable political, social, and economic developments that might impact the applicability and relevance of the model over time. Additionally, the evaluation of CG mechanisms is subject to subjectivity, particularly when assessing aspects like the independence of the board and the effectiveness of the audit committee, as these assessments may vary depending on different perspectives and interpretations. Note that external factors such as changes in regulatory policies, market conditions, and global economic trends, which can significantly impact EM practices, may necessitate periodic modifications to the model.

To summarize, the current study aims to fill the gap of prior literature regarding detecting EM by proposing an integrated model that encompasses CG, EQ, FO, and traditional financial indicators. Nonetheless, this study is limited to specific contexts within Amman and Palestine, and therefore several limitations must be recognized, including the availability of data, home-based emergency modeling development, model complexity, and external influences under diverse circumstances.

1.8 Operational Definitions of Terms

Earnings Management (EM): is when management changes financial statements on purpose to meet certain financial reporting goals, such as meeting earnings expectations, smoothing out income, or avoiding losses. Different accounting methods, such as revenue recognition, discretionary accruals, and accounting policy changes, can carry out this manipulation (Healy & Wahlen, 1999; Gunny & Pollard, 2023).

Corporate Governance: The framework of rules, practices, and processes that direct and control a firm is known as corporate governance. These helps make sure that managers and shareholders have the same goals (Shleifer & Vishny, 1997); they include the roles and responsibilities of the board of directors, executive management, and shareholders; they also include governance mechanisms like how independent the board is, how well the audit committee works, and how much executives are paid (Al-Haddad & Whittington, 2019).

Earnings Quality: This is the level at which reported earnings accurately mirror how well the company is doing in reality without any form of hand meddling. High EQ indicates that the earnings figures are stable, trustworthy, and meaningful for investors

and other stakeholders. This idea has widely been associated with the development of quality of accruals, the enduring of earnings, and the measure in which the earnings could be predicted and sustained over the time (Dechow and Schrand, 2004; Bartov et al., 2002).

Foreign Ownership: Through Stock Exchanges is the share of ownership of a company's VIC-issued shares that are owned by individuals or institutions domiciled outside the country where the company is domiciled. This includes portfolio investment (for example, shares of individual foreign persons or institutions) and direct investment (for example, shares of foreign companies). Because foreign and local shareholders work in different cultural, legal, and regulatory environments, having FO can change how a company is run, how its finances are reported, and how its earnings are managed (Han et al., 2022; Guedhami et al., 2017).

Beneish M-Score: The Beneish M-Score Model is a mathematical model that was created by professor, Messod Beneish, in order to detect earnings manipulation or financial statement fraud. It makes a score using financial ratios and accounting variables, where a higher score indicates a higher likelihood of earnings manipulation. The model can be used as a tool for analysts and investors to find those companies that may be strikingly aggressive in accounting (Beneish, 1999; Boni et al., 2023).

Discriminant analysis: A method for dividing groups by characteristics. For this study, development nomenclature means telling the difference between companies that manage their earnings and those that don't by looking at a set of ratios, CG factors, EQ variables, and FO variables (Dakhlallah et al., 2020).

Logistic Regression: It is a statistical model that in its basic form uses a logistic function to model a binary dependent variable. In this study, financial ratios, CG, EQ, and FO were used as independent variables to use logistic regression to figure out if the company is earnings management (Dechow et al., 2010).

Traditional Financial Metrics: Traditional financial metrics are standard financial ratios and indicators used to evaluate a company's performance and financial position. Examples would include profitability ratios (like return on assets and net profit margin), leverage ratios (like debt-to-equity ratio), and liquidity ratios (like current ratio). These measures provide a reference point for assessing a firm's economic health and are

incorporated into the model to improve the identification of EM (Dechow & Dichev, 2002).

Chapter 2 covers a broad literature review on EM, CG, EQ, FO, and the relationship between these matters. The article details landmark models and theories, including the Beneish M-Score model, the Jones model, and different studies on the relationship between CG mechanisms and earnings management practices. So, this chapter does a better job of putting together the results of different studies that were done in different parts of the world and in different industries. It also stresses how complicated and varied the methods are for finding earnings manipulation. This chapter looks at what has already been written and builds on that to suggest a better way to spot earnings manipulation using both traditional financial attributes and numbers that aren't directly linked to financial statements.

Chapter Two: Literature Review

2.1 Introduction

This chapter deeply investigates the complex web of relationships between earnings management, CG, EQ, and FO, investigating their interconnections and impact. This study does horizon scanning on industrial companies registered on the Amman Stock Exchange and Palestine Exchange to build up an augmented model that will possibly enhance the identification of average earnings management practices in these separate market contexts.

For a comprehensive understanding, the exploration begins with a comprehensive definition and breakdown of the relevant variables, as it provides a greater clarity of their nature and connotations (Fernandes et al., 2021). Then, the article examines the CG structure, highlighting the importance of board independence, audit committee, and executive compensation in encouraging earnings management (as referred to above, Wang & Xu, 2021; Sitanggang et al., 2020).

Additionally, the dynamic dialogue extends to examining the close interrelationship between EQ and earnings management, tracing and mapping the multifaceted contours of the factors that determine the veracity and persistence of reported earnings (Bartov et al., 2018; Chen et al., 2020). Moreover, the study delves into the intricate landscape of foreign ownership, examining the multifarious relationships between legal frameworks, cultural factors, reporting standards, and their collective impact on earnings management (Li et al., 2020; Sun et al., 2019).

Within this complex narrative, traditional financial metrics stand out as crucial instruments that detect potential earnings management by measuring the DSRI, GMI, and TATA ratio (Boni et al., 2023; Maniatis, 2022; Khatun et al., 2022). Theoretical perspectives are woven into the empirical landscape, and conceptual frameworks buttress minimalist explanatory agencies to illuminate the mechanisms underpinning earnings management phenomena (Hashed & Almaqtari, 2021; Abdou et al., 2021).

Towards the end of the evolution, a discussion is done about all the existing centuries of studies to illustrate the academic legacy that will constitute the argument of

the new research. In the end, it ends its leap with a discussion about the contribution and originality of the research to be introduced, which is going to be a consideration of earnings management among the industrial firms in both Amman and Palestine exchanges (Dakhlallh et al., 2020; Dechow et al., 2010; Shahriar et al., 2020).

2.2 Theoretical Framework

The conceptual framework lays out some relationships between key variables, which should assist the readers in understanding the leading practices in earnings management. These interactions are based on theoretical underpinnings drawn from CG, financial accounting, and behavioral finance literature. They are designed to give a holistic perspective on the antecedents and outcomes of earnings management.

CG, EQ and FO are drawn into the fold of earnings management in this framework. Sound CG mechanisms are anticipated to suppress the emergence of earnings management by enhancing transparency, accountability, and ethical behavior within organizations (Firmansyah & Saksessia, 2020). More specifically, elements like board independence, the efficacy of audit committees, and alignment between executive compensation structures and performance metrics are expected to be central to companies' modal ethical culture and oversight system (Nissim, 2021).

Similarly, better EQ is expected to be correlated with lower incidences of earnings management. EQ measures like accruals quality and earnings persistence indicate reported earnings' reliability, relevance, and transparency (Zadeh, Askarany, & Asl, 2022). Higher EQ indicates fewer incentives and opportunities for earnings manipulation since transparent financial reporting helps build stakeholder trust and reduce agency conflicts between managers who prepare financial statements and shareholders who rely on them.

Additionally, CG, EQ, and FO may serve as moderators or mediators in the relationship between standard financial measures and earnings management. Robust corporate governance measures, including the restriction of managerial discretion and the mitigation of opportunistic behaviors (e.g., risk-taking), might diminish the relationship between leverage ratios and profits management (Fakhfakh & Jarboui, 2020). Companies that use open financial reporting standards are reluctant to artificially enhance profits by

manipulation; hence, strong emotional intelligence may moderate the relationship between profitability ratios and earnings management (Khuong et al., 2022).

These include potential linkages among corporate governance factors, earnings quality indicators, foreign ownership variables, and standard financial ratios. Through these correlations, we can better understand the interaction of factors with earnings management practices (Khuong & Anh, 2022). Specifically, a positive correlation found between board independence and earnings quality may imply that yields for firms with independent boards have better transparency and reliability in financial reporting (Araki & Martins, 2022).

The theoretical perspective serves as a background for illustrating the reasons behind and consequences of earnings management in organizations. This section explores managerial decision-making and earnings management practices concerning various theories in economics, finance, and organizational behavior.

The general goal is to improve the identification of earnings management by introducing corporate governance, earnings quality, foreign ownership variables, and traditional financial indicators. Earnings management bending financial statements to portray a preferred view of a company's financial fitness creates significant difficulties for investors, regulators, and others. Traditional approaches to identifying earnings management tend to rely heavily on different financial ratios and metrics, which, although practical, may miss some essential elements that affect corporate behavior and financial reporting practices.

At the end of such figures, there are, therefore, limitations inherent in the indices of earnings management proposed to date; thus, addressing this issue, in this section, the proposed framework has included other dimensions that add to the dimensions already developed to extract the desired additional information about the earnings management aspect. Essential corporate governance mechanisms, including board independence, audit committee efficacy, and CEO remuneration structures, are crucial for ensuring the openness and accountability of financial reporting (Larcker & Tayan, 2020). Quality of earnings denotes the degree to which reported earnings accurately represent a company's actual financial performance, which is frequently inadequately represented by cash-based earnings (Elbannan & Hussainey, 2022), as cash earnings serve as a superior indicator of

the firm's financial performance over the long term (Ahmad et al., 2023). Furthermore, foreign ownership introduces additional legal responsibilities, cultural perspectives, and reporting requirements that might distinctly influence the financial reporting practices of multinationals (Han, Ding, & Zhang, 2022).

The model focuses on these dimensions and integrates them into one to improve the accuracy and effectiveness of earnings management detection. This leads to pause and steady financial analysis, which assists stakeholders in making informed decisions and ensures compliance with regulations. It specifically draws on the local contexts of Amman and Palestine, where disparate economic transactions, corporate practices, and legal environments create a need for distinct categories of financial reporting influencers.

2.2.1 Agency Theory

The principal-agent issues in firms are best depicted by agency theory (Jensen & Meckling, 1976). At its heart, this theory includes two main actors: the principal (commonly shareholders) and the agent (management). The principal gives the agent decision-making authority to act for the principal. Nevertheless, conflicts of interest often arise, since these two parties possess markedly divergent objectives. Shareholders want to increase wealth, but managers may prioritize their own utility or concentrate on short-term gains. This basic mismatch underlies the agency issue, which is the foundation of agency theory.

As pointed out by Macho-Stadler and Pérez-Castrillo (2020), Principal-agent relationships create an information asymmetrical situation in which managers, acting as the agents, have significant ownership of detailed and relevant information about the company in terms of its operations, finances, and forecast. As Li (2020) indicates, this information asymmetry gives managers a vast advantage over shareholders and other stakeholders, allowing them to distance themselves from external parties while still participating in company business with a level of discretion that may not allow stakeholders to probe them. However, this asymmetry of information paves the way for opportunistic behaviors, empirical research on the Amman Stock Exchange conducted by Hamdan (2023) indicates.

Xu and Qi (2022), the accompanying authors, assert that managers with access to internal data consistently prioritize self-interest or organizational objectives above profit

management, which constitutes fraud. EM is a multifaceted phenomenon, including several tactics that falsely manipulate financial statements to falsely portray a company's financial condition, surpass market expectations, or influence investor sentiment. Consequently, income smoothing, aggressive revenue recognition, and other misleading practices that significantly distort an organization's condition exemplify the delegation of managerial authority within corporate governance frameworks and the potential for agency issues to misalign managerial actions with shareholder interests.

At a fundamental level, the principal-agent relationship highlights the tension for power and accountability in organizations. Although managers have a great deal of power and discretion, they owe fiduciary duties that require them to act with transparency and integrity and align their interests with those of shareholders (Macho-Stadler & Pérez-Castrillo, 2020). However, the potential for short-term benefits or personal incentives might encourage managers to adopt EM techniques, which could harm the integrity of financial reporting and hurt investor trust (Xu & Qi, 2022). Consequently, this emphasizes the need to comprehend the dynamics involved in principal-agent relationships and their effects on EM in shaping CG structures that support accountability, ethical behavior, and long-term value creation (Li, 2020).

As agency theory has developed, its primary constructs have focused on the tension between agency conflicts and how such conflicts can shape an organization. Corporate governance practices address agency problems by incentivizing managers and aligning their interests with those of shareholders. According to Baird (2022), the link between corporate governance practices and financial performance suggests the need for effective governance procedures that align the interests of shareholders and lower agency costs, thus strengthening reporting profit quality.

We argue that if two variables drive firm performance, then a mediation analysis that explains the intermediary role of this analytical sequence is based on the paper by Firmansyah and Saksessia (2020), which states that mediation explains how agency theory connects with corporate governance procedures. Strongly independent boards and well-designed executive compensation systems address agency problems by aligning executive incentives with shareholder value. These governance mechanisms reduce agency costs resulting from managerial discretion and opportunism through the implementation of oversight and accountability.

This simplification and generalized agency theory expands these agency dynamics to a broader array of stakeholders beyond shareholders and management. From their investigation of company characteristics relating to EQ between controlling shareholders, Kontesa, Lako, and Wendy (2020) find evidence of boards acting as monitors that improve EQ. Additionally, Al-Absy et al. (2020) focus on the participation of board chairmen in audit committees and the influence on EM in the Malaysian context, which emphasizes the necessity of the balancing role of the board in mitigating agency ills and enhancing corporate transparency.

In addition, the results of Vitolla et al. (2020) emphasize the more significant implications of agency conflicts on the quality of integrated reporting. These agency costs are accrued mainly through managerial opportunism and earnings management, factors that prevent it from providing transparent and reliable information to stakeholders. Confronting these tensions is essential for building a corporate culture centered on value creation, stakeholder engagement, and environmental stewardship.

The agency theory has addressed corporate governance and profits management in multiple sectors and geographies, expanding beyond traditional financial stakeholders. In that regard, board capital is identified without comparing its effects on state-controlled and non-state-controlled shareholders (Kontesa, Lako, & Wendy, 2020). Al-Absy et al. In their investigation of the role of board chairs holding contemporaneous membership on audit committees in an emerging market context of Malaysia, Palaniappan et al. (2020) underscore the importance of board oversight over agency-related issues and corporate transparency.

While widely discussed since its original application in CG, the implications of agency theory extend well beyond just organizational decision-making. Drawing from the emerging literature on references, Boyd, Sese, and Tillmanns (2023) focus on the design of business-to-business (B2B) customer references and employ a signaling theory lens to understand how firms use references to signal their trustworthiness and reliability to potential clients in the process of reducing information asymmetry. It also investigates the potential impact of the signaling theory on investor perception (Komara, Ghozali, and Januarti, 2020).

Agency theory illustrates how different governance mechanisms affect shareholder value in various industries, providing practical guidance for CG. This is the core reason for the contribution, which highlights why agency theory has been positively related to corporate governance.

2.2.2 Signaling theory

Signaling theory (Spence, 1973) provides valuable implications that firms may proactively signal private information to outside parties to reduce the information asymmetry gap. In CG literature, signaling theory highlights the importance of credible and transparent communication between firms and investors. Earnings releases are important signals of a firm's financial condition and outlook. However, managerial discretion can affect how these signals are portrayed, thus compromising not only the quality of earnings and transparency. Zhang et al. argue that CSR reporting can signal that a firm is committed to being ethical and sustainable (2020). CSR reporting can signal organizational values and improve stakeholder perceptions of trust and legitimacy, and their study demonstrates this.

Broader in scope, Kustono (2020) addresses the reasons behind earnings management behavior among firms, particularly in the context of public property and real estate companies in Indonesia. The study also offers valuable insights by exploring the underlying motivations behind EM behaviors, shedding light on how firms strategically utilize financial reporting as a signaling instrument to modify stakeholder perceptions and market expectations. Similarly, Komara et al. - Focusing on signaling theory (see: 2020), which offers insight into firm value, the authors present evidence of the connection between signaling behaviors and market valuation. Their research calls on the significance of firms signaling such information to investors and stakeholders.

Boyd, Sese, and Tillmanns (2023) also apply a signaling theory lens to the design of a B2B customer reference. They demonstrate how companies shamelessly use customer references to communicate credibility, reliability, and trust to potential customers, leading to conversions and long-term customers. Expect only a few signals that can be precisely controlled to accomplish the low-cost dealers' vicious cycle. Passivity to signaling theory should expand to different areas, information impacts

marketing specializations, and establishments reduce certain expenses in line with effective communication and signaling theory.

Working on CSR and signaling, Uyar, Karaman, and Kilic (2020) suggested a review of CSR - reporting within the global logistics industry to determine if these reports represent accurate communication or serve as a greenwashing mechanism. The implications of their findings shed light on the subtleties of CSR reporting behaviors and their consequences for stakeholder perceptions and organizational reputation. In contrast, Rusydi (2021) investigates the influence of CEO narcissism behavior on the EM outcome of company performance.

Establish empirical evidence on factors influencing EM and EQ, considering it an emerging market (Saleh, Afifa, and Haniah, 2020). This furthers understanding of the economic pull influencing financial reporting behavior in an emerging market setting. Together, such studies highlight the multidimensional aspects of signaling theory and its consequences for CG, financial reporting, and stakeholder management approaches.

In summary, specialized and multidisciplinary research using signaling theory offers significant insights into the intricate linkages among corporate communication, decision-making, and performance assessment. By analyzing the concurrent methods via which corporations convey information to stakeholders across various channels and activities, researchers may enhance their comprehension of the factors influencing corporate behavior and the implications for organizational results and stakeholder perceptions.

2.2.3 Stakeholder Theory

Twenty years ago, Freeman postulated the stakeholder theory in an industry-altering paper, challenging the view that the firm should have a singular focus on the shareholder; it has since become an expectation in some markets. It calls for a more holistic approach, creating a shareholding priority for not just shareholding and shareholders but a range of interests affecting stakeholders and reflecting the interests of various stakeholders from employees and customers to suppliers, communities, regulatory bodies, and environmental organizations. Stakeholder theory has evolved via ongoing conversation and disputes over the role of companies in society, as recently articulated by Freeman (Freeman, 2023). His study underscores the need of recognizing the political dimensions

of stakeholder theory, emphasizing the power imbalances and conflicting interests inherent in stakeholder interactions.

Kivits and Sawang's (2021) empirical example well illustrates the dynamic nature of stakeholder participation, particularly in sectors such as aviation. Aviation enterprises are integrated inside intricate ecosystems, managing interactions with stakeholders possessing diverse demands and expectations. The stakeholders include passengers, workers, regulators, and environmental advocacy organizations. Airlines must engage in proactive communication, demonstrate transparency in their decision-making processes, and resolve stakeholder concerns. An Outgoing Communication Kivits and Sawang elucidate the significant ramifications for corporate governance methods stemming from complex stakeholder interactions.

In recent decades, stakeholder theory has gained prominence as an academic research and practical implementation area, especially regarding the implications for CG, sustainability, and organizational performance. hoping that these brief reflections on some of the trends we see in the academic literature can make a small contribution to how we think about what the future of stakeholder-oriented academia ought to look like. Freeman (2023) maps out future directions for stakeholder theory; as the relationships between stakeholders become increasingly dynamic, this demands that one pays attention to moves to put power or influence onto stakeholders and potential political dynamics that engage stakeholder interactions. Similarly, Barney et al. (2020) suggest that developing a theory of stakeholder governance is an important yet highly complex undertaking that owes itself to the challenge of achieving a balanced approach to the conflicting interests of stakeholders that need to be considered in organizational decision-making.

One area of great interest is the nexus between corporate social responsibility (CSR) and earnings management. Ehsan et al. (2020) proved that CSR can be a management tool in EM settings, and firms may adhere to socially responsible practices to avoid speculative or adverse financial outcomes. For instance, Velte (2020) conducted an extensive literature review on CSR and EM while investigating how CSR practices may influence financial reporting behavior.

Moreover, theorists have interrogated the tensions intrinsic to stakeholder theory, especially around the competing claims of different groups of stakeholders. Freeman,

Phillips, and Sisodia (2020) describe the tensions evident in the complex challenge of balancing stakeholders, who all have conflicting goals. In a similar vein, Barney and Harrison (2020) examine stakeholder theory at a pivotal moment, arguing that theoretical innovation is imperative as we face the challenges of stakeholder governance and decision-making processes.

Moreover, stakeholder theory has expanded its focus beyond its initial parameters to include environmental, social, and governance (ESG) activities. Peng and Isa's (2020) empirical study examines the correlation between ESG activities and the performance of Shariah-compliant enterprises, aiming to uncover the agency or stakeholder theory implications behind these practices. This research contributes to the extensive literature elucidating how stakeholder theory transcends financial stakeholders, including social and environmental criteria, therefore showing a more comprehensive approach to corporate governance and sustainability.

2.2.4 Resource Dependency Theory

In order to do so, we utilize resource dependency theory (RDT) introduced by Pfeffer and Salancik (1978), which explains how organizations deal with dependence on other organizations for resources to survive and grow, which creates dependencies with outside entities. According to the theory, firms are not autarkic, and they must interact with their environment to obtain essential inputs like capital, technology, labor, and raw materials (Kvangraven, 2021). This dependence on external actors creates interdependencies, is a potent modifier of organizational behavior, and affects organizational strategies. Therefore, managing these dependencies is critical for risk mitigation and maximizing the potential advantages that can be gained over time through a system of reciprocal relationships that facilitate the achievement of strategic objectives.

RDT emphasizes that organizations exist as a part of a web of relationships and that the nature of these relationships can simultaneously constrain and enable organizational behavior (Kvangraven, 2021). The extent of dependency fluctuates based on the importance of the resource, the presence of alternatives, and the degree of control over resource distribution. Firms are acutely aware of such dependencies and often use numerous strategies, including alliances, mergers, joint ventures, and robust governance procedures.

With regard to FO, multinational corporations (MNCs) are often dependent upon foreign investors for crucial resources (Orazalin & Baydauletov, 2020). These assets encompass capital investments, state-of-the-art technologies, management know-how, and access to global markets. With FO, a firm's capabilities and growth prospects can improve quite fundamentally. However, it also has new complexities and risks.

For example, by also addressing the management of foreign capital and preparing policymakers to ensure that foreign investors continue to provide capital or increase it (Orazalin & Baydauletov, 2020), this capital can be helpful for expansion and innovation, giving firms the financial resources and investment they need to embark on large-scale projects and strengthen their competitive position. Utilization of advanced technology gained from foreign partners can improve operational efficiency and product quality, which, in turn, will increase productivity and profitability. In addition, FO may enable access to new markets, reducing market concentration and possibly growth and diversification in revenue.

The impact of CSR strategy on company environmental performance: the moderating effect of board gender diversity, research by Orazalin and Baydauletov (2020). It illustrates how internal governance mechanisms, such as board composition, influence the efficacy of techniques for controlling external resource dependence (i.e., coalitional tactics). Board gender diversity may enhance decision-making quality by including a variety of viewpoints and experiences into the process, which is essential when addressing the complexity presented by FO.

Successful foreign management also depends on the proper communication and goal alignment of both foreign investors and local management. These are key factors in managing cultural differences and making the work collaborative. To manage these problems, companies adopt cross-cultural training and set up direct communication channels.

The resource dependency theory also relates external resource dependencies to EM practices. These pressures can be particularly intense in firms with high reliance on external resources, like investments from international players (Arioglu, 2020). Between Social Pressure and Earnings-Related Outcomes, there is a sub-composed element: This Pressure causes management Practices,' specifically: EM practices are increased (Firms

inflate Financial Statements) by which they take that action to meet investors financial expectations to attract them so that they can get further resource flows.

Arioglu's (2020) research shown that the inclusion of female members mitigates EM in Turkey, indicating that board diversity significantly impacts the quality of financial reporting. This supports the argument for more diversified boards capable of effectively managing external dependencies and demands. Oryzalin (2020) shown that in a developing market, board gender diversity and robust corporate governance correlate with a reduction in earnings management, underscoring that effective governance is essential for managing resource dependence and ensuring accurate financial reporting.

As Kvangraven (2021) reiterated, dependency research is important because a firm's strategic responses to its resource dependencies are factors shaping its operational and financial outcomes. Firms that correctly minimize their dependency on external resources have strong governance structures and are less likely to do EM. Jamil et al. (2021) reinforce this perspective, showing that CG mechanisms impact sustainability disclosure in Malaysia, with firms of better governance structures being more open and less likely to creatively earnings.

To conclude, resource dependency theory can be a tool for gaining insight into the importance of FO for EM. To overcome these challenges, firms cannot simply operate as self-sufficient entities but are increasingly compelled to cooperate with others to access needed resources and balance risk and opportunity for growth and innovation. In this context, the key is forming a proper CG structure, diversifying adequately, and developing a holistic communication approach that balances executive responsibility with stakeholder accountability. As pointed out by Orazalin and Baydauletov (2020), internal governance mechanisms, such as board gender diversity, can serve as a moderator between resource dependencies and organizational performance like EM. The role of good governance is to facilitate transparency, accountability, and ethical conduct to gain stakeholders' trust and ensure resilience throughout environmental changes.

Resource dependence theory is vital for comprehending the strategic management of external dependencies, particularly for enterprises with foreign ownership concerning emerging markets. Organizations can formulate proactive strategies based on insights into the contextual interplay among external resources, governance structures, and

organizational behavior to navigate complexities, mitigate risks, and enhance opportunities (e.g., Khan et al., 2019; Obstfeld, 2013; Lichtenberg & Emslie, 1992; DiMaggio, 1983; March, 1991). Future research examining the complex interconnections of resource dependence, governance frameworks, and financial practices will further our comprehension and aid in formulating successful management methods.

2.2.5 Earnings Quality Framework

The earnings quality framework provides a systematic approach to assess the quality of reported earnings, which is vital for investors, analysts, and other stakeholders to make informed decisions. The determining factor in the quality of earnings is whether the earnings results align with the economic performance of the underlying corporation and can be used to forecast future performance. A seminal work in this line of argument is that by Dechow and Dichev (2002), which pointed to the different ways firms can engage in earnings management, namely accruals-based earnings management (AEM) and real earnings management (REM) (He, Li, & Shen, 2022).

AEM means taking advantage of accounting standards' leeway to inflate reported earnings. EM of this nature relies on discretionary accounting choices to modify financial reporting on an existing cash flow without affecting the actual cash flow. Examples are various timing techniques when revenues and expenses are recognized to smooth earnings, costs that are sliced off to future periods, or accelerated revenue recognized to hit or surpass earnings targets. A corporation may defer the recognition of some costs to the subsequent period to enhance its present profitability. This method, although often permissible, may fail to effectively reflect the firm's economic performance, resulting in stakeholder misunderstandings (Shah, Rashid, & Malik, 2024).

Conversely, Real Earnings Management (REM) modifies company actions to get the intended financial result. This earnings manipulation is overt and directly impacts the firm's operational activity. These strategies include the overproduction of items to lower the cost of goods sold (COGS) via economies of scale, the reduction of essential research and development (R&D) expenditures to improve short-term profits, or substantial discounting of sales to accelerate revenue recognition. The probable risks and repercussions of REM actions, which appear primarily as production and financing decisions and are more micro in nature, can result in significant alterations in operational

efficiency and profitability, particularly if sustained over the long term, and may not align with an optimal business model (Colucci, 2021).

Nissim (2021) identifies many dynamics influencing EQ, with primary drivers being the firm's governance framework, the regulatory landscape, the caliber of internal controls, and management incentives. For instance, robust corporate governance systems, such as an independent board and efficient audit committees, may enhance profits quality by strengthening supervision and reducing opportunities for earnings manipulation. Firmansyah and Saksessia (2020) assert that robust corporate governance enhances profits quality and diminishes the likelihood of earnings manipulation.

The implications of EQ are profound. Inaccurate (or low quality) earnings reduce investors' ability to understand a company's financial situation, undermining the efficiency of markets and hindering investor decision-making. On the other hand, bad EQ can deceive investors, disrupt capital allocation, and inflate the cost of capital. That is an additional risk premium investors need to be compensated for to account for the uncertainty and opportunity for earnings to be manipulated. As Nissim (2021) points out, one of the key drivers of firm value is the quality of its earnings, which helps to enhance transparency and investor confidence -- which, in turn, can lead to a better valuation of the firm's stock. In another study, Dang, Nguyen, and Tran (2020) substantiate this claim, emphasizing that EQ significantly affects the firm value, consequently proving that EQ plays an important role in the eyes of the investor and market valuation.

Earnings quality is a key driver in markets. Accurate financial reporting ensures better investment decisions and contributes to the more efficient use of resources in the economy. Our financial system functions better when investors can trust reported earnings because it fosters investment in companies with strong fundamentals, encouraging firm growth and contributing to overall market stability.

High EQ leads to lower information asymmetry between managers and investors. This transparency lowers the risk the investors perceive, thus lowering the firm's cost of equity. Further, high-earnings quality companies have better access to capital markets and can raise funds at lower costs. This is especially significant in turbulent markets where investor trust is essential. Research by Saleh, Afifa, and Alsufy (2020) found evidence that firms with higher-quality earnings had better performance, reinforcing the notion that

firms that issue quality earnings reports will see an improvement in performance and value.

Overall, the framework of EQ is a complete tool since it considers the difference between accruals-based and real earning management and assesses the reported earnings. An understanding of EQ determinants and effects helps stakeholders assess a firm's actual performance rate and make better-informed decisions. The critical role of quality in earnings for driving value, market efficiency, and sound value has been examined and discussed by Dechow and Dichev (2002). Nissim (2021) has also investigated this issue. The empirical works by Ahmed (2020) and Chowdhury and Eliwa (2021) also concretized the gravitas that explain the positive effect of accounting information and audit quality on EQ and emphasize the framework's practicality in contemporary financial analysis.

2.2.6 Earnings Manipulation Detection

Developed by Professor Messod Beneish in 1999, the Beneish M-Score model is a statistical tool to identify potential earnings manipulation using different financial ratios. This is a powerful tool to detect firms potentially practicing EM, as it analyzes particular financial metrics that indicate practices inconsistent with earnings reported. Below, you will find more information about M-Score, how it works, and general tips to help you become a more informed investor. M-Score: How It Works The primary strength of the M-Score model is its potential to identify companies with a strong tendency to manipulate earnings reports. This can be useful as an early warning signal for investors, auditors, and regulators.

The Beneish M-Score model consists of a selection of financial variables each representing a different dimension of a firm's financial health and reporting practices. These variables include:

Days Sales in Receivables Index (DSRI): This ratio compares the ratio of days' sales in receivables to the previous year. An unusual increase in DSRI may signal that the firm is delaying these receivables, which will allow the firm to recognize revenue earlier than it should.

Gross Margin Index (GMI): This index measures the current year's gross margin compared to the last year's gross margin. A falling gross margin may induce firms to fix earnings to disguise the fact that their profitability is deteriorating.

Asset Quality Index (AQI): calculates the percentage of non-current assets (excluding property, plant, equipment) to total assets. An increase in AQI may indicate that a firm is capitalizing expenses that should be expensed, thus inflating earnings.

Sales Growth Index (SGI): This index quantitatively determines sales growth compared to the prior year. Rapid sales growth may sometimes spur management to stretch earnings to meet or exceed market expectations.

The Depreciation Index (DEPI) compares the depreciation rate with the previous year. A decline in the DEPI indicates that the firm has lengthened the valuable lives of PP&E to lower depreciation expense and overstate earnings.

Sales, General, and Administrative Expenses Index (SGAI): SGA expenses compared to the previous year. A higher ratio may reflect either inefficiency or the assignment of current-period expenses to future periods to manage earnings.

Total Accruals to Total Assets (TATA): How much are the accruals level compared to total assets? Aggressive earnings management practices tend to be reflected in higher accruals relative to assets.

Leverage index (LVGI) measures the year-on-year ratio of total debt and total assets. A higher leverage ratio could also show that a company has taken on more debt, possibly to fund operations or investment activity. This puts pressure on healthcare management to manage earnings to meet debt covenants.

The Beneish M-Score model analyzes these variables and produces an overall score, where a higher M-Score means a higher probability of earnings manipulation. A common cutoff point at which suspicion is raised is with a score of greater than -2.22; companies above this threshold are thought to likely be earnings manipulating.

2.2.7 Empirical Validation of the Beneish M-Score Model

The robustness and applicability of the Beneish M-Score model have been validated through various empirical studies, demonstrating its versatility and effectiveness across different sectors and markets. For instance, Kukreja et al. (2020) highlighted the importance of the M-Score and Altman Z-Score models to corporate fraud detection. Their research emphasized the importance of these models in maintaining financial integrity by identifying companies with the possibility of financial irregularities before they develop into larger-scale scandals or bankruptcies, thus protecting investor interests and enhancing market confidence (Boni, Kamaluddin, & Kusumaningtias, 2023).

Hołda (2020) similarly used the Beneish M-Score model for non-financial enterprises on the Warsaw stock exchange, demonstrating its applicability to various market contexts. The model's strong applicability, despite significant variations in regulatory environments and economic development globally, validates its potential as a reliable tool for enhancing the credibility of financial reporting, rendering it invaluable to auditors and regulators worldwide (Hołda, 2020).

Moreover, including external variables such as CG factors, EQ measurements, and FO features into the Beneish M-Score model may improve its predictive effectiveness. Board independence, audit committee efficacy, and CEO remuneration structures substantially influence organizations' financial reporting practices. This approach progressively enhances the capacity to identify instances of earnings manipulation (Durana et al., 2022).

Factors like earnings persistence and volatility indicators of EQ provide additional information on the accrual's quality and reliability of reported performance. High-quality earnings are likely sustainable and more challenging to manipulate. Adding these indicators into the M-Score model can facilitate better discrimination among firms that genuinely enhance their performance and firms that need to rely on earnings manipulation solutions (Nissim, 2021).

Another source of complexity in financial reporting is FO. Companies with dominant foreign investors may face disparate reporting systems and investor needs on different continents. By understanding how these factors and financial ratios interact, we

can increase the M-Score model efficiency in detecting manipulation, particularly in multinational corporations (Fenyves et al., 2023).

The Beneish M-Score model is powerful for detecting earnings manipulation by examining specific financial ratios. The latter has found empirical support in many organizational and design settings, further attesting to its strength and real-world applicability as an enabler of financial integrity. The model's efficacy can be strengthened by combining CG variables, EQ indicators, and FO aspects, resulting in a comprehensive model for detecting earnings manipulation (Narsa et al., 2023). Such measures help identify potentially fraudulent behaviors and provide insight into the governance and ownership structures that drive such practices. Thus, the Beneish M-Score model is still an essential and relevant tool in financial analysis and fraud detection, allowing for a more transparent and reliable financial reporting discipline (Ratmono et al., 2020).

Unlike previous studies, the analysis focuses on how different CG characteristics, EQ measures and FO features can be included in the Beneish M-Score model to increase its predictive power. Similar to Durana et al. (2022) investigated the relationship between CG characteristics, such as board independence and audit committee effectiveness, and the quality of financial reporting; however, the research evaluates the implications of these characteristics through the lens of the Beneish M-Score model and aims to determine if better CG characteristics can improve the accuracy of the model in identifying earnings manipulation. Moreover, similar to Nissim (2021), who emphasized the significance of these indicators of EQ, like persistence and volatility, in determining the reliability of financial performance, the work also embraces these indicators to distinguish between authentic and manipulated performance enhancements. Moreover, the research by Fenyves et al. (2023) discusses the inherent complexities of their model introduced by significant FO and how multinational corporations' differing reporting standards and investor expectations affect the model's effectiveness. Such an all-encompassing approach helps detect potentially fraudulent behaviors while giving much more understanding of the governance and ownership structures driving such behavior.

Hypothesis 1: Acknowledging that the model constructed will be highly active in detecting EM in the manufacturing industry with the potential to also apply to other sectors (Nissim, 2021). The findings of this study are consistent with the proponents of

the extended hypothesis, which infers that when CG, EQ and FO variables are mixed with traditional financial indicators in the detection of EM in manufacturing companies. Although it will primarily be tested within the financial environment, the robust framework that has been developed is expected to provide insights and help identify EM practices in other industries.

2.3 Variables' Definitions and Discussions

A precise clearing and identification of the variables that would be brought into the theoretical framework is a concern in improving the conception of earning management detection. This section will give precise definitions and explanations of each variable, including traditional financial indicators and the supplementary dimensions of CG, EQ and FO. To do so, we discuss these variables individually below and elaborate further on their importance, their measurement, and their hypotheses on their likely impact on earnings management. This theoretical framework will underlie the empirical analysis and interpretation of findings, assuring that the contribution of each variable in identifying earnings management is presented and substantiated (Siekelova et al., 2020; Larcker & Tayan, 2020).

2.3.1 Earnings Management (EM)

Earnings management is an important phenomenon in financial reporting that has attracted much attention due to its ability to conceal a firm's real financial performance. It is a complex phenomenon characterized by multiple dimensions in terms of regulatory, market, and managerial changes, which underpin it (Man, 2019). In order to understand the concept of EM, we need to discuss its definition, evolution, techniques, measurement, and detection models.

EM involves intentional interference with financial reporting (Boachie & Mensah, 2022). EM refers to a process in which actions are taken within the bounds of accounting standards to achieve desired results. The motives behind EM can differ to an extent and are, on the whole, told to portray a bright portrayal of the financial status of a company to its stakeholders, such as investors, creditors, and regulators (Wasan & Mulchandani, 2020). The standard manipulation (but not limited to) used are income smoothing, aggressive revenue recognition, manipulation of accruals, etc. In computing, income smoothing is the process of intentionally matching income and expenses to portray it as

if no volatility in business happens, influencing the perception of the investors and stakeholders about the true volatility nature of a company operation. This aggressive revenue recognition means they recognized revenue before they earned it or inflated sales figures to meet targets or expectations, making the company look more favorable regarding financial health. In contrast, accrual manipulation changes the adjustment of non-cash items on the income statement, like accounts receivable or accounts payable (Elzahaby, 2021).

Early literature was mainly oriented toward the incentives that led managers to prevaricate financial records by manipulating stock prices or meeting financial goals (Healy & Wahlen, 1999). The concept of EM has evolved and includes a variety of techniques and incentives, from accrual-based manipulation to actual activities management (Hashed & Almaqtari, 2021). Management manipulates actual activities to adjust operational activities, particularly production or investment choices that give desired financial results, to achieve short-term performance targets, or to smooth company expectations for the investors (Kliestik et al., 2021). Over the last twenty years, the market has developed, and consequently, the range of what can be referred to as EM has grown due to changes in the financial market, regulatory environment, and managerial incentives, making it a more elastic term about tailoring lines of business and achieving more robust managerial performance (Hakim, 2022).

The shape and form of EM are also influenced by financial market and regulatory changes. Originally only designed for manipulating accruals, it has recently adopted more complex methods, including manipulating actual activities (Shahzad et al., 2023). This evolution is also a reminder of how much flexibility managers have within the constraints of the regulation and the capital markets. Moreover, over the last few decades, significant advancements in technology and data analytics have equipped managers with sophisticated tools and techniques aimed at manipulating financial data, further complicating the process of EM detection and prevention (Dang et al., 2020; Khuong et al., 2022)."

Managers employ EM techniques to dress up the financial results. This can be done via income smoothing, where the firms create a temporally based income that makes the average business appear more stable. Aggressive revenue recognition recognizing the sales or revenue higher than the company is selling, per the norm and expectations. An

accrual manipulation is an adjustment of non-cash income statement data to overstate the earnings (for example, accounts receivable or accounts payable). Other tactics include cookie jar reserves when internal managers overestimate or underestimate spending in one reporting period to balance gains or losses in another and channel stuffing, sending orders of excess stock to distributors or retailers to inflate sales numbers. These strategies are not only misleading and hard to identify, but they also need advanced and analytical methods to recognize (Baskaran et al., 2020).

Earnings management is an important phenomenon in financial reporting and has attracted much attention due to its ability to conceal the actual financial performance of a firm. It is a complex phenomenon that is characterized by multiple dimensions in terms of regulatory, market, and managerial changes, which underpins the phenomenon (Man, 2019). In order to understand the concept of EM, we need to discuss its definition, evolution, techniques, measurement, and the models of its detection.

Earnings management involves intentional interference with financial reporting (Boachie & Mensah, 2022). EM refers to a process in which actions are taken within the bounds of accounting standards to achieve desired results. The motives behind EM can differ to an extent and are, on the whole, told to portray a bright portrayal of the financial status of a company to its stakeholders, such as investors, creditors, and regulators (Wasan & Mulchandani, 2020). The standard manipulation (but not limited to) used are income smoothing, aggressive revenue recognition, manipulation of accruals, etc. In computing, income smoothing is the process of intentionally matching income and expenses to portray it as if no volatility in business happens, influencing the perception of the investors and stakeholders about the true volatility nature of a company operation. This aggressive revenue recognition means they recognized revenue before they earned it or inflated sales figures to meet targets or expectations, making the company look more favorable regarding financial health. In contrast, accrual manipulation changes the adjustment of non-cash items on the income statement, like accounts receivable or accounts payable (Elzahaby, 2021).

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The forms and mechanisms of EM evolve with changes in financial markets and regulations. Initially focused on manipulating accruals, it has evolved to include more sophisticated strategies involving actual activity manipulation (Shahzad et al., 2023). This evolution serves as a reminder of the degree of flexibility managers have within the bilateral constraints of regulation and capital markets. Additionally, the evolution of technology and data analytics in the past decades has offered managers more advanced tools and methods to engineer financial figures, adding to the challenge of EM detection and prevention (Dang et al., 2020; Khuong et al., 2022).

Managers use EM techniques to fill in the financial results with the desired appearance. This can be done through income smoothing, where firms create a stable income that is temporally based so the average business looks more stable. Aggressive revenue recognition is when revenue or sales higher than the company did sell are recognized in line with the requirement or expectation. An accrual manipulation involves adjusting non-cash data on the income statement to inflate the earnings, such as accounts receivable or accounts payable. Other techniques may include cookie jar reserves, where internal managers overstate or understate expenditures in one reporting period to offset gains or losses in another, and channel stuffing, the practice of shipping orders of excess inventory to distributors or retailers to inflate sales figures. These approaches tend to be deceptive and difficult to identify, requiring sophisticated analytical methods to detect them (Baskaran et al., 2020).

2.3.2 Corporate Governance

Corporate governance is the system by which companies are directed and controlled. It covers the interplay and dynamics among stakeholders, such as

shareholders, management, board of directors, employees, customers, suppliers, and society. On the other hand, CG aims to achieve transparency, accountability, fairness, and integrity in an organization's decision-making process to create long-term sustainability and shareholder wealth (Siekelova et al., 2020). This encompasses enabling mechanisms to monitor management actions, properly align stakeholders' interests and risk management, and adhere to legal as well as ethical standards. Good CG is crucial to keeping investor confidence, encouraging capital investment, and fostering sustainable development and growth (Larcker & Tayan, 2020).

The intricate interplay can prompt a better understanding of CG mechanisms in managing profits in the financial statement. However, recent studies have uncovered multiple facets of this relationship, providing complex insights into the complex relationships determining the quality of accounting work performed in the organization (Wasan & Mulchandani, 2020; Hashed & Almaqtari, 2021). As we traverse the latest research, such understanding increases as CG factors are interrelated and likely to influence the likelihood of earnings manipulation and the ability to detect it (Elzahaby, 2021; Boachie & Mensah, 2022).

Board Independence: The role played by independent directors on the board is more than just symbolic; it is the fundamental attribute of effective CG. Armed with such impartiality and a broad spectrum of knowledge, these directors curb managerial discretion, promoting organizational transparency and accountability (Khuong et al., 2022). Research has argued that boards with more independent members are better positioned to question management decisions, review financial reporting practices, and reduce EM incentives (Hashed & Almaqtari, 2021). Furthermore, the independence of directors enhances their expected responsibilities on the fundamental board committees, particularly the audit committee, where their monitoring can play a consolidating root role in providing the validity and reliability of financial statements and internal controls (Wasan & Mulchandani, 2020).

Audit Committee Effectiveness: As guardians of the integrity of financial reporting, the role of audit committees has never been more crucial. They offer independent external audit oversight by scrutinizing the financial statements and internal controls. Audit committees were identified in recent academic studies as crucial actors for detecting and deterring EM behavior, where the audit committee's performance was shown to induce

higher-quality financial reporting (Shahzad et al., 2023). However, audit committee effectiveness is driven by its makeup and other things, including the frequency of meetings, the level of discussions, members' knowledge levels, and the relationship with external auditors (Elzahaby, 2021). Furthermore, audit committees are typically able to collaborate effectively with internal audit functions to identify risk areas and provide assurance that controls are in place to prevent and detect violations of regulatory requirements, which is vital to transparency and accountability (Dang et al., 2020).

Executive Pay and Financial Reporting Integrity: Structures of Executive Compensation: One of the key variables influencing managerial behavior and the integrity of financial reporting is the structure of executive compensation packages. Data from firms with compensation frameworks that align executive motivations to those of shareholders over the long term have substantial deterrent power (Boachie & Mensah, 2022). In contrast, remuneration frameworks that are overly focused on an accounting period for remuneration or that grant sycophantic incentives for meeting earnings targets could, in fact, glorify EM behavior. Researchers have highlighted the need to connect executive management's remuneration to the organization's strategic objectives to encourage a culture of integrity and accountability (Hakim, 2022). We also show that independent directors and higher-quality audit committees rein in executive compensation structures that do not align with shareholders' long-term interests.

It reflects the causative relationship between the elements affecting managerial behavior and financial reporting. Checks on managerial opportunism by independent boards and effective audit committees provide credible assurance that management has not abdicated from their duties, which enhances the credibility and integrity of financial presentment (Boachie & Mensah, 2022; Wasan & Mulchandani, 2020). Under the business performance measures, executive compensation frameworks also assist in aligning managers' interests with long-run shareholder value creation and removing the influence of short-run earnings manipulation (Hakim, 2022; Shahzad et al., 2023). That is, the relative features of these governance mechanisms can only be seen if they are in place and adhered to, which adds a more pragmatic definition to the conceptual governance frameworks, all of which are relevant to the accuracy of financial reports (Man, 2019; Hashed & Almaqtari, 2021). Hence, an integrating view on CG is needed to disentangle all the practices related to board composition, audit committee monitoring,

and executive pay that translate into a culture of transparent disclosure, responsibility, and alignment of interests in firms (Siekelova et al., 2020; Larcker & Tayan, 2020).

2.3.3 Earnings Quality

Earnings quality is the epitome of the accuracy and relevance of reported earnings, which describes an organization's economic performance and financial health in terms of the importance of financial documentation and reporting. Mohmed (2020) states that Corporate social responsibility (CSR) practices could have a significant relationship with EM, so CSR can be a concern in ethics from an accounting perspective. It emphasizes the need to embed ethical pillars into CG frameworks to protect EQ. Additionally, Arshad et al. Moreover, they argue the relevance of financial and economic informational environment and its impact on EQ; companies with greater transparency, less information asymmetry, and a robust informational environment tend to have higher quality earnings Arshad et al. (2021).

Accruals Quality and Earnings Persistence play a critical role in EQ as they directly impact the reliability and sustainability of reported earnings. Accruals quality is defined as the degree to which accruals represent actual economic events and transactions. It is a fundamental measure of how well financial statements reflect an entity's financial performance and financial position. Based on that idea, Zalata et al. (2022) offer new evidence on the link between female CEOs and core EQ. Their study highlights the potential impact of gender diversity at the executive level on financial reporting behavior. In particular, their results indicate that firms with female CEOs are more likely to show an increase in ethical behavior and the tendency for risk-averse attitudes, both of which may play a role in improving EQ. In addition, the agency costs facing managers as an effect of EM practices are investigated by Man (2019) in order to illuminate the interplay between managerial incentives and shareholder interests. Based on the study conducted by Man, it is essential to align managerial incentives with the interests of shareholders, as this would significantly help to curb the tendency towards earnings manipulation and, thus, enhance the credibility and reliability of reported earnings. In exploring these dimensions, researchers provide insights into the determinants of accruals quality and the relationship between accruals quality and corporate performance, ultimately contributing to a better understanding of financial reporting quality and the auditing process.

EQ is a complex variable like EM, which can also have conflict and symbiotic relationships. When EQ is low, it often triggers the temporal behavior of the company since management has to resort to artificial means to boost the reported values of earnings and meet the market expectations. According to Boachie and Mensah (2022), CG quality moderates the association between EM and firm performance, highlighting how good governance practices can preserve quality earnings for a firm. Similarly, Wasan and Mulchandani (2020) point out that CG factors predict EM, indicating that suitable governance safeguards can serve as protective shields against EM.

Moreover, external factors, including CG practices and regulatory oversight, affect the interaction between EQ and earnings manipulation. (2021) investigates the moderating role of firm performance in the quality of CG and EQ relationship, offering insights into the pathways through which governance practices affect financial report quality. The Influence of CG Mechanisms and International Financial Reporting Standards (IFRS) on EM in Saudi Arabia, Hashed and Almaqtari (2021). Moreover, Kliestik et al. (2019) investigated EM practices employed among V4 countries by emphasizing and stressing the electronic earnings smoothing and inflating strategies used in different aspects of regulatory environments.

To sum up, EQ is a cornerstone of financial reporting, underpinning both investor confidence and market efficiency. Understanding the nuances of accruals quality, earnings persistence, and their relationship with EM practices is crucial for stakeholders to make educated decisions and maintain the integrity of financial markets in an ever-complicated business environment.

2.3.4 Foreign Ownership

Foreign ownership refers to the procurement of domestic assets by foreign people, businesses, or governments, including the possession of domestic stocks, real estate, and similar assets. FO is particularly prominent in many settings of CG, since it imparts insights to organizations about strategic decision-making, operational behavior, and financial outcomes. This effect may stem from regulators, cultural views, accounting standards, and the nature of ownership, whether private or public. These components influence FO and affect business conduct and financial disclosures (Han et al., 2022; Arshad et al., 2021).

Legal Framework: The legal regime governing foreign ownership is complex and fragmented. Generally, it involves host countries putting some restrictions and requirements in place to govern foreign investor activity on their domestic soil. These laws typically impose limitations through restrictions on the extent of foreign ownership (FO) permitted in specific sectors or industries, as well as establishing the procedural requirements for the approval of foreign investments and compliance requirements relating to reporting and disclosure. These legal requirements protect national interests, maintain economic stability, and innovate fairness in domestic competition. For example, Raimo et al. (2020) look into the ownership structure of integrated reporting policies to demonstrate how regulatory frameworks can influence the transparency and accountability of financial reporting. We know such transparency is key to improving ownership structures and decision-making processes in CG (Raimo et al., 2020); this transparency, we argue, would be optimal if implemented with straightforward legal requirements.

Like many other areas, FO is influenced by cultural values, which affect managerial attitudes, behaviors, and organizational decision-making processes. Cultural determinants such as norms and values form societal expectations that influence CG and financial reporting and ethics. The cultural aspects may also impact the manipulation of earnings and, subsequently, the manner of transparent reporting. For example, Guo and Zheng (2021) analyze the relationship between FO and corporate social responsibility, claiming that foreign and local managers have different cultural dimensions; such distinctions greatly influence managerial actions and a corporation's financial reporting performance. The results indicate that culture can affect how common it will be for foreign-owned firms to use earnings manipulation practices.

In addition, ownership structure, such as ownership concentration, institutional ownership, and the composition of the shareholder base, can also affect CG practices and financial reporting quality. Garanina and Aray (2021) study the effects of FO, foreign directors, and cross-listing on corporate social responsibility disclosure, illustrating the importance of ownership structures in corporate transparency and social responsibility practices.

Cross-Cultural Views: The domestic and foreign attitudes and behavior of the managers in any organization that affect the functioning of the organization, especially the

organizations with FO. More broadly, cultural norms, values, and societal expectations can shape managerial practices such as CG, financial reporting, and ethics. These cultural influences may shape the level of EM and the variation in reporting transparency. For example, Han et al. Earnings management and cultural dimensions: Evidence from FO characteristics in 10 Asian countries Li et al. They parlay linking cultural dynamics to levels of FO for earnings manipulation practices. Additionally, Arshad et al. (2021) draw attention to the financial and economic informational environment and the role of individual corporations within it, suggesting that the cultural context must be considered when analyzing the economic effects of FO on financial reporting practices.

In line with the importance of cross-cultural approaches in formulating managerial attitudes in organizations shaped by foreign owners, Kim, Gaur, and Mukherjee (2020) study the effect of culture distance and ownership in cross-border acquisition. Their research underscores the impact of cultural differences between acquirer and target firms in post-acquisition integration processes particularly governance and reporting. In a more nuanced line of research looking at home country institutions, Tang and Buckley (2020) examine how these institutions moderate the relationship between host country risk and FO strategy. Their meta-analysis and theoretical framework highlight the relevance of both cultural and institutional factors in shaping how FO impacts corporate behavior and financial reporting practices.

Additionally, Al-Gamrh et al. Panel data on stocks of UAE firms (2020) show that board independence and foreign ownership (with respect to other UAE stocks) improve firms' financial performance. Their research's policy implications are that governance mechanisms, especially in cases of firms with considerable FO, play a crucial role in reducing agency conflicts and generating value for stakeholders. It further highlights the interaction dynamics of cultural orientation, government framework, and organizational performance in the context of FO.

Reporting Standards: The standards can influence the level of transparency in a mature economy and where these are applicable practices set around reporting across various jurisdictions. By contrast, challenges such as differences in accounting standards and practices, disclosure requirements, and regulatory environments may create hurdles to align financial reporting practices to global norms and expectations thoroughly. For example, Guo et al. (2015) explore the relationship between FO and real EM in the

context of Japanese firms. In the study, the authors highlight how the differences in accounting standards and regulatory framework may influence managerial discretion in the financial reporting process. The implications of the findings for cross-national challenges facing multinationals (many of which have different accounting standards, regulations, and practices that impact EM).

Similarly, Almaqtari et al. (2021) found that CG mechanisms play a particular role in impacting the quality of financial reporting for Indian GAAP and Indian Accounting Standards. Their findings highlight the role that reporting standards can play in the quality and reliability of the resulting financial information.

Moreover, international institutional investors prioritize CSR reporting, indicating a steady connection and long-term investments in China (Yu & Zheng, 2020). They emphasize the significance of reporting rules, including CSR disclosures, that promote foreign investment and enhance the openness of financial reporting. The conclusions indicate the significant impact of reporting standards on investor views and market confidence.

On the other hand, Al-Hanabi, Hesarzadeh, and Bagherpour Velashani (2021) review international financial reporting standards and the financial reporting quality in Iraq. This confirms the impact of reporting standards on the quality of financial reporting and highlights the importance of following international best practices to improve the transparency and reliability of financial reporting.

Seventeen of these studies highlight the importance of reporting standards as a driving force for financial reporting practices while promoting transparency and reliability in corporate disclosures. They highlight the importance of convergence and harmonization of reporting standards across jurisdictions in enabling informed decision-making by investors and interested parties, particularly regarding FO and cross-border investments.

Structure of Foreign Ownership: The structure of foreign ownership, including the degree of ownership concentration, the presence of institutional investors, and the composition of the shareholder base can also affect CG practices and financial reporting outcomes. Zalata et al. (2022) examine the relationship between female CEOs and core EQ and provide new evidence for the ethics versus risk-aversion puzzle. They argue that

ownership structures, especially female CEOs, could improve EQ via ethical leadership and risk-averse decision-making. Garanina and Aray (2021) study FO, foreign board members, and cross-listing on CSR disclosure.

The association between FO and EM has become an active area of academic research, delving into the potential channels via which FO arrangements could alter managerial actions and financial disclosure behaviors. Al-Gamrh et al. Similar findings are presented (2020) that study the roles of board independence and FO in determining firms' financial and social performance in the UAE, highlighting the governance mechanisms to alleviate agency conflicts and achieve stakeholder value. Shareholders generally depend on boards of directors to protect their interests and ensure accountability, especially in companies with significant FO. Moreover, Raimo et al. (2020) emphasize the importance of ownership structure in integrated reporting policies, pointing out the significance of ownership transparency and accountability for sustaining the trust and confidence of the investors and other stakeholders.

Foreign ownership is crucial in CG and financial vs. management reporting. FO: Legal, Cultural, Regulatory, and Structural Dimensions – Navigating the complexities and implications of foreign investment requires an understanding of various international guidelines and regulations, as well as the legal, cultural, regulatory, and structural aspects surrounding them. Furthermore, studying how FO and EM are related expands our comprehension of how ownership structures affect managerial discretion and financial reporting results, which is crucial to understanding corporate behavior in an increasingly globalized business environment.

Hypothesis 2: Including CG, EQ and FO variables enhance the accuracy of detecting EM within the industrial sector (Nissim, 2021; Firmansyah & Saksessia, 2020). This hypothesis posits that a comprehensive model incorporating these variables will provide a more nuanced understanding of EM practices than models solely relying on traditional financial metrics.

2.3.5 Traditional financial metrics

These traditional financial measures form a significant toolbox of quantitative indicators, which are critical in examining companies' financial strength, efficiency, and soundness. These metrics form the foundation of finance and are the standardized

measures for assessing various aspects of companies' financial activities. They are especially critical for comparing different time periods, sectors of the economy, and periods of market conditions, which can be important for investors, regulators, and anyone with a stake in the company. When embedded in advanced detecting models, traditional financial ratios are important predictors of EM and can serve as early warning signals of financial reporting irregularities.

The most well-known model used in detecting EM is the Beneish M-Score model, which investigates a set of eight financial ratios in order to assess the probability of earnings manipulation. These indices cover various financial metrics, opening a window into a company's financial results and reporting practices. The eight components of the model include DSRI, GMI, AQI, SGI, DEPI, SGAI, TATA ratio or return on assets and LVGI.

The DSRI, further analyzed by Vagner et al. (2021), is a comparative-receivable sales ratio that looks at the change in accounts receivable per sales over a given period. A decreasing DSRI might trigger suspicions of revenue recognition aggressiveness that would involve actions to inflate reported revenues. Bilan and Jurickova (2021) examined the GMI, which measures changes in gross margin, an important sign of a firm's profitability. Such a declining GMI can signal earnings manipulation, where managers inflate costs or deflate revenues, leading to an investigation into the quality of earnings.

Moreover, the AQI, SGI, and DEPI offer perspectives on the quality of assets, revenue growth proclivity, and depreciation practices, respectively. These metrics have been analyzed by different researchers like Wang and Liu (2022), and Chen et al. (2020), providing additional dimensions for assessing the potential for EM and for identifying potential red flags in the financial reporting process.

Additionally, the Sales, General and Administrative Expenses Index (SGAI) and Leverage Index (LVGI) examine how effective the company is at managing its costs and the extent of its financial leverage, both of which add to the overall picture of whether said company is financially viable. The metrics detect EM and further elucidate abnormal numbers (Li & Chen, 2021; Lin & Li, 2020).

Additionally, the AQI discussed by Durana et al. (2021) mirrors changes in non-current asset composition for warnings of possible asset value manipulation. Changes in

asset quality provide valuable insights into the faithfulness of reported asset valuations and their contribution to earnings. Also investigated by Kliestik et al., the SGI (2021) examines the growth rate of sales, where abnormal growth may reflect EM behavior. It is important to closely analyze financial statements because significant discrepancies compared to expected sales growth rates may represent efforts to manipulate reported revenues.

Additionally, the DEPI (Ozili, 2020) evaluates modifications to depreciation rates and analyzes how depreciation expenses can be manipulated. Changes in DEPI could indicate attempts to manipulate reported earnings upwards or downwards by altering depreciation schedules. Analogous to this, the SGAI, as analyzed by Khatun et al. (2022), tracks changes in SG&A expenses per sale, which could indicate potential manipulation of operating expenses. This article discusses using the SGAI to show potential flags of inaccuracy in reported expenses.

The TATA ratio and LVGI examined by Narsa et al. relating to accrual-based EM and changes in leverage (2023); TATA provides the ratio of the total accruals to total assets, which helps in understanding the magnitude of accrual-based manipulation in financial statements. LVGI reviews changes in leverage for possible debt manipulation to meet expense targets or obscure financial weakness. When used together, these accrual measures provide an important toolkit for identifying and measuring the relative amount of EM, ultimately reinforcing the credibility of earnings figures reported in the financial reporting process.

The study also builds upon the work of Narsa et al. (2023), who investigated the TATA ratio and LVGI as indicators of accrual-based earnings management and changes in leverage, respectively. Although they investigate this hypothesis through traditional financial metrics, we analyze 11 firms listed on the Palestine Stock Exchange and 30 on the Amman Stock Exchange from 2017 to 2023. This research focuses on CG, such as board attributes and audit committees, specifically for these emerging markets. Therefore, by concentrating on recent trends and practices in the industrial sector of Palestine and Jordan, the study addresses scope and contributes empirical insights, ensuring client understanding or knowledge of CG and earnings quality in these underrepresented regions.

Hypothesis 3: Earnings management occurs when a business manipulates its financial reporting to provide a distorted portrayal of its financial status, which may vary amongst industrial companies due to factors more closely associated with financial ratios (Zadeh, Askarany, & Asl, 2022). This hypothesis posits that industrial firms engaging in EM will exhibit distinct financial characteristics compared to those that do not, as evidenced by various financial ratios derived from traditional financial analysis, CG elements, EQ indicators, and FO considerations.

2.4 Monitoring, Criticizing, and Analyzing Previous Works

Although there are many models and approaches in this area, extensive research has also been applied to EM detection. Basic models like the Jones (1991) model, the modified Jones model (Dechow et al., 1995), and the Teoh et al. (1998) model have had a significant impact on evaluating EM practices. The Jones model was one of the first models soiling discretionary accruals as a measure of EM. It set the stage for future work, but the authors highlight some limitations, most notably the failure to consider the role of CG mechanisms or FO in influencing decisions on EM. Its regression analysis methodology concentrated on distinguishing normal from abnormal accruals and did not consider more general effects that might influence accounting conventions.

The modified Jones model improved the Jones model by incorporating industry-specific discretionary accruals. It was a change was made to more accurately measure earnings manipulation that takes into account revenue and receivables changes. However, the model still struggled with the complexities introduced by governance structures and foreign ownership. Thus, there was a demand for a more integrative view that encompasses all these crucial elements in the EM detection process.

The Teoh et al. One of the first models focusing on discretionary accounting changes as a signal of EM, especially in the case of initial public offerings (IPOs), was developed by Teoh-Yang-Wong (1998). This approach gave insights into how companies may have gainfully manipulated their earnings during major corporate events. However, it did not explore the role of governance practices or their impact on reporting choices deeper, which is important for the broader understanding of the EM landscape.

Kasznik (1999) developed a model highlighting the role of earnings restatements in identifying EM. Because it was based on actual cases of earnings restatement, this

model provided important insights into the damage done by earnings manipulation. However, it did not specifically address the role of FO, which can have a pronounced effect on how earnings are managed and reported.

Kothari et al. A recent contribution is the complementary TYPE (2005) model, which emphasizes executive behavior and accrual EM. It leveraged performance matching techniques to control firm performance in its EM detection. This model certainly synthesized the concept of EM with its relationship with executives but did not sufficiently consider other factors, such as CG or EQ, or the unique dynamism that FO introduces. Therefore, this limitation indicated a need for a more holistic view that considers these.

New studies have broadened the perception of EM issues by investigating the effects of CG structures, EQ, and market issues. Board independence and other effective CG mechanisms help ground both real and accrual EM practices from the effects of monopolistic in Jordan (Al-Haddad &Whittington, 2019). The study emphasized the importance of governance structures for financial transparency and proposed that a well-governed firm will not be inclined toward earnings manipulation.

They used the Beneish M-Score model to analyze earnings manipulation by Malaysian public corporations (Boni, Kamaluddin, & Kusumaningtias, 2023). Their study highlighted the need for incorporating more metrics dimensions to improve the detectability of EM. The Beneish M-Score, derived from nine financial ratios, successfully detected manipulation across different contexts and demonstrated its effectiveness as a screening tool for potential EM.

The study by Maniatis (2022) examined financial fraud arising from manipulating earnings in companies listed on the Athens Stock Exchange. It also showed how advanced models, including business intelligence, machine learning algorithms, and other analytical techniques, can enhance the accuracy and reliability of EM detection and noted a need for advanced devices to detect EM.

Khatun, Ghosh, and Kabir (2022) analyzed earnings manipulation from the banking sector of Bangladesh by employing the Beneish M-Score Model. They found evidence that the extent of this strategic manipulation is widespread and argued for closer

monitoring and improved detection models. The intricacies of EM for banks subsequently forbear more delicate detection methods.

In the study, Chowa (2022) investigated the reasons behind earning manipulation among listed companies on the Lusaka Securities Exchange. We used the Beneish M-Score model in this emerging market setting to explore potential financial behaviors that could lead to earnings manipulation. Supplying the coefficient based on the aforementioned financial behaviors, the M-Score model is embedded with the following: This was particularly relevant to the study that also highlighted the important context of the environment in which firms operate, as it can help in determining the propensity to manipulate earnings, especially in economies that have relatively less scrutiny.

For example, Narsa, Afifa, and Wardhaningrum (2023) used the same model by combining the theory of the fraud triangle and the modified M-Score to identify the EM in Indonesian manufacturing companies. They also found that incorporating psychological and situational variables improves the performance of current earnings manipulation Understanding and Detection methods. The fraud triangle framework that identified pressure, opportunity, and rationalization as the three provocateurs of fraudulent behavior also offered a holistic lens to understand the motivations driving EM behavior.

The association of CG mechanisms with EM has been widely researched in past studies. Suitable CG mechanisms reduce real and accrual earnings management (Al-Haddad & Whittington, 2019). The authors highlighted the significance of board independence and audit committee effectiveness as they improve the quality of financial reporting. Indeed, such a finding was also in line with Hashed and Almaqtari's (2021) results in Saudi Arabia, which showed the role of IFRS in improving earnings transparency. The empathy of exploration of whether governance mechanisms relate to EM through high-quality financial reporting and governance structure explanation can suggest that higher financial reporting standards are inversely related to earnings manipulation.

Previous research, notably El Diri, Lambrinoudakis, and Alhadab (2020), has examined the relationship between CG and EM in concentrated marketplaces. Their results align with the notion that effective governance reduces the likelihood of profit

manipulation. Variations in corporate governance within organizations have historically been linked to concentrated ownership arrangements, where a small number of substantial shareholders own significant holdings, resulting in diminished levels of earnings management. The degree of concentrated ownership influences governance structures and the quality of financial statements.

A similar important factor in identifying and preventing EM is earnings quality. Bartov, Gul, and Tsui (2018) find a negative relationship between EQ and EM, whereby higher quality earnings are indicative of less EM, supporting the proposition that the presence of transparent and reliable earnings reports mitigates the incentive for manipulation. Companies reporting high-quality earnings repeatedly are less likely to exercise EM since they focus on long-term relevance over short-term earnings. Hence, it affects the long-term goal of any firm in order to sustain the interest of investors as well as regulatory bodies. Thus, the EQ should be pursued as a strategic objective in firms.

Earnings management practices are further complicated by foreign ownership. Al-Duais et al. (2022) investigated ownership structure and real EM in an emerging market context and revealed that FO can decrease or increase the management of earnings based on the regulatory and cultural context. The training data only goes up to October of 2023. Specifically, affiliate ownership could subject the firm to international reporting practices that are more stringent and less prone to earnings manipulation. However, it might also bring new pressures to achieve an ambitious financial target, potentially increasing the chances of manipulating earnings.

According to Li, Lam, and Tam (2020), higher FO is associated with low EM of firms, as foreign investors are more active monitors of the firm operations. This may indicate that foreign investors, who tend to be more precise in their demands for transparency, exert pressure on firms to report according to higher (more meaningful) standards.

The articles reviewed in this elaboration provide the basis for a more recent synthesis of research involving FO, CG, quality of earnings, and their complex relationships with the concept of EM. While those are promising advancements, the existing literature lacks a seamless integration of these variables into a comprehensive EM detection model. This study wants to fill this gap by adding these variables and

using a broader model like Beneish M-Score to enhance the knowledge of EM behavior in the two contexts of Amman and Palestine.

This research will provide a more refined and accurate detection model by extending previous research and adding other variables.

Recent literature has developed the multifaceted topic of EM. For example, Sitanggang et al. (2020) solidified this by finding that audit quality aids in decreasing real EM and that a stricter audit regime and independent auditors are necessary to have accurate financial reporting. This result is consistent with previous studies emphasizing that comprehensive governance structures, comprising internal and external controls, play a critical role in mitigating the risk of earnings manipulation.

Furthermore, ownership structure, being another factor, has also attracted attention, such as in Al-Duais et al. (2022) where high ownership concentration may result in less EM. This suggests that the active monitoring by substantial investors, particularly those in institutions, checks managerial opportunism. The involvement of institutional investors, who can demand greater transparency and accountability, can also help lower the likelihood of earnings manipulation.

Research increasingly focuses on the impact of regulatory contexts and cultural issues. Hashed and Almaqtari (2021) discovered that International Financial Reporting Standards (IFRS) in Saudi Arabia resulted in a level of beneficiary openness above expectations, accompanied by a minimal degree of earnings management (EM). The study indicates that global convergence of accounting standards is essential to improve the comparability and credibility of financial statements. The regulatory structures designed to enhance openness and accountability are essential in moderating emerging markets and fostering investor trust.

Looking ahead, cross-national differences in cultural elements and firm-level attributes may be examined for their impact on the interplay between regulatory constraints and the behaviors regarding EM. For instance, a study by Svabova et al. (2020) for Slovakia on detecting earnings manipulation, financial fraud, and EM exemplifies country-specific factors that may influence reporting behavior. Likewise, Svabova (2021) stressed the need to triangulate as a method for effectively detecting earnings

manipulation, presenting multidimensional approaches focused on quantitative and qualitative indicators.

For example, new applications of data analytics and machine learning also present promising new ways to improve the detection of EM. Fernandes, Laureano, Abrantes, and Laureano (2021) used data analytics techniques to identify the effect of EM on European funds. Researchers have applied big data and quantitative analysis techniques to identify patterns and anomalies that suggest earnings manipulation, which helps provide potential insights for investors, regulators, and corporate stakeholders.

Further studies on the countenances and effects of EM in other settings would help us better understand financial reporting and governance mechanisms. Combining the findings of these fields will result in more resilient models for identifying and mitigating such actions. This interdisciplinary endeavor is critical to tackling this complex and multifaceted EM issue and promoting integrity and transparency in worldwide financial markets.

The earlier discussed papers shed light on the factors and identification of EM, highlighting the significance of CG, EQ and FO. Future studies, however, could enhance the understanding of EM behavior and move towards detection models that significantly aid regulators and professionals in an ever more complex process of EM by using more variables and angles. Such integration is expected to fill the existing gaps and contribute extensively to the literature by providing a contextual, inclusive approach that considers important factors influencing EM across different settings.

2.5 Refining Detection: Bridging Gaps and Offering New Insights

Moreover, prior research has substantially enriched the literature on profit management by offering many models and frameworks that may be further explored to investigate the topic more comprehensively. The Jones (1991) model, the updated Jones model (Dechow et al., 1995), and the Teoh et al. model. This research employs the model of Jones et al. (1998) and utilizes established approaches to detect earnings manipulation. The integrated, flexible component of the framework combines a crucial aspect, discretionary accruals or industry-specific adjustments, which serves as the foundation for identifying irregular financial reporting practices. Furthermore, the research conducted by Al-Haddad and Whittington (2019) on corporate governance and the study

by Boni, Kamaluddin, and Kusumaningtias (2023) regarding the Beneish M-Score model underscored the necessity for meticulously organized frameworks and comprehensive parameters to ensure precise detection.

Moreover, research conducted by Maniatis (2022) and Khatun, Ghosh, and Kabir (2022) employed sophisticated models and techniques to identify earnings manipulation across diverse contexts, thereby informing the current study. Maniatis' application of advanced models in examining financial fraud on the Athens Stock Exchange demonstrated the efficacy of higher-level tools in detecting earnings manipulation where simpler methods proved inadequate. Their use of the Beneish M-Score within the context of Bangladesh's emerging banking sector revealed extensive manipulation throughout this intricate financial landscape. These studies provided valuable methodological insights and contextual relevance for the integrated model proposed in this research.

This study is in partial agreement and partially diverges from previous studies regarding CG, earning quality, and foreign ownership, all of which influence EM practices. Its first key highlight is aligned with Al-Haddad and Whittington (2019) and Hashed and Almaqtari (2021), which is that strong governance practices mitigate earnings manipulation. In addition, it is consistent with the evidence presented by Bartov, Gul, and Tsui (2018) on the negative association between EQ and EM. By contrast, this study goes further than previous studies by introducing a more integrative framework by systemically merging these elements within the same model instead of assessing them in isolation. It also goes beyond traditional models, incorporating more recent analytical methods like machine learning (Fernandes et al. (2021), which can significantly improve detection capabilities.

Moreover, unlike studies such as those conducted by El Diri, Lambrinoudakis, and Alhadab (2020), which examined EM in concentrated markets, this research investigates the subject across a wider set of contexts, encompassing emerging markets along the lines of both Amman and Palestine. This separation facilitates a more thorough analysis of the influence exerted by varying regulatory and cultural contexts on EM behavior.

This study is mainly motivated by a knowledge gap due to existing model limitations and the ever-increasing complexity of financial reporting environments. Although foundational models had offered a considerable amount of information, they

were typically not holistic enough, precluding elements such as CG, EQ and FO. For example, previous studies with the Jones model or its derivatives were not comprehensive enough to show how foreign ownership and governance mechanisms affect EM. Recent studies have also emphasized the evolving landscape of financial reporting practices and the need for sophisticated fraud detection tools to keep pace with these changes. Such a gap highlights the importance of an integrated model that joins these key components and uses higher-level inference for more substantial detection accuracy and dependency.

Unlike prior research, this study contributes by enhancing the holistic model that integrates CG, EQ, FO, and advanced analytical techniques into one comprehensive, integrated framework to identify EM. Moreover, unlike earlier models mainly concerned with discretionary accruals or particular events such as IPOs, this study provides a more detailed analysis, allowing us to consider several determinants and their interactions. This also integrates insights from contemporary studies regarding audit quality, ownership structure, and regulatory environments and harnesses the developments in data analytics and machine learning to refine detection capabilities.

This model is an improved tool for detecting earnings management, including CG, EQ, FO, and modern analytical methods. As Fernandes et al. suggested, machine learning and advanced data analytics techniques were used in the study (2021), which adopt novel paradigms and deliver superior performance compared to state-of-the-art approaches. They can work on aggregate data and recognize patterns that might not be apparent through traditional models, representing a significant step forward.

The main contribution of this research to specific literature is a complete and powerful EM detection model that is free of the existing model's inconvenience. Therefore, by combining CG, EQ, FO, and more sophisticated analysis techniques, this model provides a more accurate and reliable approach for detecting earnings manipulation. In addition, it offers more profound insights into the mechanics and determinants of EM, which may contribute towards enhanced regulatory and managerial practices. Additionally, by examining contexts with varying regulatory and cultural backgrounds, like Amman and Palestine, the study adds to the literature on EM, making it more generalizable and applicable across different geographies.

This study pertains to the fraud triangle model, first used by Narsa, Afifa, and Wardhaningrum (2023), in relation to earnings management in Indonesian manufacturing firms. This approach provides a more comprehensive foundation of information than previous studies focused only on psychological or environmental factors, integrating both within contextualized situations to elucidate the motivations behind earnings manipulation. The authors use an innovative interdisciplinary methodology, integrating principles from accounting, economics, and behavioral psychology to illuminate the investigation of, and pursuit of, outcomes related to EM.

In conclusion, this study builds on previous findings but combines them in a more integrated and holistic way to detect EM whilst also addressing the limitations of those studies. This paper confirms the previous evidence and contributes to the literature by proposing a unique holistic model encompassing all key drivers and advanced modeling approaches to significantly enhance current EM findings. Through the utilization of best practices for detection methods of EM in the literature, combined with a broader range of sample size as well as consideration of a more significant number of corporate changes, this research provides progressive insight into a much more accurate detection model for the existence of EM. Therefore, this model improves the detection capabilities and enhances the understanding of the mechanisms and factors influencing EM, which can foster regulation practice and management practice.

2.6 Summary

To conclude, even if important steps have been taken in EM detection methods, serious deficiencies remain, which need further exploration. Although the earlier models have provided a foundation for understanding earnings manipulation, many determinants, such as CG, EQ and FO, are omitted. While past studies have proposed similar elements to interact and influence the complexity of financial reporting practices, these factors have not yet been adequately integrated into the construction of detection models. In addition, given the increasingly complex nature of EM, it is crucial to refine detection models by incorporating more advanced methodologies and contextual factors.

The present study aims to fill these research gaps by presenting a more comprehensive model that includes CG mechanisms, EQ indicators, and FO in the EM detection framework. Incorporating these variables will allow the study to provide a

more thorough and robust understanding of EM behavior. Focusing on specific regions, like Amman and Palestine, offers additional context, showing how regional traits and unique market conditions can shape EM behaviors.

The next chapter, Methodology, will quantitatively show how this study is conducted in a few scientific ways. The following will describe the methodology of the study to explore earnings management and test the suggested comprehensive model. This chapter will elaborate on the research methodology, including data collection methods and techniques. It will explain how the hypotheses are being tested and how the research objectives will be achieved, providing a roadmap for the assessment of the proposed model's efficacy and significance.

Chapter Three: Methodology

3.1 Introduction

In this chapter, a systematic approach is described that was used in this study to construct an extended model for detecting earnings management. This objective is pursued through a panel data analysis using a range of quantitative methodologies, econometric equations, and statistical tools. Using the Beneish M-Score model as the basis of the study, the study seeks to add variables such as CG indicators, EQ metrics, FO, and traditional financial ratios.

The methodology is carefully developed to guarantee the accuracy, feasibility, and credibility of the data processed and the validity of the analysis. It includes detailed processes for sampling and data collection, measurement of variables, and development and use of discriminant and logistic regression models. Including these tools is another way that the authors ensured the data was rigorously analyzed for relationships between variables and for determining the appropriateness of their models. This chapter, therefore, endeavors to lay the groundwork for the analytical and evidence presentation of the study, contributing towards a broader comprehension of EM practices observed within industrial firms listed on the Amman Stock Exchange and Palestine Exchange. The subsequent sections will elaborate on the research design, sampling and data collection methods, variable measurement, model development, and data analysis procedures employed to address the research objectives comprehensively.

The Expanded Beneish M-Score model is important in detecting EM because it establishes more factors that can trigger its occurrence. For example, CG indicators provide information on a firm's monitoring mechanisms that can influence managerial incentives regarding EM. Measuring CG has proven more elusive than we might have hoped, with some measures being board size, board independence, CEO duality, and the existence of an audit committee. The study analyzes the above-mentioned factors to check how CG structures affect EM practices. EQ metrics are also used similarly to determine the reliability and sustainability of reported earnings. In particular, accruals quality, persistence of earnings, and smoothness of earnings are important metrics to determine the quality of financial reports. Low EQ may reveal that practices such as manipulation

were adopted to show a better position than reality. This research aims to determine companies that will likely practice EM via EQ manipulation by including these metrics.

The extended model captures another key variable : foreign ownership. Foreign ownership can impact corporate governance and financial reporting practices. Foreign investors typically require more transparency and better governance practices, which can affect their own behavior in EM. The study investigates whether FO mitigates or enhances earnings management by examining overall FO.

The methodology chapter is crucial since it offers a comprehensive description of the sample and data-gathering techniques supporting the study's conclusions, assuring their reliability and representativeness. The study is to include industrial firms listed on the Amman Stock Exchange and the Palestine Exchange for the designated period of 2017 to 2023. The data from this time was chosen because of the extensive availability of detailed financial records. The data collection process is based on reliable data sources such as annual reports, financial statements, and related databases, which is why we can ensure the credibility of the data used. In addition to financial data, the study used esteemed sources such as stock exchanges, regulatory agencies, and specialist research databases to gather information on CG and foreign ownership. This triangulation strategy enhances data validity, reinforcing the analytical basis.

To reduce bias in the analysis, a binary dependent variable is used, which distinguishes between companies that engage in EM and those that do not. We identify EM using a dummy variable set to 1 for firms that are managing their profits and to 0 for firms that are not. This distinction matters for the later discriminant and logistic regression analyses.

This is followed by Classifying companies based on their EM practice. As a statistical approach, discriminant analysis classifies two or more groups at a time based on multivariate, possibly correlated data obtained through a range of variables, allowing for the correct identification of companies involved in EM. Extending traditional ratios with financial ratios based on the Beneish M-Score approach captures aspects of companies in addition to accounting metrics.

This expanded model includes traditional financial ratios, CG indicators, EQ metrics, and foreign ownership (in addition to further predictive variables). So, there are

still some extra variables that are very important to know about EM practices. CG variables are board size, board independence, duality of CEO, audit committee, and ownership structure. The quality of earnings can be measured through variables such as accruals quality, earnings persistence, and earnings smoothness. Firm-level Characteristics Foreign ownership level: This is based on the level of ownership and nature of ownership by foreigners in the firm.

This chapter describes how to develop and apply discriminant and logistic regression models. We simply use these models to determine the impact of explicit variables on EM practices. In discriminant analysis, an organization can choose to manage profits (1) or (0), while logistic regression checks the likelihood of a company managing profits based on the independent variables.

The data analysis procedures include descriptive statistics, correlation analysis, and advanced statistical methods, including discriminative analysis and logistic regression. These steps help identify the relationships between the variables selected and the model's performance in predicting EM. Descriptive statistics summarize the data, and correlation analysis describes the relationships between independent variables and EM (dependent variables). The extended model is developed and validated using advanced statistical techniques such as discriminant analysis and logistic regression.

This methodology chapter formed a well-structured document to provide the extended model to detect earnings management. In summary, the study attempts to read all published literature to develop a robust detection method for EM with a comprehensive set of variables and a thorough data analysis approach to address its research goals against the backdrop of the unique fragmented nature of measurements of the phenomenon in question. This study follows the structure where each section provides an in-depth account of the research design, sampling, and data collection methods, measurements of variables and constructs, model development, and data analysis procedures to comprehensively explain the methodology employed to attain the study's objectives.

3.2 Research Design

However, the purposeful structure of this study's methodology allows for creating an extended model that specifically identifies EM in industrial firms. This methodology employs a combination of multivariate methods, various quantitative methods,

econometric formulas, and other statistical models to observe and assess the inherent relational structure among the study's variables. Building on the foundations of the Beneish M-Score model, a well-known basis for detecting earnings manipulation, this work adds new variables. It employs improved analytical methods to enhance the model's effectiveness and relevance.

A broadened approach is key because it enables a broader focus on multidimensional drivers of EM behavior. By integrating financial ratios and CG attributes, EQ, and FO measures, the study aims to develop a more sophisticated detection mechanism capable of addressing the sophisticated characteristics of EM strategies. We broaden the methodology to establish a more sensitive and accurate model of potential earnings manipulation, which other models may overlook.

Thus, this research design integrates quantitative techniques for rigorous analysis of financial data. These methods range from descriptive statistics and correlation analysis through regression modeling. To this end, descriptive statistics play a crucial role in summarizing the basic features of the data with insight into the distribution, central tendency, and variability that will be essential for further analysis. Understanding the correlations between variables helps decode the potential determinants of EM and review the model refinement processes.

A critical aspect of this methodology includes econometric equations that enable continuous assessment of both the EM intensity and its determinants. We use discriminant analysis to distinguish between firms that engage in accrual EM and those that do not. We use financial ratios and other factors to identify different patterns and behaviors. Simultaneously, we use logistic regression models to estimate the likelihood of earnings management occurrence and identify significant influences of EM practices.

Therefore, adding a more advanced statistical approach has strengthened the methodological part. We use the variance inflation factor advantage to check for multicollinearity between independent variables (ensuring the stability of the regression estimates and the model). We use residual analysis to verify model assumptions, confirming the suitability of statistical models for the underlying data structure. We tested the extended model against the standard Beneish M-Score model and found that it is more accurate at predicting the future and more effective at finding earnings manipulation.

The clear-cut methodological approach aimed to provide a systematic methodology that would add value to the existing literature and contribute to finance and accounting. Its main aim was to detect EM in industrial firms listed on the Amman Stock Exchange and Palestine86 Exchange. The rest of this chapter will explain the sampling methods, data collection procedures, strategies for measuring variables, processes used for developing models, and working through specific data analysis procedures. Following such a systematic identification strategy corroborates the final results and greatly increases the project's validity and applicability for future use in EM detection research.

3.3 Population and Sample

The study population comprises all industrial firms registered on the Amman Stock Exchange (ASE) and the Palestine Exchange (PEX). The choice of these exchanges is predicated on their coverage of diverse industrial sectors and the accessibility of comprehensive financial data, facilitating the examination of EM. We primarily focus on industrial enterprises because of their substantial economic influence and the vital importance of their financial statements in educating stakeholders and investors about the company's operational performance and future potential.

We use a stratified random sampling method to ensure the study's findings are representative and applicable across various sectors. This approach divides the population into distinct strata based on industrial sectors such as manufacturing, construction, and utilities. We will stratify the study's sample to capture variability across various segments of the industrial economy. We need a stratified approach because EM is dynamic and fundamentally varies across industries.

Consequently, firms in this sample must fulfill particular requirements to guarantee the quality and usefulness of the collected data. Initially, selected organizations must have publicly available financial records for the research period from 2017 to 2023. Secondly, companies must be categorized within the industrial sector according to the industrial classification criteria established by the ASE and PEX. Following these criteria ensures consistent representation of sectors and alignment of our study with its objectives, allowing meaningful comparisons and generalizations across the analyzed industrial firms.

Most of the time, you want enough observations, but getting that number can cost a lot. This is determined by the required statistical power and population size to provide strong and representative results. Statistical power is essential for detecting significant relationships between variables related to EM practices in industrial firms. Practical factors, like resource availability, time limitations, and data accessibility, affect the determination of an appropriate sample size, facilitating a comprehensive but feasible study.

Procedures: The data collection process has covered complete financial data and other relevant information about selected industrial firms. This involves collecting annual reports, financial statements (income statement, balance sheet, cash flow statements, etc.), and other disclosures during the study period. Furthermore, established databases and regulatory filings provide data on CG practices, EQ measures, and FO. Methodical protocols collect data, producing systematic and accurate data for robust analyses and interpretation.

Therefore, it is a crucial aspect of research accountability to ensure the reliability and honesty of the collected data, thereby preserving the integrity of the study. The data validation necessitates verifying information from many sources to identify anomalies or inaccuracies. Comprehensive metrics are essential in data gathering during cleaning, as they enhance data accuracy, completeness, and consistency, fulfilling a vital function in quality assurance. These procedures reduce the potential for bias and strengthen the dataset for analysis, ensuring that any conclusions drawn from the experiment have a solid foundation and are reliable.

The population comprises all industrial companies listed at ASE and PEX that meet this study's inclusion criteria. We handle a thorough sampling frame and aim to draw a statistically random sample of discouraged firms based on their industry sector for each stratum. In addition, using a sampling frame creates a clear boundary between the population of interest, industrial firms operating in Jordan and Palestine, and this study's sample. Such a method broadens the generalizability of findings to similarly situated contexts and the generalizability of inferences from the analysis.

Engaging in ethical considerations throughout the research process is important to respect the rights and confidentiality of participants and stakeholders. 2. The study

follows ethical principles and research protocols, including relevant parties' permission to access financial and corporate governance data. We treat all sensitive information in strict confidence and require all reasonable measures to protect the anonymity and privacy of participating firms. Processes are in place to ensure transparent and ethical research with integrity at each stage, foster trust and adherence to ethical standards, and protect the ethical conduct of the research.

Overall, we construct the population and sample selection approaches to provide sound findings on EM among industrial firms operating within the Amman Stock Exchange and Palestine Exchange. This research extends previous studies by addressing limitations in the sampling method, inclusion criteria, and data collection and validation techniques, offering additional insights into the environmental factors and consequences of EM within the industrial sector.

3.4 Data Collection Methods

We selected these data collection methods in this study to conduct a systematic analysis, compiling extensive and dependable evidence on EM practices in industrial companies listed on the Amman Stock Exchange (ASE) and Palestine Exchange (PEX). Our methodology utilizes various sources and approaches to capture both quantitative financial data and qualitative information that has a bearing on CG, EQ, and FO.

Industrial firms issue annual reports such as income statements, balance sheets, cash flow statements, and other disclosures on ASE and PEX, which serve as secondary data sources. The available documents comprise various types of annual reports from companies, providing insight into their financial position, operational activities, and strategic decisions during the study period (2017-2023). Using secondary financial data allows the analysis to rely on direct and verified data for the variables related to EM.

Secondary sources compile data on CG practices, EQ metrics, and FO characteristics. These include regulatory filings, corporate governance reports, industry publications, and specialized databases that collate data on governance structures, ownership dynamics, and financial indicators. Secondary data also helps to provide additional context and substantiates EM practices with supporting information.

Their actions are systematic, involving the extraction of information from selected sources. This involves pooling financial markers, governance statistics, and relevant other variables as outlined in the study's conceptual framework. By fulfilling the specified conditions of data extraction, data extraction guidelines provide a systematic method for verifying the collected data to maintain quality, thereby preventing biases and errors.

We create a centralized database to gather and securely store compiled data, enabling effective management and analysis. It organizes the information into well-defined datasets that align with the study's research goals and analytical theories. Implementing data validation checks, version control measures, and documentation protocols are common practices for maintaining data integrity and traceability in the research process.

Data feasibility, accuracy, and credibility are key aspects that ensure the validity and reliability of study findings. The study provides credible financial and CG information based on data from reputable sources. These references include yearly reports, monetary statements, and databases recognized for their extensive protection and reliability in the fields of finance and accounting.

In addition, strict data validation protocols are a key element of research methodology. Common methods for validating collected data include data validation, which involves meticulously reviewing and comparing information from various sources to guarantee accuracy and consistency. It enables the identification and prompt resolution of discrepancies or anomalies in the data, ultimately enhancing the reliability of the dataset.

In addition, the study employs systematic measures to validate the data's sources and ensure its completeness, thereby enhancing its credibility. This involves verifying financial statements against audited financial reports and cross-validating CG metrics with filing disclosures with regulators. Following a strict validation protocol for both the test and control data mitigates the significance of data errors or misinterpretations, further enhancing the trustworthiness of the study results.

Moreover, the researcher takes measures to minimize prospective biases that could lead to data integrity. Using several data sources, implementing standardized data collection protocols, and maintaining data handling homogeneity (among other practices)

all help mitigate biases while improving the dataset's robustness. This allows the study to achieve the highest standard of research integrity and ensure the credibility of its findings in order to detect EM practices systematically and transparently, with data collection and validation.

This research intends to systematically gather quantitative data to analyze profit management strategies across industrial enterprises listed on the Amman Stock Exchange and Palestine Exchange. The study will enhance this quantitative method with a qualitative examination, entailing a comprehensive review of existing literature and theoretical research using secondary data sources. It will use a systematic data extraction methodology, including qualitative insights into EM habits and their effects on financial reporting integrity and company governance standards.

3.5 Measurement of Variables

Identifying variables is a crucial stage in research technique, establishing the foundation for systematic data collecting and analysis. This research seeks to rigorously evaluate many factors that may facilitate the creation of a model for EM. Therefore, it is crucial not only to ensure the reliability and validity of our results but also to enhance the accuracy and generalizability of the extended model. So, in our comparative model, we gave each of the above key factors its level of importance and what it meant for our study. This allowed us to create a simulation that shows how difficult it is to manage earnings when these factors are involved and the needs of industrial companies listed on the Amman Stock Exchange and the Palestine Exchange.

Dependent Variable

Earnings Management: This dummy variable codes 1 for firms that engage in EM and 0 for firms that do not.

The core of this study is the detection of EM, expressed in a binary dummy variable. If the score is 1, a company uses it to manage its earnings, and if it is 0, the company does not manage its earnings (Yost, 2022).

Identifying EM requires thoroughly examining financial accounts for trends and anomalies indicative of such behavior. This encompasses qualitative assessments of company governance processes, ownership structures, and other non-financial factors that

may influence management behavior alongside typical financial performance metrics (Dechow et al., 2010; Watts & Zimmerman, 1986). This enhances the model by including these many aspects.

The next step is to statistically discriminate between companies based on their EM using discriminant analysis once the dependent variable has been set in binary format. Johnson & Wichern (2002) developed a statistical technique to differentiate two or more groups from a set of classification variables. Here, the technique distinguishes between firms engaged in EM (1) and those not engaged in EM (0).

Establishing the Binary Dependent Variable (Earnings Management):

1. **Identify Indicators of Earnings Management:**

Earnings management, particularly through classification shifting, is a subtle yet impactful method companies use to misrepresent their financial performance without altering their reported earnings. This section outlines the methodology adopted to detect such practices, closely following the approach established by Malikov, Manson, and Coakley (2018). The detection process involves calculating unexpected core earnings (UCE) and applying discriminant analysis to classify companies based on their likelihood of engaging in EM.

Estimation of Expected Core Earnings

The first step involves estimating the expected core earnings for each company. Core earnings are typically defined as the company's earnings from its main business operations, excluding non-recurring or extraordinary items. The estimation model is built using key financial variables that influence core earnings, including:

- Total revenue
- Cost of goods sold
- Operating expenses
- Other recurring financial metrics

The model to predict core earnings can be specified as follows:

$$Expected\ Core\ Earnings = \alpha 0 + \alpha 1\ Revenue + \alpha 2\ COGS + \alpha 3\ Operating\ Expenses + \cdots + \epsilon$$

Where:

- **α0,α1,α2,α3** are the coefficients to be estimated,
- **ϵ** represents the error term.

Calculation of Unexpected Core Earnings (UCE)

UCE are calculated by subtracting the expected core earnings from the actual reported core earnings:

$$UCE = Reported\ Core\ Earnings - Expected\ Core\ Earnings$$

A significantly positive UCE suggests potential classification shifting, where the company might have reclassified operating expenses as non-operating to inflate its core earnings.

2. **Binary Classification of Companies Based on UCE**

   $Yi = 1$ **(Engaging in Earnings Management):** Companies with a significantly positive UCE are flagged as likely engaging in classification shifting

   $Yi = 0$ **(Not Engaging in Earnings Management):** Companies with UCE close to zero or negative are considered not engaging in such practices.

   This classification serves as the dependent variable in the subsequent analysis.

3. **Applying Discriminant Analysis:**

Discriminant analysis is used to distinguish between companies engaged in earnings management (Y = 1) and those that are not (Y = 0) based on a set of independent variables.

a) **Formulate the Discriminant Function**:

$$\boldsymbol{D = b_0 + b_1X_1 + b_2X_2 + \cdots + b_nX_n}$$

D: Discriminant score

$b0$: Intercept

$b_1, b_2 \ldots, b_n$: Coefficients of the independent variables

$X_1, X_2, \ldots, X_n$: Independent variables (financial ratios, governance metrics, etc.)

b) Estimate Coefficients (b):

Using statistical software (SPSS) to estimate the coefficients $b_0, b_1, b_2 \ldots, b_n$ based on historical data and known outcomes of EM.

c) Predict Earnings Management:

Calculate the discriminant score DDD for each company using the estimated coefficients and their respective values of $X_1, X_2, \ldots, X_n$.

Classify companies into those likely to engage in earnings management ($if\ D > 0$) and those less likely ($if\ D \leq 0$).

The discriminant analysis helps to classify companies based on their financial and governance metrics into those likely involved in EM and those less likely, providing insights into corporate behavior and financial reporting practices.

This approach leverages statistical techniques to enhance understanding and prediction of EM behaviors in companies.

Independent Variables

Financial Ratios: The researcher incorporates eight financial ratios derived from the Beneish M-Score model, each carefully selected to capture different dimensions of financial performance and potential earnings manipulation. These ratios provide a multifaceted view of a company's financial health and highlight areas where management might be tempted to manipulate figures to present a more favorable picture (Fenyves et al., 2023).

Days Sales in Receivables Index (DSRI): This ratio measures the time it takes for a company to collect its receivables. An unusually high DSRI may suggest that a company is trying to inflate sales figures by delaying the recognition of receivables (Kovaçeviç, 2019). This indicates potential earnings manipulation aimed at boosting apparent revenue without a corresponding increase in cash flow.

$$DSRI = \frac{\left(\frac{Receivables_t}{sales_t}\right)}{\frac{\text{Receivables}_{t-1}}{sales_{t-1}}}$$

Receivables t and Sales t are the receivables and sales for the current period, and Receivables t-1 and Sales t-1 are for the previous period.

Gross Margin Index (GMI): This ratio indicates changes in gross margin, providing insights into the relationship between sales and cost of goods sold (Lokanan, 2021). Significant deviations can be a red flag for earnings manipulation. A declining gross margin, for instance, could prompt management to manipulate the cost of goods sold to maintain a consistent profit margin.

$$GMI = \frac{\left(\frac{sales_{t-1} - COGS_{t-1}}{sales_{t-1}}\right)}{\frac{sales_t - COGS_t}{sales_t}}$$

Where COGS is the cost of goods sold

Asset Quality Index (AQI): AQI assesses changes in asset quality, particularly focusing on the proportion of non-current assets other than property, plant, and equipment to total assets (Kovaçeviç, 2019). A higher AQI could indicate that a company is capitalizing expenses to inflate profits, which can artificially enhance the appearance of asset growth and profitability.

$$AQI = \frac{\left(1 - \frac{\text{Current Assets}_t + PPE_t}{Total\ Assets_t}\right)}{1 - \frac{\text{Current Assets}_{t-1} + PPE_{t-1}}{Total\ Assets_{t-1}}}$$

Where current assets are current assets, PPE is property, plant, and equipment, and Total Assets are total assets.

Sales Growth Index (SGI): This ratio evaluates the sales growth rate, which can indicate aggressive revenue recognition practices (Wijesinghe et al., 2021). Companies with unusually high sales growth may engage in aggressive accounting to meet market expectations or internal targets.

$$AQI = \frac{sales_t}{sales_{t-1}}$$

Depreciation Index (DEPI): DEPI examines changes in depreciation rates, potentially revealing attempts to manipulate profit by adjusting asset depreciation (Esther,2021).

Changes in depreciation policies or estimates can significantly impact reported earnings, making this a key area to monitor. Sales, General, and Administrative.

$$DEPI = \frac{\left(\frac{Depreciation_{t-1}}{Depreciation_{t-1} + Net\ PPE_{t-1}}\right)}{\left(\frac{Depreciation_{t}}{Depreciation_{t} + Net\ PPE_{t}}\right)}$$

Where Net PPE is net property, plant, and equipment.

Expenses Index (SGAI): SGAI analyzes changes in SGA expenses, providing clues about operational efficiency and potential cost manipulations (Anh & Da Hanh, 2022). Sudden changes in these expenses, not justified by business operations, could indicate EM.

$$SGAI = \frac{\left(\frac{SGA\ Expenses_t}{sales_t}\right)}{\left(\frac{SGA\ Expenses_{t-1}}{sales_{t-1}}\right)}$$

Where SGA Expenses are sales, general, and administrative expenses.

Total Accruals to Total Assets (TATA): This ratio measures the proportion of accruals to total assets, highlighting the extent of EM through accrual accounting (Kovaçeviç, 2019). High accruals relative to total assets can suggest that earnings are being manipulated through the timing of revenue and expense recognition.

$$TATA = \frac{Net\ Income\ \ - Cash\ Flow\ from\ Operations_t}{Total\ Assets_t}$$

Leverage Index (LVGI): LVGI assesses changes in leverage, offering insights into the company's debt management strategies and potential financial stress (Can, 2023). Companies under financial stress might manipulate earnings to maintain debt covenants or enhance their creditworthiness.

$$SGAI = \frac{\left(\frac{Total\ Debt_t}{Total\ Assets_t}\right)}{\left(\frac{Total\ Debt_{t-1}}{Total\ Assets_{t-1}}\right)}$$

Where Total Debt includes both short-term and long-term debt.

Corporate Governance Indicators: Corporate governance ensures transparency and accountability in financial reporting. Effective governance can mitigate EM risk by establishing robust oversight mechanisms (Mangala & Singla, 2023). The following indicators are included to assess their impact on EM:

Board Size: The number of directors on the board can influence the effectiveness of governance and oversight. Larger boards may provide more diverse perspectives and stronger oversight, but they could also face coordination challenges (Cheng et al., 2021).

$$Board\ Size\ =\ Total\ number\ of\ directors\ on\ the\ board$$

Board Independence: The proportion of independent directors reflects the board's ability to provide unbiased oversight. Independent directors are less likely to be influenced by management and can effectively monitor financial reporting (Afzali et al., 2024).

$$Board\ Independence = \frac{Total\ number\ of\ directors}{Number\ of\ independent\ directors} \times 100$$

Audit Committee: The presence and characteristics of the audit committee are critical for financial oversight and integrity. Effective audit committees, composed of independent and financially literate members, can enhance the quality of financial reporting (Alawaqleh & Almasria, 2021).

$$Audit\ Committee\ Independence = \frac{Number\ of\ independent\ audit\ committee\ members}{total\ number\ of\ audit\ committee\ members} \times 100$$

Additionally, the presence of an audit committee can be indicated by a binary variable:

$$Audit\ Committee\ Presence = \begin{cases} 1 & if\ an\ audit\ committee\ exists \\ ;\ if\ no\ audit\ committee\ exists \end{cases}$$

Ownership Structure: The distribution of ownership among shareholders impacts control dynamics and governance practices. Concentrated ownership might lead to more effective monitoring, but it can also result in entrenchment and conflicts of interest (El Ammari, 2021). total shares outstanding

$$Ownership\ Concentration = \frac{Shares\ held\ by\ largest\ shareholders}{total\ shares\ outstanding} \times 100$$

Earnings Quality Metrics: The quality of earnings is a vital factor in assessing the reliability of financial reports (Alves, 2023). High-quality earnings provide a true and fair view of a company's financial performance, whereas low-quality earnings are often the result of aggressive accounting practices. We include the following metrics:

Accruals Quality: Evaluates the quality of earnings based on the proportion and nature of accruals, offering insights into potential earnings manipulation. High-quality accruals are typically sustainable and less subject to manipulation (Nissim, 2021).

$$Accruals\ Quality = \frac{Total\ Accruals}{Average\ Total\ Assets}$$

Total Accruals can be calculated as:

$$Total\ Accruals = Net\ Income - Cash\ Flow\ from\ Operations$$

$$Average\ Total\ Assets\ is\ the\ average\ of\ total\ assets\ at\ the\ beginning\ and\ end\ of\ the\ period.$$

Earnings Persistence: Measures the sustainability of earnings over time, indicating the predictability and reliability of financial performance. Persistent earnings suggest that reported profits reflect ongoing business operations rather than one-time adjustments (Nissim, 2021).

$$Earnings\ Persistence = \alpha + \beta \cdot Earnings_{t-1} + \epsilon$$

Where:

- α is a constant,
- β is the coefficient that indicates the degree of earnings persistence,
- Earnings t−1 is the earnings from the previous period,
- ϵ is the error term.

Earnings Smoothness: Assesses the consistency of earnings, which may reflect managerial efforts to present stable and predictable financial outcomes. While some smoothing can be justified, excessive smoothness may indicate manipulation to avoid reporting volatility (Nissim, 2021).

$$Earnings\ Smoothness = \frac{\sigma(Earnings)}{\sigma(Cash\ Flow\ from\ Operations)}$$

- Where σ(Earnings) is the standard deviation of earnings, and σ (Cash Flow from Operations) is the standard deviation of cash flow from operations over some time.
- Interpretation: A lower ratio suggests smoother earnings, indicating effective management or potential earnings manipulation.

Foreign Ownership: Foreign ownership can significantly influence a company's governance and financial practices. Foreign investors often bring different expectations and governance standards, which can impact managerial behavior (Tokas & Yadav, 2023). The study includes:

Level of Foreign Ownership: The proportion of shares owned by foreign entities affecting governance and financial strategies. High levels of FO can lead to more stringent governance practices and higher expectations for transparency (Huang et al., 2023).

$$Level\ of\ Foreign\ Ownership = \frac{Shares\ Owned\ by\ Foreign\ Entities}{total\ shares\ outstanding} \times 100$$

Nature of Foreign Ownership: The types of foreign investors involved can vary in their influence and objectives, ranging from passive institutional investors to active strategic partners. The nature of these investors can affect their impact on CG and financial reporting (Alregab, 2023; Ramalingegowda et al., 2021).

Passive Institutional Investors: Identify foreign mutual funds, pension funds, index funds, and other institutional investors who generally do not engage actively in company management.

Active Strategic Partners: Identify foreign corporations, private equity firms, hedge funds, and other investors likely to participate actively in strategic decision-making and company management.

$$Nature\ of\ Foreign\ Ownership = \frac{Shares\ Owned\ by\ Passive\ Institutional\ Investors}{total\ shares\ outstanding} \times 100$$

$$Nature\ of\ Foreign\ Ownership = \frac{Shares\ Owned\ by\ Active\ Strategic\ Partners}{total\ shares\ outstanding} \times 100$$

Express the results as a percentage of total shares outstanding to illustrate the proportion of each type of FO.

Data Validation

Data feasibility, accuracy, and credibility matter because they are critical to the validity of a study's findings (Aarons, 2004). The data sources chosen are reputable and well-known sources of accurate and credible financial and CG information. We ensure the integrity of our data through a rigorous validation process.

Source Verification: We will validate the data against multiple reputable sources, such as annual reports, financial statements, and specialized databases, to help correct any discrepancies. However, now that we are using the study within this framework, we can cross-validate information from multiple sources, resulting in a more reliable and comprehensive picture of the used information.

Various statistical tests are used for statistical validation. Consistency checks, outlier detection, and normality tests, among others, ensure data reliability and suitability for analysis. These tests determine whether any patterns, trends, or data points could be considered anomalies or biased, ensuring the soundness and validity of the data used for analysis.

Current research aims to validate the robustness of the extended model's stationarity for measuring EM in companies in industrial sectors by taking precise measurements of these variables and conducting thorough data validation. This collective approach has the potential to not only enhance the model's accuracy but also aid in the in-depth analysis of the multifaceted concept of EM. We strive to provide validated insights that enhance the theoretical framework of financial reporting and CG, meticulously measuring and calibrating our data.

3.6 Model Specification

This paper introduces an advanced model incorporating various independent variables, from traditional financial ratios to newly integrated variables. It seeks to assess how these factors affect EM practices in industrial firms.

Conventional ratios, including liquidity, profitability, and leverage, provide extensive insight into a company's financial condition and performance. These statistics are essential for evaluating a company's financial soundness and operational efficiency. We include these ratios in our model to consider the financial statements and accounting indications, which may also indicate possible EM actions. The extended model incorporates additional variables that capture wider aspects of corporate behavior and governance alongside financial ratios. These comprise CG indicators, such as board composition (board size, independence of directors), CEO duality (whether the CEO is the chair of the board), and features of the audit committee. These variables are crucial as they offer valuable insights into firms' governance structure and oversight mechanisms, which can significantly impact the financial reporting environment.

In addition, the model includes measures of EQ (accrual quality, earnings persistence, and size of earnings shocks). This information reveals the soundness of declarative profits across the reported data, thereby enhancing the intrinsic efficiency of the fiscal performance.

This characteristic can include the extent and nature of FO in companies, among other considerations. Such variables are especially relevant in globally integrated markets, wherein international investors might exert pressure on corporate and financial reporting behavior.

Incorporating this extensive array of explanatory variables in the expanded model aims to provide a thorough framework for analyzing the factors influencing EM behavior. Incorporating explanations enhances the model's prediction performance and fosters a more profound understanding of the issues contributing to the difficulties of corporate financial disclosure. The primary objective is to provide insights from this model to guide stakeholders, regulators, and policymakers in fostering openness, integrity, and accountability within financial markets.

Econometric Equations and Models

The discriminant analysis (quantitative model) is a robust quantitative model in our study that aids in identifying subtle differences between companies based on their income statement behavior. Using this statistical approach, we can identify and separate firms

with evidence of earnings management (coded as 1) from those with no evidence of earnings management (coded as 0).

Our model's independent variables, X_1, X_2..., and X_n, encompass a comprehensive list of pertinent factors. These include traditional financial ratios, CG indicators such as board composition and CEO duality, EQ metrics such as accruals quality and persistence, and FO characteristics. These variables reflect a wide range of corporate practices and financial reporting activities.

The discriminant function D is formulated as:

$$\boldsymbol{D = b_0 + b_1 X_1 + b_2 X_2 + \cdots + b_n X_n}$$

The intercept is represented by b_0, while the coefficients b_1...b_n represent the model's output, which was determined through rigorous statistical analysis. The two coefficients indicate to what extent the independent variables affect a company's tendency to engage in EM. This knowledge allows us to observe how much weight was assigned to the different variables in the discriminant function, how important each variable is in this context, and how well each of them differentiates between companies with more and less active EM activity.

This quantitative method improves our ability to group firms based on their appropriation of financial reporting and provides a methodical basis for explaining the drivers behind EM. Through this study, particularly through discriminant analysis, we hope to provide information that can help share insight with stakeholders, regulators, and researchers regarding the intricacies of corporate financial behavior and governance.

Logistic regression (binary model): Logistic regression is a fundamental component of our analytical methodology, and it is used with discriminant analysis. This model has proven essential in predicting businesses' involvement in EM activities. It allows us to categorize firms as either participants in profit management (1) or adherents to integrity in their accounting processes (0).

We used logistic regression because it has the advantage of modeling the relationship between a binary dependent variable (whether to engage in EM or not) and a set of independent variables. Our independent variable consists of all controllable characteristics (including financial, corporate governance, earnings quality, and foreign

ownership). Logistic regression allows us to analyze these variables and estimate the probability that a given company exhibits either type of EM behavior.

The logistic regression model is formulated as follows:

$$\boldsymbol{P(Y = 1|X) = \frac{1}{1 + e^{-(B_0 + B_1X_1 + B_2X_2 + \cdots + B_nX_n)}}}$$

In this equation, $P(Y = 1 \mid X)$ represents the probability that a company manages profits given the independent variables $X_1, X_2, \ldots,$ Xn values. The coefficients $B_1, B_2 \ldots, and\ B_n$ are estimated from the data and indicate the impact of each independent variable on the likelihood of EM. The logistic regression model employs the logit transformation to linearize the relationship:

$$\boldsymbol{log\left(\frac{P(Y = 1 \mid X)}{1 - P(Y = 1 \mid X)}\right) = B_0 + B_1X_1 + B_2X_2 + \cdots + B_nX_n}$$

This specification gives a straightforward interpretation of how independent variables change the odds of a company exercising EM. Independent variables include a variety of factors such as financial ratios, CG proxy measures, EQ, and FO characteristics. Collectively, these variables represent factors of corporate behavior and financial reporting practices, which are critical for identifying and comprehending patterns of EM conduct.

However, given its specific design for dichotomous dependent variables such as EM practices, we strongly advocate using logistic regression in our study. Consequently, logistic regression helps us quantify how the independent variables each impact the log odds of the probability of managing profits. The confounding materiality makes for a good statistical planning framework. At the same time, it allows us to look into how different aspects of CG, financial performance metrics, and the usefulness of reported profit affect each other on a strategic level.

Discriminant analysis and logistic regression comprise a rich econometric model that expands our analytical and interpretative framework of EM dynamics. The b_1, b_2..., and b_n coefficients of discriminant analysis, along with the B_1, B_2..., and B_n coefficients of logistic regression, can assist in determining the significance of various variables in predicting and identifying EM behavior. Through these models, we can obtain

a more accurate insight into the relationship between CG and financial performance, which are central to our research goals and help us add valuable information to the existing knowledge pool concerning financial reporting and EQ.

We categorize the econometric model based on whether we detect the firm engaging in EM. We use discriminant testing to distinguish companies engaged (1) or not engaged (0) in EM. Logistic regression will estimate the probability of a company managing profits (1) based on chosen independent variables. Models help us understand how each variable impacted the level of EM.

Discrimination of Ratios

Finding the financial ratios that best discriminate between companies engaged in EM and those that are not the next important step after building our models. Not all ratios are equally beneficial in enabling the model to detect potential EM behavior better. As a result, this step is about finding the relevant financial ratios.

In this scenario, we combine statistical analysis, evaluation, and correlation analysis to determine the predictive power of each initial financial ratio introduced in the extended model. Our goal is to identify those ratios that have significant predictive power by looking at the relationship between the ratios and the probability of EM. This selected group of ratios will form the basis for the model, allowing it to detect companies engaging in EM (or not) with a certain specified significance level.

Moreover, it involves comparing and contrasting the effect of ratios in different circumstances and situations. Due to their unique characteristics and grammatically conservative nature, different industries can significantly influence these ratios' effectiveness in identifying earning management behaviors. Therefore, strategically incorporating this halogen into our extended model can enhance its robustness and reliability. This will help us understand how firms finance themselves and how their leaders interact with each other better.

Model Evaluation

It is crucial to consistently evaluate our extended model for its reliability and effectiveness in identifying EM. This section describes the metrics and validation methods used to evaluate our model's capabilities and stability.

Metrics: Model evaluation consists of several key performance metrics, including accuracy, precision, recall, and F1-score. These metrics offer a holistic view of various facets of model performance:

- Accuracy calculates the correctness of prediction overall, which indicates the ratio of correctly predicted instances to all instances.
- Precision measures positive prediction accuracy, the ratio of true positives to the total number of positive predictions made.
- Recall, also known as sensitivity, evaluates the accuracy of positive predictions by comparing the total number of actual positive observations predicted by the model to the total number of positive instances.
- F1-score is the harmonic mean of precision and recall, a single metric that combines both metrics into a single value, useful for comparing the measurement of two models with different thresholds.

Validation: We use cross-validation and home improvements to evaluate the robustness and generalizability of our models. We split the data into k subsets, also known as folds, train the model multiple times on different combinations of these subsets, and evaluate the performance on the remaining subset(s). This helps prevent overfitting and gives a better indication of how the model will perform on data it hasn't seen before.

This cross-validates our extended model on this data, ensuring its effectiveness is not limited to a single dataset. This approach augments the robustness of our conclusions and serves as a testament to the appropriateness of the methodologies employed in dissecting the intricate nature of EM.

In summary, including stringent evaluation metrics and robust validation methods reinforces the integrity and relevance of our enhanced model. Through rigorous validation processes and extensive metrics, we seek to ensure a strong basis for understanding and utilizing our findings within the larger landscape of CG and financial reporting integrity.

3.7 Data Analysis Procedures

Thus, we carry out statistical procedures ranging from bivariate to multivariate approaches, evaluating the complex interrelationships between variables and assessing

the potential of the extended model to detect earnings manipulation among industrial companies. It also utilizes a meticulous analysis-building framework, incorporating advanced quantitative techniques, statistical tests, and econometric models. The methodologies are particularly well-suited to examine various variables, from traditional financial ratios to newer constructs, including CG measures, EQ measures, and FO characteristics.

Additionally, the data analytics processes include a thorough toolkit of analytical methods and procedures designed to reflect the dimensionality of EM conduct. Advanced quantitative techniques employ multivariate regression and discriminant analyses to examine the relationships between multiple independent variables and the dependent variable, EM. This allows us to closely examine how combinations of financial ratios, CG practices, EQ indicators, and FO interactively affect the probability and magnitude of earnings manipulation in industrial firms.

3.7.1 Descriptive Statistics

Descriptive statistics, including measuring central tendencies and variability, are the first step of the analysis and give an overview of the dataset. From the table data, we calculate key variables such as financial ratios, governance metrics, EQ, and FO measures, including mean, median, mode, standard deviation, range, and interquartile range. Such a thorough assessment provides a primary understanding of the data's distributional attributes and traits, helping discover probable outliers and guiding further analytical actions.

Another way for researchers to learn about the distribution of financial ratios, CG, EQ and FO is to look at descriptive statistics of these things (Glinkowska & Walentowicz, 2023) before they get into the details of their analysis. It helps detect possible outliers or anomalies in the data that could impact subsequent stages of analysis and interpretation. Through extensive descriptive analysis, the study lays a solid foundation for more complex statistical tests and models, ensuring the reliability and validity of the results.

3.7.2 Correlation Analysis

We use correlation analysis to identify potential relationships between the independent variables (financial ratios, governance indicators, EQ metrics, foreign

ownership) and the dependent variable (earnings management). We quantify these associations using Pearson's correlation coefficient or Spearman's rank correlation. Strong correlations draw attention to variables that may have a shared effect on how earnings are managed. This affects the choice of predictors for future regression tests and points to problems with multicollinearity.

In addition, correlation analysis provides insight into the relationships between independent variables and EM practices. Once the researchers establish the relationship and quantify the degree of influence between the variables, they can pinpoint the determinants of financial reporting quality across various dimensions such as financial ratio, CG characteristics, EQ, and FO characteristics. Such insights provide a foundation for formulating a conceptual framework that will robustly characterize the multidimensional profile of EM practices that the model seeks to capture.

3.7.3 Multicollinearity Assessment

The Variance Inflation Factor (VIF) assesses the degree of multicollinearity among the independent variables of interest to evaluate the robustness of the regression models. Large values of the VIF indicate that the correlation levels between variables are sufficiently high to distort the regression coefficients and estimate reliability. For example, researchers apply mitigation strategies such as variable selection techniques or data transformation methods (e.g., logarithmic transformation) to address the drawbacks of multicollinearity, thereby enhancing the validity and interpretability of regression outcomes.

Moreover, evaluating multicollinearity allows researchers to detect possible redundancies or overlaps between independent variables considered in the analysis. The study measures the correlation between financial ratios, CG variables, EQ indicators, FO variables, and other factors that ultimately influence the EM policies of the studied companies. By preparing this, you improve the robustness of statistical inferences and the soundness of global conclusions.

3.7.4 Discriminant Analysis

This study utilizes discriminant analysis to classify firms into distinct groups based on their approaches to managing earnings. This statistical methodology typically

determines financial ratios and other variables that best discriminate between firms that manage earnings and those that do not. By separating groups as much as possible, discriminant analysis improves the extended model's ability to predict. This makes it easier to find the key predictors when comparing firms that manipulate and those that do not. In doing so, it enhances the model's ability to discern nuanced variations in financial reporting practices.

It also lets researchers test how well financial ratios, CG measures, EQ proxies, and FO characteristics can tell the difference between companies that manipulate earnings and companies that do not. Measuring the impact of each factor on the categorization of companies based on their financial reporting integrity raises the average degree of predictability and reliability in the extended model if it exists. Using discriminant analysis will assist in making sound managerial decisions and developing a strategic action plan to address the issue of EM in industrial companies.

3.7.5 Logistic Regression Modeling

Since the dependent variable is binary (1 to manage profits, 0 not to manage earnings), logistic regression is an appropriate method for estimating the probability of earning management.

Researchers can also use logistic regression modeling to examine how different types of FO, financial ratios, CG measures, EQ indicators, and EM practices affect the probative risk of EM practices. Logistic regression allows researchers to estimate the log odds of firms engaging in earnings manipulation, helping to identify the most important predictors and their effect on financial reporting quality. The analytical framework, therefore, improves the reliability and interpretability of the model results, facilitating evidence-based decision-making and informing policy changes in corporate governance and financial supervision. Other domains can apply this framework to encode working practices and routines in a composite process.

3.7.6 Model Evaluation

We evaluate the developed model extensively, applying suitable metrics to determine the model's power of prediction and discrimination. We use these metrics, such as accuracy, precision, recall, and F1-score, to assess the model's effectiveness in

categorizing firms into EM practices. We perform these metrics to validate model assumptions and ensure the reliability of findings in specific circumstances or scenarios. This research paper aims to evaluate the extended model, a new and broader approach that considers behavioral and psychological factors. It identifies its strengths and limitations, presenting potential areas for model improvement in future studies with practical and theoretical implications.

In addition, model evaluation is an essential process for examining the reliability and validity of the expanded model to identify the practice of EM. Visualizing the prediction results allows for comparing predicted outcomes and actual observations, which can give insights into the model's ability to classify firms that manipulate their financial statements accurately. Sensitivity analyses and robustness checks ensure that model estimates hold up under different assumptions and provide additional justification for conclusions reached from data analysis routines. This lays the groundwork for more effective preventive strategies related to EM in industrial firms. These strategies will not only boost confidence in the predictive ability of the extended model but also enhance methods for detecting and preventing EM in companies within the industrial firm's sector.

3.7.7 Comparative Analysis

In this paper, we conducted a comparative analysis to evaluate the performance of the extended model against most conventional methods, such as the Beneish M-Score model. The study examines how models accounting for additional variables (governance, earnings quality, foreign ownership, etc.) alter predictive accuracy, sensitivity, specificity, and other metrics compared to a parsimonious model that captures EM. This work contributes to comparative analyses that aim to provide empirical evidence on the enhanced efficacy of the extended model and to advance methods in understanding the integrity of financial reporting in industrial firms.

Another aspect is that by comparing the components of the extended model with existing frameworks to detect EM practices, researchers can reassure themselves regarding its strengths and weaknesses. By assessing the predictive power and discriminatory ability of financial ratios, CG variables, EQ measures, and FO variables, the study offers significant implications for strategic decision-making and regulatory interventions to promote corporate transparency and accountability. This study provides

a comparative analysis to understand better the role of financial reporting integrity and its multidimensional factors in mitigating EM risk.

3.7.8 Residual Analysis

Residual analysis checks regression models' assumptions, such as normality, homoscedasticity, and independence of errors. Studying residuals allows us to assess the goodness of fit of the statistical models and uncover potential departures from underlying assumptions. We use regression diagnostics, including graphical techniques such as residual plots, Q-Q plots, and formal tests to confirm that the regression models meet the assumptions necessary for reliable inferences and result interpretation. This improves the accuracy and validity of the econometric models applied in the analysis.

Reset paragraph: Residual analysis is important for evaluating the appropriateness of regression models in explaining the variability of dependent variables such as EM. The study validates assumptions relating to the model by checking residual plots and diagnostic statistics and highlights areas for potential improvement or refinement in the model. Residual analysis also helps them make evidence-based decisions and formulate policy-making based on the accuracy and reliability of statistical estimates generated from data analysis procedures. It will increase the credibility of research results and, therefore, lead to improvements in techniques for identifying and preventing financial statement falsification in industrial companies.

3.7.9 Sensitivity Analysis

This analysis examines the impact of different assumptions or methodological choices on the results of the model's root cause, allowing for evaluation of the robustness and generalizability of the results. This method improves the validity of conclusions drawn from data analysis methods, improving the overall reliability of findings by looking at how sensitive model estimates are to different possible outcomes.

Additionally, sensitivity analysis allows for a holistic evaluation of the expanded model's performance across various analytical processing environments and data configurations. Researchers can identify influential factors impacting outcomes and refine analytical approaches by evaluating whether results are consistent across different assumptions or methodological choices. Sensitivity analysis underlines data analysis

procedures by giving an opinion about the stability and reliability of statistical estimates; hence, it contributes to informed decision-making in the corporate governance and financial oversight domains (Friedman, 2002). It provides valuable insights into the disclosure of research findings and the quality of support, which can aid in the verification process to identify and mitigate potential EM risks in industrial firms.

These procedures ensure a systematic and rigorous investigation of financial ratios, CG indicators, EQ metrics, and FO characteristics on EM firms listed on the Amman Stock Exchange and Palestine Exchange. By combining advanced quantitative techniques with econometric models, these steps create thorough analyses that include factors that affect the quality of financial reporting and provide researchers with ideas on improving their detection of earnings manipulation.

3.8 Limitations of the Methodology

Maintaining a transparent and balanced perspective on the research findings is crucial to recognize the methodology's limitations. Additionally, this section outlines the study's potential limitations and implications, enabling the audience to fully comprehend the study context and potential constraints on the results.

Data Availability: This study is based on data available for industrial firms listed in the Amman Stock Exchange and Palestine Exchange. The spatial and sectoral scope may thus also limit the applicability of the results to other contexts, such as different industries or other regions. One of the main criteria for selection was the availability of financial and CG data for the selected period (2017-2023). Nevertheless, results based on this context may not easily generalize to other markets characterized by distinct economic, regulatory, and CG systems.

Data Quality: The consistency of financial reports from various companies and regions may impact the reliability of the results. (Redirecting VAR) While the chosen sources are reliable, differences in accounting methods, reporting practices, and financial openness can create variations. Such variability can create discrepancies in the data, potentially leading to significant implications. Wrongful inferences or biases present in the original workings of financial reports and governance disclosures could spread throughout the analysis and influence conclusions drawn from the data.

Model Assumptions: The accuracy of the discriminatory and logistic regression models used in this study depends on the accuracy of their underlying assumptions. There are basic assumptions about these linear regression methods: linearity, independence of error, homoscedasticity, etc. In practice, however, these assumptions are not necessarily true, which can cause problems in model specification and lead to biased estimates. To illustrate, there may not be a truly linear relationship between independent and dependent variables, so these models may not encompass the nuances of EM.

Variable Selection: The Beneish M-Score model was used to include a lot of different variables in this study. These variables include measures of CG, EQ metrics, and FO. However, it may leave out other important factors affecting how earnings are managed. The availability of literature unavoidably constrains the selection process, even though we had little trouble finding studies that fit all but two exclusion criteria. Novel trends, industry-specific practices, and other contextual elements not included in the selected variables might also be pivotal to EM and, thus, limit the completeness and robustness of the model.

However, incorporating trust into a solid model presents certain implementation challenges. Using such a model in different real-life situations could be hard because of differences in CG, financial reporting standards, and regulatory frameworks. The model's performance might not apply to various markets; the behavior of investors differs from one time period to another, too, and regulatory oversight and market counterparties are different in each economy. For example, a governance practice that substantially impacts EM in one country may not have the same effect in another country where culture or regulations differ. Such Accrual Transactions (Ats) may operate in widely different contexts, complicating their use in the model. The same response may not be the optimal choice in different contexts, necessitating modifications in the implementation.

While this study's methodology offers a comprehensive analysis of EM, it is important to acknowledge its limitations. Potential limitations include data availability and quality, model assumptions, variable selection, and practical implementation challenges. Addressing these limitations allows for a more balanced view and interpretation of the results, paving the way for future research and application of the findings. By transparently articulating its limitations, the study aspires to engage in an

ongoing conversation about EM nuanced and constructively, encouraging future development in the domain.

3.9 Conclusion

This chapter provided a step-by-step account of the methodology used in this study, including several vital components necessary for the identification and detection of EM employed by industrial firms registered on both the Amman Stock Exchange and the Palestine Exchange. The introduction presented a concise overview of the research framework, clearly outlining the planned approach to achieving the objectives of direct research. Next, the introduction delved into the population and sample, elucidating the process of selecting representative firms from the designated exchanges. The next section described the data collection process, emphasizing the importance of gathering reliable and pertinent data sources for analysis.

In addition, the variable measurement was very detailed, and the franking variety of independent variables added to the extended model for recognizing EM was emphasized. These include important financial ratios, various CG indicators, EQ ratios, and FO factors.

Additionally, we openly discussed potential methodological constraints, recognizing challenges such as missing data, differing data quality across firms and regions, and the assumptions underpinning the econometric models used. We critically appraised these limitations to provide a clearer interpretation of the study's implications and findings.

The model specification section of this study provided details about the econometric models used, including discriminant analysis and logistic regression. The study established various models to classify EM practices and provide numerical estimates based on the selected .variables

Finally, it ended by introducing the data analysis procedures along with the model evaluation metrics for measuring accuracy, precision, recall, and F1 scores. They stressed validation approaches, such as cross-validation, to determine the reliability and robustness of the models developed.

These practices are important for studying industrial firms' EM practices. This study seeks to deliver a nuanced understanding of the intricacies within the domain of financial reporting and governance practices by applying advanced statistical techniques and rigorous analytical methods using data obtained until October 2023. This methodology provides the basis for creating an effective model for detecting and preventing earnings manipulation, which can lead to improved transparency and accountability in corporate financial reporting.

The methodological implications of these findings can be understood in terms of both academic research and practical applications. Their results provide valuable knowledge to the existing literature on EM detection and useful insights for policymakers, regulators, and corporate stakeholders. This study proposes potential variables and factors influencing EM behaviors, thus providing a foundation for future research to develop more accurate detection systems and promote better corporate governance.

This chapter provides a foundation for future studies and practice in EM detection with its methodologies and findings. Their conclusions serve as a comprehensive guide for future research to build upon, paving the way for more nuanced and sophisticated detection frameworks. This knowledge could drive organizational strategic decision-making efforts to improve the integrity of corporate financial reporting and investor confidence.

Moreover, the methodologies generated from this study provide significant opportunities for addressing burgeoning issues in CG and financial oversight. By applying sophisticated analytical tools and comprehensive data analysis methods, researchers are able to further their knowledge of EM patterns and devise innovative solutions to counter the risks posed by financial misconduct.

This chapter is an important touchpoint for researchers, practitioners, and policymakers who want to better understand the dimensions that enact EM practices and enhance the standards of CG. This paper advances the literature on earning quality and governance practices in industrial plants, as it, like the others, attempts to make external controls over future activities on a power basis visible and can also be included in financial market conditions that demand financial transparency.

Chapter Four: Results and Analysis

4.1 Introduction

This chapter systematically presents the findings of the research, focusing on detecting and analyzing EM among firms listed on the Amman and Palestine Exchanges. Central to this analysis is the enhancement of the Beneish M-Score model, a widely recognized tool for identifying earnings manipulation. This research incorporates additional variables into the traditional model, including governance, FO, and EQ factors, to address its limitations and improve its applicability, particularly in emerging market contexts. These enhancements reflect the study's objective to refine and expand the detection framework, offering a more robust and contextually relevant tool for identifying EM.

Earnings management, particularly classification shifting, has become increasingly significant in assessing the quality of financial reporting. EM encompasses the deliberate manipulation of financial statements to achieve specific reporting outcomes, potentially misleading stakeholders about the underlying economic performance of a firm. Within this broader concept, classification shifting refers to the reallocation of revenues or expenses among different accounts to influence reported earnings without altering the overall financial results. This subtle yet impactful practice can distort perceptions of operational performance, making its detection a critical component of financial analysis.

This chapter aims to provide a detailed breakdown of the methods applied, results obtained, and interpretations derived, highlighting the interplay between the traditional Beneish M-Score variables and newly incorporated metrics. By emphasizing the role of governance, FO, and EQ in the detection of manipulation, this chapter underscores the study's contributions to improving financial transparency and enhancing stakeholder confidence.

The main objective of this chapter is to identify and detect EM practices within these exchanges. The study uses the classification shifting method as the main basis for detecting earnings manipulation to reveal how different factors of CG mechanisms, EQ, and FO affect the likelihood and magnitude of such practices. By focusing on firms listed

in the ASE and PEX, this analysis yields valuable insight into the drivers of EM in these emerging markets.

The chapter examines the relationships between earnings management and various financial and governance factors by using an advanced analytical approach, including a battery of statistical methods and econometric models. Traditional financial ratios, such as total revenue and net income, are considered in conjunction with newer CG indicators related to board characteristics, CEO duality, and audit committee presence. Besides, the influence of FO on EM practices is assessed to deduce the role that external investors may play in bringing transparency and reducing manipulation.

In this respect, this chapter examines in detail the dynamics that affect EM in industrial firms and further contributes to the broader literature on CG and financial reporting practices in emerging markets.

4.1.1 Overview of Methodological Approach and Data Analysis Techniques

The methodological approach adopted in this chapter flows from the quantitative framework presented in Chapter 3. The underlying model used for the detection of EM is the classification shifting approach presented by Malikov, Manson, and Coakley (2018). The model detects manipulative practices by measuring the unexpected core earnings through the reclassification of items appearing on financial statements, namely revenues and expenses. The data covers industrial firms listed in ASE and PEX from 2017 to 2023, hence it presents a robust basis for analysis.

The dataset contains financial variables such as revenue, net income, and total assets, and governance metrics like board size, board independence, and CEO duality. Ownership structures also include FO. This analysis follows a series of structured steps:

First, descriptive statistics are computed to summarize the financial and governance characteristics of the firms, outlining general trends and variability within the sample. Second, unexpected core earnings are calculated by means of classification shifting techniques as a way to detect manipulative practices, hence providing a key measure for assessing EM. Third, discriminant analysis is applied to classify firms into two categories: those likely engaging in EM and those that are not. This analysis is based on a

combination of financial and governance variables to establish the patterns of manipulation.

The predicted probability of EM is, therefore, estimated using logistic regression. This technique will help to assess the role of financial ratios, CG variables, and FO characteristics in determining manipulation probability. Lastly, this study examines the impact of CG and FO on the likelihood of EM, allowing an insight into how such factors enable or restrain managerial behavior. These methods form a complete framework for analyzing EM practices and their underlying determinants.

4.1.2 Summary of the Analytical Approach

The analytical approach adopted in this chapter combines descriptive and inferential statistical techniques in the pursuit of comprehensively understanding EM practices. Descriptive statistics provide the ground by summarizing the main characteristics of financial and non-financial variables such as revenue, assets, governance attributes, and FO structures. Such summaries provide context for more advanced analyses.

Next, the normality of data, outlier identification, and correlation are subjected to preliminary data analysis, which will be indispensable to advanced statistical modeling. All these initial steps help in the identification of possible problems with data and verify assumptions that might be made for further analysis.

The core of this chapter is the detection of EM through classification shifting. In this regard, the unexpected core earnings are calculated and the firms are classified on the basis of their likelihood to manipulate. Discriminant analysis is then used to refine these classifications, which provides insight into how the financial and governance variables differentiate between managing and non-managing firms.

Logistic regression further enhances the analytical framework by predicting the likelihood of EM using a broader set of variables. This technique evaluates the relative importance of financial, governance, and foreign ownership factors in determining manipulation likelihood, offering a nuanced understanding of EM dynamics.

Finally, the role of CG and FO is assessed to extend EM behaviors. This analysis emphasizes the enabling and constraining effects of these factors, therefore drawing

actionable implications for policymakers and practitioners. Together, these steps comprehensively examine EM practices and their implications for governance and transparency.

4.2 Descriptive Statistics

This section provides an in-depth analysis of the descriptive statistics relating to financial variables, CG, EQ, and FO, in addition to the distribution of indicators associated with EM. These metrics are very important in outlining a comprehensive view of the sampled firms reflecting their operational attributes, governance frameworks, reporting practices, and foreign ownership patterns. The study of these variables is not only imperative for situating the financial reporting methodologies of companies listed on the Amman Stock Exchange (ASE) and the Palestine Exchange (PEX), but it also identifies the elements that contribute to EM.

Financial metrics, such as revenues, net income, and operating expenses, give considerable insight into the operational magnitude and economic well-being of the organizations. These metrics underline the heterogeneity of the firms with respect to their dimensions, profitability, and cost management approaches, hence providing a background for the evaluation of discrepancies in EM techniques. The following CG metrics board size, board independence, and CEO duality present the monitoring mechanisms in place and how these may affect managerial discretion with respect to financial transparency. Such metrics are of utmost importance for testing the strength of governance structures in deterring manipulation. EQ variables, such as accruals quality, earnings persistence, and earnings smoothness, are at the heart of the reliability and consistency of financial reporting. High-quality earnings are a sign of good reporting practices; on the other hand, poor-quality earnings can signal either aggressive accounting or manipulation of earnings. Such metrics give an in-depth understanding of the integrity of financial statements and their compliance with operational realities.

Adding another layer of complexity, there are the levels of FO, which include external control and demands for compliance with international reporting standards. The extent of FO in a firm may strongly affect its governance practices and financial reporting practices, dampening or exacerbating EM practices depending on the context.

Finally, the distribution of the EM indicators reveals the prevalence of manipulation among the sample firms. This analysis separates the companies into two groups: those that indulge in EM and those that do not, hence shedding light on the magnitude of the problem and laying the groundwork for subsequent investigation of the factors and effects related to manipulation of earnings. Taken collectively, these descriptive statistics provide a solid foundation for the subsequent advanced statistical analyses and models, allowing for better understanding of the factors and dynamics controlling EM in the contexts of Jordan and Palestine.

4.2.1 Descriptive Analysis results

Descriptive Analysis of Financial Variables

Financial measures like as total revenue, costs, net income, and total assets give critical information on the operational scale, financial performance, and cost structures of companies listed on the Amman Stock Exchange (ASE) and the Palestine Exchange (PEX). Table 4.1 highlights these characteristics, indicating significant heterogeneity due to the varied economic situations, business strategies, and financial practices of the enterprises under consideration. This variety highlights the unique problems and possibilities faced by enterprises operating in various areas.

Table 4.1: Descriptive Statistics for Financial Variables

Variable	Mean	Median	Std. Deviation	Min	Max
Total Revenue	10,074,460	10,272,820	3,422,042	5,019,759	24,108,390
Cost of Goods Sold	5,061,461	4,267,460	2,336,048	3,007,977	17,252,020
Operating Expenses	3,236,044	2,465,060	2,415,655	1,003,594	15,272,980
Net Income	2,007,073	1,423,771	1,808,060	1,694	8,976,521
Depreciation and Amortization	1,250,113	1,266,239	412,384	501,025	1,992,159

The wide range in total revenue values reflects large differences in the scale of operations for the sample firms. Such larger firms, with a higher level of revenues attained, are usually able to enjoy the operating economies of scale. This gives them an advantage in controlling cost structures; hence, resulting in lower cost-to-revenue ratios in proportionate terms. However, much smaller firms may not adapt themselves to similar efficiencies where fixed costs remain relatively higher in relation to output levels. These dynamics illustrate the range of operational capacities within the data.

Operating expenses are very heterogenous, with a standard deviation of more than 2.4 million. This result points to the stark differences in cost management strategies followed by the firms. Several firms show streamlined operations that have well-controlled costs associated with them, but higher costs for other firms in light of expansive business models, inefficiencies, and high administrative and marketing expenditure. High operating expenses may force firms to work hard to maintain profitability, which is reflected in the wide range of net income values: from marginal gains to substantial profits. Such a wide range of net income values reflects disparities in financial resilience and market positioning among the sample firms. Depreciation and amortization figures provide additional context regarding asset utilization and investment strategies.

Those firms that depict higher depreciation costs are most likely to have made substantial investment in fixed assets, including property, plant, and equipment. The investments might increase productivity and operating capacity in the long run but might incur short-term financial burdens due to increased depreciation expenses. The variation in this metric indicates possible differences in asset intensity and life cycle stages among the firms. For example, younger or rapidly expanding firms may have higher depreciation expenses as they scale operations, while mature firms may show stable or declining depreciation costs as assets are fully depreciated. The analysis of these financial metrics highlights the need for striking a proper balance between operational efficiency and strategic investment in order to optimize financial performance. Companies with strong revenue generation and cost management capabilities are better positioned to achieve sustainable profitability.

On the other hand, firms with higher expenses and erratic profitability may require strategic interventions in order to raise their efficiency and competitiveness. These financial insights provide a foundation for understanding the broader patterns of EM practices since firms with tighter financial margins may be more inclined to engage in manipulative behaviors in order to meet performance benchmarks.

Descriptive Analysis of Corporate Governance Variables

Corporate governance indicators provide important information on the oversight processes that impact management behavior, strategic decision-making, and financial reporting standards. These indicators indicate the structural and procedural components

that contribute to the accountability, transparency, and integrity of the businesses' governance systems. Table 4.2 outlines the important CG variables, including board size, board independence, and CEO duality, that jointly affect the quality of governance among the sample organizations.

Table 4.2: Descriptive Statistics for Corporate Governance Variables

Variable	Mean	Median	Std. Deviation	Min	Max
Board Size	9.55	10.00	2.96	5.00	14.00
Board Independence	0.65	0.65	0.15	0.40	0.90
CEO Duality	0.27	0.00	0.44	0.00	1.00

Board size varies moderately across the sample, with a mean of 9.55 directors per board and a range from 5 to 14 members. Larger boards are generally associated with a broader range of expertise and improved oversight capabilities, which may enhance decision-making and reduce the likelihood of managerial misconduct. Board size varies across firms, reflecting differences in organizational complexity, with larger boards more likely to be found in firms with greater operational and strategic demands. On the other hand, very large boards face coordination problems, loss of efficiency, and possibly difficulty in achieving consensus, all of which can undermine their effectiveness.

Board independence, with a mean of 0.65 and low variability, shows a relatively consistent commitment of firms to include independent directors. Independent board members would be very important in ensuring unbiased monitoring and holding management accountable for their actions. This composition, with an independent representation as required by governance standards, points to conformity with good practice in CG. However, the variation in independence levels indicates that some firms may have more room for improvement in ensuring an optimal balance of internal and external oversight on their boards. CEO duality, where the CEO also serves as the board chairperson, is found in 27% of the sample firms.

This practice centralizes the authority of decision-making and weakens the board in its capacity to oversee management independently. CEO duality is associated with increased risks of manipulation of earnings and reduced board effectiveness because it reduces the ability of the board to challenge or question managerial decisions. Firms that do not combine the roles of CEO and board chairperson are better positioned to ensure checks and balances in governance structures. This finding underlines the need for

policies prescribing role separation to enhance the independence of the board and improve corporate control. The aggregate analysis of these indicators puts into light the different levels of governance quality among the sample companies. While most firms depict adherence to the standard governance practices of a balanced board size and independent representation, the fact that more than a quarter of the firms have CEO duality does raise questions regarding concentrated power and transparency in financial reporting.

These results highlight the need for strong governance structures that curtail risks of managerial opportunism and lead to the creation of a culture where accountability and ethical financial reporting are key attributes. Through the identification of gaps in practices, companies can then make themselves more resilient against manipulation of earnings and hence build investor confidence.

Descriptive Analysis of Earnings Quality

Earnings quality criteria, such as accruals quality, earnings persistence, and earnings smoothness, are important markers of financial reporting accuracy and consistency. These indicators give useful insights into the level of openness and integrity in the sample businesses' reported results, emphasizing variances that may reflect different accounting methods and management actions.

Accruals Quality: Evaluates the EQ based on the proportion and nature of accruals, offering insights into potential earnings manipulation. High-quality accruals are typically sustainable and less subject to manipulation (Nissim, 2021).

$$Accruals\ Quality = \frac{Total\ Accruals}{Average\ Total\ Assets}$$

Total Accruals can be calculated as:

$$Total\ Accruals = Net\ Income - Cash\ Flow\ from\ Operations$$

$Average\ Total\ Assets\ is\ the\ average\ of\ total\ assets\ at\ the\ beginning\ and\ end\ of\ the\ period.$

Earnings Persistence: Measures the sustainability of earnings over time, indicating the predictability and reliability of financial performance. Persistent earnings suggest that reported profits are reflective of ongoing business operations rather than one-time adjustments (Nissim, 2021).

$$Earnings\ Persistence = \alpha + \beta \cdot Earnings_{t-1} + \epsilon$$

Where:

- α is a constant,
- β is the coefficient that indicates the degree of earnings persistence,
- Earnings t−1 is the earnings from the previous period,
- ϵ is the error term.

Earnings Smoothness: Assesses the consistency of earnings, which may reflect managerial efforts to present stable and predictable financial outcomes. While some degree of smoothing can be justified, excessive smoothness may indicate manipulation to avoid reporting volatility (Nissim, 2021).

$$Earnings\ Smoothness = \frac{\sigma(Earnings)}{\sigma(Cash\ Flow\ from\ Operations)}$$

- Where σ (Earnings) is the standard deviation of earnings, and σ (Cash Flow from Operations) is the standard deviation of cash flow from operations over a period of time.

Interpretation: A lower ratio suggests smoother earnings, which may indicate either effective management or potential earnings manipulation.

Table 4.3 highlights these critical criteria and provides a foundation for analyzing the quality of profits throughout the dataset.

Table 4.3: Descriptive Statistics for Earnings Quality Metrics

Metric	Mean	Std. Deviation	Min	Max
Accruals Quality	0.0185	0.1196	0.0000	0.9117
Earnings Persistence	-0.062	0.0584	-0.225	0.125
Earnings Smoothness	0.7485	0.0853	0.610	0.920

The accruals quality means 0.0185, which can be interpreted as relatively high reliability in the financial reporting practices of the sample firms. However, the large variance in values, ranging from 0.0000 to 0.9117, indicates huge variability in the way firms manage their accruals. Those firms with lower accruals quality have a greater likelihood of participating in manipulative accounting practices that deviate from the true financial position of the firm. The high standard deviation of 0.1196 reflects differences in accounting policies, operational strategies, and managerial discretions across firms. This would also mean that there is variability in gaining consistency in accrual

management, possibly due to pressures from the external market or even internal resource constraints.

Earnings persistence, defined as the predictability of future earnings based on past performance, has a mean value of -0.062. The result may therefore indicate that the sample firms do not have consistent earnings trends. Negative earning persistence could also be a signal for the volatility in earnings, which is driven by economic factors, cyclical industry trends, or even erratic management practices. Low persistence firms will have a hard time maintaining investor confidence because unpredictability in earnings makes it difficult for stakeholders to assess long-term financial health and performance. Earnings smoothness, with a mean of 0.7485, indicates moderate stability in reported earnings across the sample.

Smooth earnings have long been popular among investors and analysts, as this could refer to predictability in financial results and stability. However, very smooth earnings may raise concerns about the possibility of EM, where firms might artificially smooth out results to meet market expectations or specific performance targets. The presence of such practices could mask underlying operational challenges, mislead investors, and compromise the reliability of financial reporting. Variability in these EQ measures indicates that strong governance frameworks and effective oversight mechanisms are important for ensuring high-quality financial reporting. Companies with strong accruals quality, consistent earnings persistence, and appropriate levels of earnings smoothness will be the ones to earn investors' trust and maintain financial stability.

On the other hand, companies that show significant deviations in such metrics may stand a greater chance of being looked at closely by auditors and regulators, thus showing the critical role EQ plays in financial integrity and transparency.

Descriptive Analysis of Foreign Ownership Variables

Foreign ownership levels reveal the amount of foreign influence on the sample businesses and their financial reporting procedures. These characteristics demonstrate how external investors influence CG, transparency, and accountability. Table 4.4 highlights the important indicators associated with FO, providing a picture of its prevalence and impact throughout the dataset.

Table 4.4: Descriptive Statistics for Foreign Ownership Variables

Variable	Mean	Median	Std. Deviation	Min	Max
Level of Foreign Ownership	0.17	0.17	0.07	0.05	0.30

A foreign ownership level of 0.17 suggests that, on average, international investors have a relatively modest presence among the sample firms. However, while the FO levels do show variation and reach as high as 30% for some firms.

On one side, firms with a higher level of FO are often subject to strict reporting standards and closer scrutiny by international stakeholders. Thus, they are more likely to adopt global standards for financial reporting, such as IFRS, and governance frameworks that emphasize accountability and transparency. Potential benefits of FO include improved investor confidence, better access to capital markets, and stronger governance practices.

The standard deviation of 0.07 for foreign ownership level reflects variations in firm-specific characteristics, industry norms, and regional market conditions. While the firms with limited FO may have less ability to improve governance and transparency, those with a high degree of foreign investment are more capable of leveraging international expertise and maintaining a high level of quality in financial reporting practices. The results of this study confirm that the regulatory environment conducive to foreign investment can significantly play the role of an enhancer in good governance and reduction in EM risk.

4.2.2 Distribution of Earnings Management Indicators

Table 4.5 summarizes the distribution of enterprises defined as either engaging or not engaging in EM. This classification is based on a binary classification scheme, with one representing business that manage earnings and the other indicating firms that do not manage earnings. This categorization gives significant insights into the prevalence of EM within the sample, highlighting tendencies that may impact future analytical frameworks.

Table 4.5: Distribution of Earnings Management Indicators

Earnings Management Classification	Count	Percentage
Class 0 (Not Managing Earnings)	178	60.54%
Class 1 (Managing Earnings)	116	39.46%

The results indicate that 60.54% of the firms are classified as not managing earnings. This perhaps suggests that these firms are relatively transparent and conduct their financial reporting in an ethical manner, which may be indicative of strong internal governance mechanisms and a commitment to regulatory compliance. The prevalence of transparency among these firms reflects the impact of good CG structures, scrutiny by owners, and an overall commitment to the maintenance of investor trust.

However, the significant minority of firms that identified managing earnings as the underlying factor in their choice, representing 39.46%, shows the persistence of financial manipulation behaviors within the sample. This proportion is of great concern, since it reflects a substantial subset of firms that may engage in practices distorting financial statements in order to meet short-term goals, such as hitting earnings targets, maintaining stock prices, or securing favorable financing terms. These can compromise market integrity, mislead stakeholders, and ultimately destroy investor confidence.

The relatively high number of enterprises managing earnings emphasizes the importance of effective detection procedures and improved governance measures. Governance mechanisms such as independent board monitoring, strong audit committees, and external examination by institutional or foreign investors can help to discourage earnings manipulation. To limit the incidence of such activities, regulatory bodies must enforce financial reporting rules rigorously and apply fines for noncompliance.

This distribution also underscores the importance of organizations implementing sophisticated detection procedures in order to proactively identify and counteract EM activities. Techniques such as the Beneish M-Score, categorization shifting models, and the incorporation of EQ indicators can help to reveal minor kinds of manipulation that might otherwise go unnoticed. Using these approaches, corporations and regulators may improve openness and accountability in financial reporting.

The findings in Table 4.2.5 serve as the framework for the remaining studies in this study, which seek to investigate the underlying determinants impacting EM practices. The study aims to identify the causes of manipulation and assess the effectiveness of governance and regulatory frameworks in resolving these difficulties by investigating variables such as CG features, EQ measurements, and FO. This research will help to

create focused techniques for promoting financial integrity and lowering the risks connected with EM.

4.3 Preliminary Data Analysis

Details are covered in this part to ensure the adequacy of the dataset for applying high-level statistical modeling. This subsection further conducts normality tests, evaluates outliers, examines correlation measures, performs a collinearity test, checks for equality of variances, and explores EQ measures to rigorously ascertain the quality of the dataset, its deviation from a Gaussian standard, and the dataset's suitability for the objectives of this research. These preprocessing procedures are crucial for obtaining accurate and informative interpretations in later analyses.

4.3.1 Normality and Outlier Analysis

Normality was evaluated with skewness and kurtosis for all variables and deemed acceptable for approximate normal distribution if values were between −1.5 and 1.5. We further confirmed the distribution of the variable with complementary visualizations like histograms and Q-Q plots. Table 4. 6provides a description of the skewness and kurtosis values of the primary variables in the dataset.

Table 4.6: Skewness and Kurtosis for All Variables

Variable	Skewness	Kurtosis
Total Revenue	0.85	1.20
Net Income	0.97	1.45
Cost of Goods Sold	0.76	0.95
Operating Expenses	0.88	1.30
Total Assets	0.40	0.70
Board Size	-0.12	-0.85
Board Independence	-0.05	-0.60
Audit Committee	-0.20	-0.50
CEO Duality	1.50	0.90
Foreign Ownership	0.48	-0.58
Accruals Quality	1.12	0.98
Earnings Persistence	0.25	-0.05
Earnings Smoothness	0.35	-0.02

For the financial measures, total revenue, net income, and operating expenses are mildly positively skewed, implying that most firms in the sample present values around the lower end with a few reporting significantly larger metrics. This distribution is consistent with economic datasets in general, in which larger firms tend to be outliers in terms of scale and profitability.

The corporate governance variables, including board size and independence, derive near-normal distributions, further evidencing similar practices among the sample companies. The-moderate board sizes are common as the skewness is slightly negative in direction which is could mean the balance between efficiency and oversight effectiveness. Likewise, EQ measures such as accruals quality and earnings smoothness lie between reasonable limits. These results provide need to include these metrics in future analyses, as they have distributions consistent with statistical modeling assumptions.

Outliers were detected by boxplots and the interquartile range (IQR) approach. Table 4.7 highlights the number of outliers identified for each variable, their possible influence on the study, and the treatment options chosen.

Table 4.7: Outlier Detection Summary

Variable	Number of Outliers	Impact Assessment	Treatment
Total Revenue	5	Reflects high business scale	presented
Net Income	4	Genuine operational differences	presented
Cost of Goods Sold	3	Operational variability	presented
Operating Expenses	3	Business model differences	presented
Board Size	0	No outliers detected	N/A
Board Independence	0	No outliers detected	N/A
Audit Committee Independence	0	No outliers detected	N/A
CEO Duality	1	Rare governance structure	presented
Foreign Ownership	2	Reflects unique investor profiles	presented
Accruals Quality	3	Reflects high deviations	presented
Earnings Persistence	2	Rare deviations	presented
Earnings Smoothness	1	Reflects unique operational characteristics	presented

Financial outliers, such as total revenue and net income, were shown to reflect true variances in business size, operational scale, and profitability. These outliers were kept in

the dataset to ensure that it was representative and captured the entire range of variation in company characteristics. Outliers in cost-related variables, such as COGS and operational expenditures, indicate various cost structures and business models rather than data abnormalities.

For the corporate governance metrics and variables of EQ, outliers are insignificant, showing no extreme deviations in practices consistent across the sample firms. It also indicates that there was one outlier for CEO duality, reflecting an unusual type of governance structure, for which retention could be a potential explanatory variable in further regressions. Outliers regarding EQ metrics include measures of accruals quality and earnings smoothness and represent high deviations carrying interesting insights into unique operational or reporting characteristics. These outliers were also retained in order to conduct a complete analysis of the dataset.

4.3.2 Correlation Analysis

The Pearson correlation coefficients are calculated so as to review the relation between the variables of financial, governance, FO, and EQ with regard to the indicator of EM. These correlations provide an elementary understanding of how these variables interact in influencing the prevalence of earnings manipulation. These results provide significant evidence of the underlying relationship between the dynamics of financial variables, CG, EQ and FO, hence providing a nuanced look at factors contributing to EM behaviors. The full correlation matrix is shown in Table 4.8, describing the strength and direction of these relationships.

Table 4.8: Full Correlation Matrix

Variable	Revenue	Net Income	COGS	Operating Expenses	Board Size	Board Independence	Audit Committee Independence	CEO Duality	Foreign Ownership	Accruals Quality	Earnings Persistence	Earnings Smoothness	Earnings Management Indicator
Revenue	1.00	0.76	0.85	0.62	0.45	0.30	0.20	0.18	0.12	0.21	0.18	0.12	0.21
Net Income	0.76	1.00	0.65	0.60	0.39	0.25	0.15	0.15	0.10	0.25	0.30	0.22	0.30
COGS	0.85	0.65	1.00	0.70	0.35	0.25	0.20	0.12	0.10	0.22	0.28	0.18	0.22
Operating Expenses	0.62	0.60	0.70	1.00	0.32	0.20	0.18	0.10	0.08	0.12	0.25	0.22	0.25
Board Size	0.45	0.39	0.35	0.32	1.00	0.60	0.40	-0.05	0.20	-0.12	-0.08	-0.10	-0.12
Board Independence	0.30	0.25	0.25	0.20	0.60	1.00	0.50	-0.08	0.25	-0.15	-0.18	-0.12	-0.18
Audit Committee Independence	0.20	0.15	0.20	0.18	0.40	0.50	1.00	-0.10	0.20	-0.15	-0.20	-0.12	-0.15
CEO Duality	0.18	0.15	0.12	0.10	-0.05	-0.08	-0.10	1.00	0.07	0.18	0.22	0.12	0.25
Foreign Ownership	0.12	0.10	0.10	0.08	0.20	0.25	0.20	0.07	1.00	0.05	0.08	0.10	0.05
Accruals Quality	0.21	0.25	0.22	0.12	-0.12	-0.15	-0.15	0.18	0.05	1.00	0.35	0.25	0.28
Earnings Persistence	0.18	0.30	0.28	0.25	-0.08	-0.18	-0.20	0.22	0.08	0.35	1.00	0.40	0.30
Earnings Smoothness	0.12	0.22	0.18	0.22	-0.10	-0.12	-0.12	0.12	0.10	0.25	0.40	1.00	0.22

The correlation analysis brings to the fore a lot of information on the relationships that exist between the main variables under study. Contemplating these interlinkages shows how financial variables, CG, EQ and FO interact with one another in influencing EM.

The strong positive correlation between revenue and cost of goods sold ($r = 0.85$) underscores the direct relationship between a firm's revenue generation and its production or service delivery costs. This high correlation is expected in operational contexts where COGS represents the primary expense tied to revenue. Firms with higher revenues typically incur proportionally higher COGS due to increased production or sales volumes.

The positive correlation between revenue and net income ($r = 0.76$) indicates that firms generating higher revenues tend to report proportionally higher profitability. This relationship reflects the operational efficiency of firms that successfully convert sales into

profits while managing associated costs. However, the strength of this correlation also suggests that revenue is a critical driver of earnings manipulation, as managers may face pressure to sustain or exceed profitability expectations tied to revenue performance.

The correlation between board size and board independence (r = 0.60) highlights the interplay between governance structure and oversight quality. Larger boards are more likely to include a higher proportion of independent directors, enhancing the board's ability to provide objective oversight and mitigate managerial opportunism. This relationship is particularly significant in contexts where governance reforms mandate independent representation as a means of improving accountability and transparency.

Earnings persistence has some significant associations with financial variables, such as net income (r = 0.30) and cost of goods sold (r = 0.28), which may indicate that prior financial performance is a good predictor of current earnings trends. In this regard, historical financial measures play an important role in setting managerial expectations and reporting behavior. Firms with higher earnings persistence have less pressure to manipulate earnings, since consistent trends tend to instill investor confidence.

Accruals quality is positively correlated with the EM indicator (r = 0.28), indicating that lower-quality accruals are highly associated with high levels of earnings manipulation. This further indicates the relevance of the quality of accruals as a diagnostic tool for financial reporting anomalies. Firms exhibiting poor accruals quality may be more prone to manipulative behavior in masking adverse underlying events or meeting predetermined goals.

It is also interesting to note some significant insights from the CG variables. Board independence and audit committee independence are negatively related to the EM indicator with r = -0.18 and r = -0.15, respectively, underpinning their crucial role in preventing manipulation. On the other hand, CEO duality is positively related to EM with r = 0.25, showing that concentrated managerial power raises the likelihood of financial misstatement. This finding highlights the demand for governance reforms in disjoining executive and oversight functions to promote accountability.

Both performance metrics-revenue and net income-show moderate positive significant correlations with the EM indicator condition, at 0.21 and 0.30, respectively. This would indicate that the greater the financial metrics, the greater perhaps the

motivation to manipulate earnings in order to continue trends or meet market expectations. These are behaviors that epitomize the interaction between performance pressures and managerial decision-making in financial reporting.

Correlation analysis could also provide an in-depth analysis of how each of these factors interplays to help in EM behavior. The observed relationships reinforce the need for robust governance frameworks with high-quality earnings metrics necessary to mitigate risks of manipulation that may undermine the transparency sought in financial reporting.

4.3.3 Multicollinearity Diagnostics

VIF scores were therefore calculated for all variables representing financial, governance, FO, and EQ measures to check for multicollinearity. Multicollinearity is a condition whereby strong correlations among independent variables result in the inflation of standard errors and a reduction in the reliability of estimates of coefficients. Diagnosing and addressing multicollinearity is vital to ensure the robustness and interpretability of the regression models used in this study. This value of VIF below 5 is normally acceptable in practice and gives the variable sufficient independence, not distorting any model they could both enter into.

Table 4.9: Variance Inflation Factor (VIF) Scores for All Variables

Variable	VIF
Total Revenue	2.45
Net Income	2.87
Cost of Goods Sold	2.10
Operating Expenses	1.95
Total Assets	2.35
Board Size	1.32
Board Independence	1.40
Audit Committee Independence	1.25
CEO Duality	1.08
Foreign Ownership	1.15
Accruals Quality	1.95
Earnings Persistence	2.05
Earnings Smoothness	2.22

The VIF scores for all the variables are well below the critical threshold of 5; hence, the possibility of severe multicollinearity in the dataset is rejected. This ensures that regression models are not prone to inflate standard errors and improves the reliability and interpretability of the results.

4.3.4 Homogeneity of Variances

Levene's test was used to determine the homogeneity of variances for all main variables across EM indicator groups (Yi = 0 or 1). Variance homogeneity is a critical requirement for parametric tests such as ANOVA and regression. It guarantees that the variability within each group is comparable, allowing for reliable statistical judgments. Table 4.10 shows the Levene's test findings for the dataset's major variables.

Table 4.10: Levene's Test Results

Variable	F-Statistic	p-Value	Homogeneity Assumption
Total Revenue	1.23	0.27	Met
Net Income	0.98	0.32	Met
Cost of Goods Sold	1.15	0.30	Met
Operating Expenses	1.05	0.35	Met
Total Assets	0.87	0.41	Met
Board Size	0.45	0.51	Met
Board Independence	0.32	0.65	Met
Audit Committee Independence	0.40	0.50	Met
CEO Duality	1.10	0.29	Met
Foreign Ownership	0.65	0.43	Met
Accruals Quality	0.72	0.39	Met
Earnings Persistence	1.05	0.35	Met
Earnings Smoothness	0.88	0.37	Met

The results of Levene's test show that all variables gave p-values larger than 0.05, indicating that the homogeneity of variances assumption is met for each variable. This validation is necessary to ensure the reliability of future parametric tests, such as ANOVA and regression analyses, which rely on this assumption to deliver correct and unbiased findings.

4.3.5 ANOVA Tests

ANOVA was used to determine statistically significant differences in key variable mean values between organizations classed as controlling earnings ($Y_i = 1$) and those not ($Y_i = 0$). This research assists in identifying variables that significantly differentiate between the two groups, offering insights into the features connected with EM strategies. The ANOVA test results are given in Table 4.11.

Table 4.11: ANOVA Test Results for Group Differences

Variable	F-Statistic	p-Value	Significance
Total Revenue	4.85	0.03	Significant
Net Income	7.20	0.01	Significant
Cost of Goods Sold	3.95	0.05	Marginally Significant
Operating Expenses	5.60	0.02	Significant
Total Assets	2.50	0.11	Not Significant
Board Size	1.50	0.22	Not Significant
Board Independence	2.00	0.16	Not Significant
Audit Committee Independence	1.80	0.19	Not Significant
CEO Duality	4.25	0.04	Significant
Foreign Ownership	0.85	0.36	Not Significant
Accruals Quality	6.15	0.01	Significant
Earnings Persistence	5.45	0.02	Significant
Earnings Smoothness	4.85	0.03	Significant

ANOVA tests provide important insights into the characteristics that separate organizations that manage earnings from those that do not. These findings are crucial for determining the characteristics most strongly related with EM practices and establishing their relevance for future research.

Significant group-level differences for Total Revenue are $F = 4.85$ and $p = 0.03$, for Net Income, $F = 7.20$ and $p = 0.01$, and Operating Expenses, $F = 5.60$ and $p = 0.02$. These results indicate that companies engaging in EM are systematically different from firms that do not manipulate earnings regarding revenue generation, profitability, and cost structures. The marginal significance of Cost of Goods Sold (COGS, $F = 3.95$, $p = 0.05$) suggests that operational cost variations may be relevant in distinguishing these groups.

Accruals Quality ($F = 6.15$, $p = 0.01$), Earnings Persistence ($F = 5.45$, $p = 0.02$), and Earnings Smoothness ($F = 4.85$, $p = 0.03$) are all significant. These results highlight

the importance of these measures in detecting profits fraud, as they represent the reliability, persistence, and stability of financial reporting. Companies that engage in EM often have lower accrual quality and manipulated trends in earnings persistence and smoothness.

Corporate governance measures show a significant difference for CEO Duality ($F = 4.25$, $p = 0.04$). This suggests that businesses with concentrated managerial control are more likely to participate in EM. This research highlights the impact of governance frameworks on management behavior and financial reporting standards.

There are no significant variations in governance measures across groups, including Board Size ($F = 1.50$, $p = 0.22$), Board Independence ($F = 2.00$, $p = 0.16$), and Audit Committee Independence ($F = 1.80$, $p = 0.19$). certain results indicate that certain governance qualities may not directly influence EM practices in this situation, or that their impact may be mediated by other variables.

Foreign ownership ($F = 0.85$, $p = 0.36$) does not significantly differentiate enterprises managing profits from those that do not. This conclusion may reflect the sample businesses' relatively low levels of FO, as reported in previous research.

The ANOVA findings support the dataset's eligibility for further analysis and emphasize the relevance of EQ criteria in detecting EM. Financial variables such as Total Revenue, Net Income, and Operating Expenses, as well as governance features such as CEO Duality, exhibit considerable group-level variances, underscoring their importance in advanced modeling. Non-significant factors, while less effective in distinguishing across groups, give valuable background for understanding the larger dynamics of financial reporting and governance processes. These findings provide a solid foundation for the regression analysis and other modelling approaches discussed in following sections of the research.

4.4 Detection of Earnings Management through Classification Shifting (Based on Malikov, Manson, & Coakley, 2018)

Classification shifting is a subtle but effective kind of earnings manipulation that changes the perception of a company's operational success. This method entails reallocating financial statement elements, such as sales or costs, in order to artificially boost core earnings while keeping consistency in overall reported earnings. Firms

generate a deceptive portrayal of their essential business operations by moving non-core things into core categories, which can influence investment choices, market values, and stakeholder confidence. Unlike other kinds of EM, categorization shifting does not impact overall earnings, making it more difficult to identify using typical financial measurements.

This section extends the detection framework for EM through classification shifting with a focus on the estimation of core earnings, thereby regressing expected core earnings and deriving the unexpected core earnings as a proxy showing evidence of manipulation. It is based on this UCE metric that firms could possibly be identified as practitioners of classification shifting and, as such, could systematically work their way into the identification of earnings manipulation. Firms are thereafter grouped into categories of concern based on their UCE values, with significant firms that show large deviations from expected financial norms. By adopting this broad approach to methodology, the prevalence of, and characteristics of classification shifting practices are provided with a clearer understanding for the stakeholders of financial reporting integrity.

4.4.1 Calculation of Core Earnings and Non-Core Earnings

Core earnings are those that arise from the fundamental business activities of the company, such as revenues related to the sale of products and services and costs of their production and delivery. In reflecting the true profitability from business operations, core earnings become an essential element of financial analysis and, not surprisingly, an important target for misrepresentation through classification shifting.

On the other hand, non-core earnings represent all those items that arise not from normal business operations. These will include any gain or loss from sale of assets, income investments, and other extraordinary items, which can be from a legal judgment or even a natural calamity. Although non-core earnings items can have an enormous effect on the total profitability of a firm, they cannot reflect meaningful indications about the core operation sustainability or performance.

The differentiation between core and non-core income is key to the identification of shifting classification, since the aforementioned practice usually involves re-classification of non-core items as core in order to exaggerate the firm's operational success. For instance, a firm may transfer proceeds from the sale of fixed assets into

revenues or may reduce the effect of its operating expenses by recording the same as extraordinary items. These reclassifications need identification and isolation, which must be done by carefully scrutinizing the financial statements with regard to consistency and appropriateness of item classification.

Calculation of core and non-core earnings establishes a premise for evaluating the accuracy and integrity of financial reporting by this analysis. Further, the estimation of expected core earnings and derivation of UCE enhance the ability to detect discrepancies and provide a framework for the identification of firms that might be engaging in earnings manipulation through classification shifting.

Identifying Core Earnings Items in the Financial Statements

Identifying core earnings is an important step in analyzing a company's financial health and operational effectiveness. Core earnings are the financial results that flow directly from a company's principal business activity, eliminating one-time or special occurrences. This difference guarantees that the study only focuses on the sustainability and effectiveness of normal operations, making core profits a trustworthy indicator for analyzing a company's underlying economic success.

Core earnings typically include three major components:

1) **Revenues**: This is the money created by the sale of goods or services that are the primary focus of the company's operations. This comprises the sale of finished items for manufacturers, as well as revenue from service contracts for providers. Core earnings are based on revenues, which indicate the firm's capacity to create income through its operational competence and market presence.
2) **Cost of Goods Sold (COGS)**: These are the direct expenses of producing products or providing services. COGS generally consists of raw materials, direct labor, and production overhead. COGS gives insight into the efficiency of manufacturing or service delivery operations since it directly links these expenses to revenue creation. Lower COGS compared to revenue suggests improved operational efficiency, whereas higher COGS may signify inefficiencies or increased input costs.
3) **Operating Expenses**: These include selling, general, and administrative costs (SG&A), which are required to support day-to-day business operations. Examples include marketing costs, administrative wages, and office expenditures. Although

not directly related to output, operational expenditures play an important role in maintaining key corporate operations.

In contrast, **non-core earnings** include financial elements that do not directly arise from a company's key operations. They include:

a) **Gains or Losses**: These result from non-operational operations such as the sale of fixed assets or investments. While such transactions have a major influence on total earnings, they do not represent the firm's ongoing operating capability.
b) **Extraordinary Items**: These are one-time, non-recurring occurrences, including natural disaster losses, court settlements, or restructuring expenses. Including such items in core profits would mislead the financial analysis because they do not reflect a company's usual performance.

The distinction between core and non-core earnings is critical for proper financial reporting and analysis. Misclassification of non-core items into core earnings can falsely exaggerate the company's operational performance, deceiving investors and stakeholders. By meticulously scrutinizing financial statements and separating fundamental elements, this technique guarantees a targeted examination that shows the underlying economic operations of the business.

Estimating Expected Core Earnings

The predicted core profits are estimated using a regression model that forecasts typical operating performance based on major financial factors. This technique establishes a statistical baseline, allowing analysts to identify variations that might suggest earnings manipulation. The regression equation is stated as:

$$\boldsymbol{Expected\ Core\ Earnings} = \boldsymbol{\beta 0} + \boldsymbol{\beta 1}(\boldsymbol{Revenue}) + \boldsymbol{\beta 2}(\boldsymbol{COGS}) + \boldsymbol{\beta 3}(\boldsymbol{Operating\ Expenses}) + \boldsymbol{\epsilon}$$

Components of the Regression Model

1. **Intercept Term (β0)**: The intercept denotes the baseline level of core earnings when all predictors (sales, COGS, and operating expenditures) are 0. In most

circumstances, the intercept is not clearly interpretable, yet it is a key element in the regression equation.

2. **Revenue (β1)**: Revenue is the key driver of core earnings since it shows a company's capacity to create income from its core operations. A positive coefficient (β1>0) suggests that rising revenues lead to higher core profitability. This link demonstrates the significance of good sales success in maintaining operational profitability.
3. **Cost of Goods Sold (COGS, β2)**: COGS indicates the direct expenses of producing products or providing services. Higher manufacturing costs lead to lower profitability, resulting in a negative coefficient (β2<0). This strong link gives insight into the firm's cost management techniques and operational effectiveness.
4. **Operating Expenses (β3)**: Operating expenditures, such as SG&A, are required to sustain business operations but generally impair profitability. The coefficient (β3) for operational expenditures is projected to be either negative or relatively positive, depending on their contribution to revenue creation.
5. **Error Term (ϵ)**: The error term accounts for variability in core earnings that cannot be explained by the predictors. This accounts for factors such as market circumstances, managerial actions, or unanticipated occurrences affecting core earnings.

The regression analysis produced the following outcomes, which are reported in Table 4.12.

Table 4.12: Regression Coefficients for Expected Core Earnings Model

Variable	Coefficient (β)	Standard Error	p-Value
Intercept	0.10	0.02	<0.01
Revenue	0.65	0.08	<0.001
Cost of Goods Sold	-0.30	0.10	0.02
Operating Expenses	0.25	0.07	0.01
Adjusted R-squared			**0.72**
F-statistic			**35.85**

- **Adjusted R-squared**: The model explains 72% of the variance in core earnings, as indicated by the coefficient of 0.72.
- **F-statistic**: The model's overall significance was confirmed with a score of 35.85 (p<0.001).

The findings reveal a robust model fit, with all variables contributing considerably to the prediction of predicted core profits. The coefficients reveal that total revenue $\beta1=0.65$) and operational expenditures ($\beta3=0.25$) favorably affect core earnings, whereas COGS ($\beta2=-0.30$) adversely affect earnings, highlighting its function as a key expense. The high adjusted R-squared value demonstrates the model's ability to capture the major drivers of core profitability.

The regression model provides a reliable foundation for predicted core earnings under typical operating conditions. Key measures like adjusted R-squared and F-statistic confirm the model's correctness and dependability. A high adjusted R-squared value suggests that the predictors (sales, COGS, and operating expenditures) successfully explain the variability in core profits. The F-statistic assesses the model's overall significance, validating whether the variables all contribute to explaining core profits.

By comparing reported core earnings to predicted values, the model detects disparities that might indicate earnings manipulation. For example, if reported core profits outperform projected values by a large margin, this may imply classification shifting, in which non-core items are misclassified as core earnings. In contrast, if reported core earnings fall below expectations, it may represent overstated operational performance or excessively conservative accounting techniques.

The ability to forecast projected core profits is a valuable tool for spotting categorization shifts and guaranteeing financial transparency. By creating a statistical standard, this technique allows stakeholders to evaluate variances in reported earnings and assess the integrity of financial reporting methods.

4.4.2 UCE Calculation and Interpretation

The UCE is calculated using the following formula:

$$UCE = Reported\ Core\ Earnings - Expected\ Core\ Earnings$$

Where:

- Reported Core Earnings: Core earnings as shown in the company's financial statements

- Expected Core Earnings: The previously described regression model was used to estimate core earnings.

Positive and Negative UCE Interpretation

1. **Positive UCE**: Firms that engage in this activity seek to improve the perception of operational success by reclassifying non-core items, such as gains from asset sales or unusual revenues, into core earnings categories. This may result in an overstatement of core earnings.
2. **Negative UCE**: This suggests that core earnings may have been understated or reported too conservatively. This might happen if operational revenue is misclassified as non-core, possibly to manage expectations or smooth results over reporting periods.

The computation of UCE offers a mathematical foundation for determining the likelihood of categorization change. Significant deviations from predicted core earnings, whether good or negative, call for additional examination of the firm's financial operations to identify the possibility of manipulative activity.

Distribution of Unexpected Core Earnings

The distribution of UCE among the sample businesses is represented in the table below, which highlights the predominance of firms with substantial positive or negative UCE values as well as the level of categorization shifting in the dataset. Table 4.13 summarizes the distribution of UCE in the sample businesses. The results emphasize the predominance of businesses with substantial positive or negative UCE values, offering light on the magnitude of categorization shifting in the dataset.

Table 4.13: Distribution of Unexpected Core Earnings

UCE Range	Count	Percentage
High Positive (> Threshold)	45	15%
Normal (Within Threshold)	210	70%
High Negative (< -Threshold)	45	15%

The threshold values for substantial UCE deviations were calculated using statistical norms obtained from the regression model's residual analysis. Firms with UCE

levels higher than these criteria are highlighted for additional inquiry into their financial reporting processes.

By generating and evaluating UCE, this study provides a strong technique for identifying categorization shifting and improving financial reporting integrity. The findings provide a framework for further research into the causes and implications of EM.

4.4.3 Binary Classification of Companies Based on UCE

To operationalize UCE for detection, enterprises are divided into two categories based on the size of their UCE values. This binary categorization enables the systematic identification of organizations that may engage in classification shifting (Yi=1) and those that follow expected financial reporting methods (Yi=0). The categorization provides a clear framework for identifying organizations with large variations in reported core earnings from those whose financial reporting conforms to expected standards.

Assigning Earnings Management Dummy Variable ($Yi = 1, Yi = 0$)

The binary classification is determined using the following criteria:

$$Yi = \begin{cases} 1, & if \ | UCE | > Threshold \ (significant \ deviations) \\ 0, & if \ | UCE | \leq Threshold \ (normal \ deviations) \end{cases}$$

Where:

- $Yi = 1$: Indicates firms with significant deviations from expected core earnings ($| UCE | > Threshold$), suggesting potential earnings manipulation.
- $Yi = 0$: Indicates firms with no significant deviations ($| UCE | \leq Threshold$), implying adherence to normal financial reporting practices.
- Threshold values for large UCE deviations are determined using statistical norms (e.g., residual distribution) or practical considerations. These criteria guarantee sensitivity to genuine deviations while reducing false positives. For example:

- **Positive Threshold**: + 0.10
- **Negative Threshold**: − 0.10

These limits strike a compromise between detecting significant variations in core profits and preventing overclassification of businesses with modest differences. Positive

criteria identify corporations that may have exaggerated core earnings by reclassifying non-core items, whereas negative thresholds catch instances of cautious reporting or purposeful understatement.

By defining defined criteria for classification, this framework improves the reliability of EM detection and offers a solid platform for additional research into the reasons and ramifications of classification shifting.

Summary of Companies Engaging in Classification Shifting

The classification findings, generated from the given dummy variable Yi, provide important information on the prevalence of EM among the sample enterprises. Firms are divided into two categories: those that may engage in categorization shifting (Yi=1) and those that follow expected financial reporting methods (Yi=0). This binary difference allows for a systematic review of businesses' financial reporting practices.

Table 4.14: Distribution of Companies by Earnings Management Indicator

Classification	Count	Percentage
$Yi = 0$	180	61.22%
$Yi = 1$	114	38.78%

The findings show that 38.78% of enterprises had UCE values that surpass the threshold, indicating probable categorization shifting. In contrast, 61.22% of enterprises report UCE values that are within an acceptable range, showing compliance with expected financial reporting methods.

The categorization findings quantify the prevalence of EM while also providing practical tips for dealing with classification shifting. With nearly 40% of organizations identified as potentially deceptive, the findings emphasize the significance of strong governance procedures, rigorous regulatory control, and continual monitoring activities. This framework is a significant instrument for increasing the openness and dependability of financial reporting in the sample companies.

4.5 Discriminant Analysis for Earnings Management Detection

This section describes the discriminant analysis used to classify organizations based on their propensity of participating in EM. The study assesses the discriminative power

of financial, governance, FO, and EQ characteristics in differentiating between organizations that manage earnings (Yi = 1) and those that do not manage earnings.

4.5.1 Overview of Discriminant Analysis

Discriminant analysis is a statistical approach that divides data into predetermined categories depending on predictor factors. The following major factors were used in this study to categorize organizations into EM groups (Yi = 1 or Yi = 0):

- Financial Variables: Total Revenue, Net Income, Cost of Goods Sold, Operating Expenses.
- Governance Variables: Board Size, Board Independence, Audit Committee Independence, CEO Duality.
- Ownership Variables: Foreign Ownership.
- Earnings Quality Metrics: Accruals Quality, Earnings Persistence, and Earnings Smoothness.

The purpose of this investigation is to determine the major characteristics that contribute to EM detection and evaluate the model's capacity to appropriately categorize organizations.

Discriminant Function and Coefficients

The discriminant function was calculated using a linear combination of the predictors. Where denotes the discriminant score for each business. The coefficients (β) represent each variable's proportionate contribution to group separation.

Table 4.15: Discriminant Function and Coefficients

Variable	Coefficient (β)
Total Revenue	0.45
Net Income	0.35
Cost of Goods Sold	-0.25
Operating Expenses	0.3
Board Size	0.1
Board Independence	-0.2
Audit Committee Independence	-0.15
CEO Duality	0.5
Foreign Ownership	0.12
Accruals Quality	0.4
Earnings Persistence	-0.1
Earnings Smoothness	0.25

CEO Duality has the most significant positive correlation (0.50), showing a substantial relationship with EM probability. Accruals Quality (0.40) and Revenue (0.45) are also significant predictors, demonstrating the usefulness of financial and EQ criteria in detecting earnings manipulation. Board Independence (-0.20) and Audit Committee Independence (-0.15) exhibit negative correlations, showing their importance in minimizing the possibility of earnings manipulation.

Classification Accuracy and Validation

A confusion matrix was used to determine the discriminant model's classification accuracy. To confirm the reliability of the results, cross-validation was used.

Table 4.16: Classification Accuracy and Validation

Actual/Predicted	Yi = 0	Yi = 1
Yi = 0	160	18
Yi = 1	26	90

Classification Accuracy Metrics:

- Overall Accuracy: 84.7%
- Sensitivity (Yi = 1): 77.6%
- Specificity (Yi = 0): 89.9%
- Precision (Yi = 1): 83.3%
- F1-Score (Yi = 1): 80.4%

The model achieves high overall accuracy while also performing well in terms of sensitivity and specificity. accuracy and F1-Score for Yi = 1 reflect the model's dependability in recognizing companies managing earnings, while effectively balancing accuracy and recall.

Group Centroids and Interpretation

The group centroids indicate the average discriminant score for each categorization group. These scores show how successfully the groups are divided by the discriminant function.

Table 4.17: Group Centroids and Interpretation

Group	Discriminant Score
Yi = 0	-0.45
Yi = 1	0.75

A positive centroid for Yi = 1 suggests higher discriminant scores for enterprises that manage earnings. A negative centroid for Yi = 0 indicates poorer discriminant scores for enterprises that do not manage earnings. The model's ability to discriminate between the two groups is demonstrated by the separation of their centroids.

Statistical Significance and Model Fit

Wilks' Lambda and Chi-square tests were used to evaluate the statistical significance and overall fit of the discriminant model.

Table 4.18: Statistical Significance and Model Fit

Metric	Value	p-Value
Wilks' Lambda	0.32	<0.001
Chi-square	112.5	<0.001

A low Wilks' Lambda value suggests that predictor factors have a substantial role in group separation. The Chi-square test indicates that the discriminant function is statistically significant ($p < 0.001$).

4.6 Logistic Regression Analysis for Predicting Earnings Management

This section provides a detailed study of the logistic regression model used to forecast the likelihood of EM. Logistic regression, a popular statistical tool, represents the link between a binary dependent variable (earnings management indicator) and a

collection of financial, governance, FO, and EQ predictors. The results give insights into the elements influencing profit management and evaluate the model's predicted accuracy and effectiveness.

4.6.1 Specification of the Logistic Regression Model

The logistic regression model uses chosen independent variables to predict the likelihood of a corporation participating in earnings management (Yi = 1). The model equation is given as:

$$P\,(Yi=1) = \frac{1}{1+e-(\beta 0+\beta 1X1+\beta 2X2+\cdots+\beta nXn)}$$

Here, $P\,(Yi = 1)$ represents the probability of earnings management for firm $i, \beta 0$ is the intercept, and $\beta 1, \beta 2$, ..., βn are the coefficients for predictors $X1, X2, \ldots, Xn$.

Variable Selection: Independent variables were chosen in prior analyses based on their theoretical relevance and statistical significance. These include:

- Total Revenue: Captures firm size and operational scale.
- Net Income: Indicates profitability and financial performance.
- Cost of Goods Sold: Reflects operational cost structure.
- Operating Expenses: Represents administrative and overhead costs.
- Board Size: Measures governance complexity.
- CEO Duality: Indicates managerial power concentration.
- Audit Committee Independence: Reflects oversight effectiveness.
- Foreign Ownership: Highlights external scrutiny and influence.
- Accruals Quality: Proxy for reporting reliability.
- Earnings Persistence: Captures consistency in reported earnings.
- Earnings Smoothness: Reflects artificial stabilization of earnings.

Dependent Variable: The dependent variable is binary:

- Yi = 1: Firm is classified as managing earnings.
- Yi = 0: Firm is classified as not managing earnings.

4.6.2 Estimation of the Logistic Regression Model

The logistic regression model was developed using maximum likelihood estimation, which is a statistical method that works well with binary outcomes. In this scenario, the dependent variable reflects whether a company engages in EM (Y=1) or follows standard financial reporting methods (Y=0). The research gives thorough insights into the correlations between independent factors like as financial measures, governance structures, FO characteristics, EQ, and the possibility of earnings manipulation. Table 4.19 summarizes the calculated coefficients, standard errors, and significance levels, providing a thorough knowledge of the factors that influence management behavior and financial reporting methods.

Table 4.19: Logistic Regression Coefficient Estimates

Variable	Coefficient (β)	Standard Error	p-Value
Intercept	-1.75	0.45	<0.001
Total Revenue	0.25	0.08	0.01
Net Income	0.3	0.1	0.02
Cost of Goods Sold	-0.2	0.07	0.03
Operating Expenses	0.15	0.06	0.05
Board Size	-0.1	0.04	0.03
CEO Duality	0.45	0.12	<0.001
Audit Committee Independence	-0.25	0.08	0.02
Foreign Ownership	0.2	0.07	0.04
Accruals Quality	0.35	0.1	0.01
Earnings Persistence	-0.12	0.05	0.05
Earnings Smoothness	0.18	0.07	0.03

The intercept-$\beta 0 = -1.75$, $p < 0.05$-indicates low baseline log odds of EM when all predictors are zero. The result underlines the relatively low inherent probability of manipulation when there are no other factors affecting it. However, with the incorporation of financial, governance, FO, and EQ variables, there was marked dynamics that increased or decreased the likelihood of EM.

The financial variables investigated in the model give valuable information with respect to the influence of operational scale and profitability on earnings manipulation. Total revenue is positively related to EM, with $\beta = 0.25$ and $p < 0.01$, indicating that the

larger the firm, the more it is likely to manipulate earnings. This is consistent with the view that the larger the firm, the greater the pressure to meet market expectations, which has mostly been achieved through misclassifying financial items to maintain growth trajectories.

In addition, net income is positively associated with EM, with $\beta = 0.30$ at $p < 0.01$, indicating that firms that are more profitable may manipulate earnings in order to maintain favorable trends in their financials or to reach certain performance targets. On the other hand, the cost of goods sold (COGS, $\beta = -0.20$, $p < 0.05$) is negatively associated with EM, indicating that firms with higher operational costs are less likely to manipulate earnings. This negative relationship may reflect a focus on operational efficiency and transparent reporting among cost-intensive firms.

Governance systems appear as critical determinants in shaping EM behavior. CEO dualism ($\beta = 0.45$, $p < 0.01$) has a significant positive correlation with earnings manipulation.

Audit committee independence ($\beta = -0.25$, $p < 0.05$) has a substantial negative correlation with EM. Independent audit committees serve an important role in improving monitoring and accountability while discouraging managers from engaging in deceptive behavior. This conclusion emphasizes the significance of governance changes that prioritize independent supervision to ensure the dependability and integrity of financial reporting.

Foreign ownership factors have subtle implications on EM. Foreign ownership ($\beta = 0.20$, $p < 0.05$) has a positive correlation with manipulation, highlighting the multiple pressures that enterprises experience from foreign investors. While FO often necessitates greater reporting requirements, it may also create pressure to achieve short-term financial expectations, especially in emerging economies. This uneven impact emphasizes the complexity of foreign investment dynamics impacting company governance and financial reporting procedures.

Earnings quality indicators, which assess the dependability and consistency of financial reporting, have a high correlation with EM. Accruals quality ($\beta = 0.35$, $p < 0.01$) has a positive correlation with manipulation, suggesting that companies with weaker

reporting reliability are more likely to manipulate earnings. Poor accrual quality gives managers more leeway to change reported results, giving potential for manipulation.

Earnings persistence ($\beta = -0.12$, $p < 0.05$) is negatively correlated with manipulation, indicating that enterprises with inconsistent financial performance are more likely to participate in EM. This conclusion reflects the demand on such enterprises to show a solid financial picture to stakeholders. profits smoothness ($\beta = 0.18$, $p < 0.05$) correlates positively with manipulation, indicating that managers may artificially stabilize profits to give the perception of predictable financial outcomes. While smooth results are frequently seen favorably by investors, excessive smoothness might indicate underlying manipulation.

The logistic regression results highlight the multifaceted drivers of EM. Financial variables such as total revenue and net income underline the role of the scale of operation and profitability in determining manipulation behaviors. Among the governance mechanisms, CEO duality and audit committee independence are the most critical, with the concentration of managerial power raising risks and strong oversight reducing them. Foreign ownership characteristics, especially foreign investment, have a dual impact, balancing the benefits of improved reporting standards with the pressures to meet investor expectations.

Lastly, earnings quality metrics provide critical diagnostic tools, where poor accruals quality and excessive smoothness in earnings act as warning signals for possible manipulation. These findings stress the importance of targeted reforms aimed at improving governance, enhancing EQ, and ensuring transparency in financial reporting.

Model Fit and Goodness-of-Fit Statistics

Several critical metrics were used to assess the overall fit and explanatory power of the logistic regression model, including the likelihood ratio test, pseudo-R-squared, and the Hosmer-Lemeshow test. These criteria shed light on the model's capacity to explain variances in EM and its consistency with observed data. The findings are shown in Table 4.20.

Table 4.20: Model Fit Statistics

Metric	Value
Likelihood Ratio (LR)	58.25
p-Value (LR Test)	< 0.001
Pseudo R-squared	0.42
Hosmer-Lemeshow Test	0.72

The likelihood ratio test assesses the overall relevance of the model by comparing the fit of the logistic regression model to a null model with no predictors. The introduction of predictors improves the model's fit considerably ($LR = 58.25$, $p < 0.001$). This research reveals that the financial, governance, FO, and EQ factors together contribute to explaining the likelihood of EM.

The pseudo-R-squared value of 0.42 suggests that the model explains 42% of the variance in the dependent variable, EM. While pseudo-R-squared numbers are not precisely similar to standard R-squared values in linear regression, a value of 0.42 indicates that a logistic regression model has significant explanatory power. This finding demonstrates the model's robustness in capturing the effect of predictors on EM practices.

The Hosmer-Lemeshow test measures goodness-of-fit by comparing observed outcomes to predicted probability. The test statistic produced a p-value of 0.72, suggesting no significant difference between the observed and expected values. This result validates the model's ability to capture the link between the independent factors and the likelihood of EM. A high p-value indicates that the model accurately predicts earnings manipulation without overfitting or underfitting the data.

The combination of these three metrics confirms the validity of the logistic regression model as a means of identifying major determinants of EM. The likelihood ratio test identifies the overall significance of predictors, while the pseudo-R-squared value shows strong explanatory power of the model. The Hosmer-Lemeshow test reinforces that the model is proper with observed and predicted outcomes of the model aligning well.

These findings support the inclusion of financial, governance, FO, and EQ elements as significant drivers of EM. The results provide a rigorous framework for understanding

the dynamics of earnings manipulation, and they guide future analyses targeted at improving governance and financial reporting integrity.

Classification Accuracy and ROC Curve Analysis

The classification results are summarized in Table 4.21, which presents the contingency table of actual versus predicted classifications.

Table 4.21: Classification Accuracy

Actual/Predicted	Yi = 0	Yi = 1
Yi = 0	162	16
Yi = 1	28	88

Overall Accuracy: $\frac{162+88}{162+16+28+88} = 85.2\%$. The model correctly classifies 85.2% of all firms, reflecting strong overall predictive performance.

Sensitivity: $\frac{88}{88+28} = 75.9\%$. Sensitivity measures the model's ability to correctly identify firms engaging in EM. A sensitivity of 75.9% indicates robust detection of managing firms.

Specificity: $\frac{162}{162+16} = 90.1\%$. Specificity reflects the model's ability to correctly classify non-managing firms. A specificity of 90.1% demonstrates strong performance in identifying firms adhering to expected reporting practices.

The Receiver Operating Characteristic (ROC) curve measures the trade-off between sensitivity and specificity at various categorization levels. The area under the curve (AUC) was determined at 0.87, demonstrating strong discrimination between enterprises engaged in EM and those that do not.

An AUC of 0.87 indicates that the model is very capable of distinguishing between managing and non-managing enterprises. An AUC closer to one suggests near-perfect discrimination, confirming the resilience of the logistic regression technique.

4.7 Analysis of Corporate Governance, Earnings Quality, and Foreign Ownership Effects on Earnings Management

This section looks at how company governance structures, EQ criteria, and FO impact EM methods. By including governance indicators like as board characteristics and

FO, as well as foreign ownership dynamics, this research emphasizes the importance of oversight procedures, EQ, and external influences in guaranteeing financial reporting accuracy. The findings highlight how excellent governance methods, strong profits quality, and foreign investment may reduce or increase earnings manipulation.

4.7.1 Influence of Board Characteristics on Earnings Management

Key variables evaluated include board size, board independence, and CEO duality, all of which have a substantial impact on managerial conduct and financial reporting procedures. CG serves as a framework for discouraging EM, and board features are crucial to this.

Board Size and Independence: Larger boards frequently provide varied skills and viewpoints, which improves their capacity to supervise and question administrative choices. Logistic regression study found a negative coefficient for board size (β), indicating that businesses with larger boards are less likely to participate in earnings manipulation. This study supports the concept that diverse and well-structured boards increase oversight and decision-making capacity, encouraging openness.

Board independence is another important factor of governance excellence. Independent directors, who are unaffected by internal managerial interests, provide impartial supervision and hold management responsible. The study found a significant negative correlation between board independence and EM (β), highlighting the need of having a majority of independent directors on boards.

CEO Duality: When the CEO also serves as the chairman of the board, governance processes are weakened and decision-making authority is concentrated. This dualism was highly positively related with EM (β), demonstrating that concentrated authority allows for financial manipulation. These findings underline the necessity for balanced and independent governance systems to successfully prevent earnings manipulation.

4.7.2 Impact of Foreign Ownership on Earnings Management Practices

Foreign Ownership has a substantial impact on profit management since it shows the level of influence held by key owners. High FO frequently improves internal controls because of heightened shareholder attentiveness and a direct stake in long-term corporate performance.

Positive Effects of Foreign Ownership: ANOVA findings demonstrated significant variations in EM probability between companies with high and distributed ownership (F). FO, especially in organizations with active institutional investors, acts as a disincentive to financial manipulation. Institutional investors prioritize accountability and governance changes, as demonstrated by a positive connection between FO and board independence (β).

Majority foreign ownership poses risks because strong shareholders may prioritize personal interests above smaller shareholders, opening the door to earnings manipulation. Majority-owned enterprises are more likely to smooth earnings (β), according to regression models. This modest adjustment matches reported performance with shareholder expectations, demonstrating the two-sided nature of FO.

4.7.3 Role of Foreign Ownership in Curbing or Exacerbating Earnings Management

Foreign ownership brings external constraints, which have a substantial impact on EM techniques. It frequently improves openness, but it can also increase pressures to reach short-term financial objectives.

Mitigating the effects of FO. Foreign investors often demand better reporting requirements and increased transparency, lowering the potential of financial fraud. Logistic analysis revealed a negative relationship between FO and EM (β). FO leads to higher audit committee independence (β) and better compliance with international reporting standards, supporting its role in avoiding earnings manipulation.

Firms with more than 25% FO have greater earnings smoothing ratios (β), reflecting attempts to match reported performance with investor expectations. This dual impact reflects the complicated dynamics of FO in developing nations, where regulatory regimes and investor activism differ. While FO normally limits earnings manipulation, it can be impacted by external influences and local market conditions.

4.7.4 Comparative Analysis between ASE and PEX-Listed Firms

The comparison of EM techniques between businesses listed on the Amman Stock Exchange (ASE) and the Palestine Exchange (PEX) indicates considerable disparities caused by differences in governance structures, FO, and regulatory settings. These

distinctions give useful insights into how regional and contextual variables impact financial reporting quality and earnings manipulation habits.

A crucial aspect of the comparison analysis focused on the impact of governance approaches on EM. Governance frameworks play an important role in preventing earnings manipulation by providing supervision and guaranteeing financial transparency. Board independence, board size, and CEO duality were shown to be key elements impacting governance success in both ASE and PEX-listed enterprises.

Table 4.22: Comparative Analysis between ASE and PEX-Listed Firms.

Factor	ASE Firms	PEX Firms
Board Independence	65%	50%
Board Size (Avg.)	10	7
CEO Duality	25%	38%
Foreign Ownership	17%	11%
Earnings Smoothing (β)	0.15	0.28

Businesses listed on the ASE had much greater levels of board independence than PEX-listed businesses, with ASE firms displaying a stronger commitment to having independent directors on their boards. This disparity reflects the efficacy of Jordan's governance reforms, which require higher levels of independent director involvement on boards. The increased board independence in ASE enterprises can be ascribed to regulatory actions aimed at enhancing governance standards in Jordan.

In logistic regression analysis, an even stronger negative relationship between board independence and EM was found for ASE firms, implying that independent boards are more effective at preventing earnings manipulation. In contrast, the weaker association identified in PEX businesses can be linked to the less strict enforcement of governance rules and the absence of systems that assure director responsibility in Palestine.

Another significant finding was the difference in board sizes between the two exchanges. ASE enterprises had much bigger boards, averaging 10 members, compared to PEX firms, which had an average board size of 7 members. Larger boards often include a wider range of experience, allowing for more effective decision-making and monitoring of managerial operations.

Regression findings revealed that board size had a more significant negative influence on EM in ASE businesses, implying that the variety and pooled experience found on bigger boards might play an important role in maintaining strong governance procedures. In contrast, PEX businesses exhibited a reduced influence of board size on EM, indicating that the smaller boards in these organizations may struggle to provide enough monitoring.

CEO duality, in which the CEO also acts as the board's chairman, was shown to be more common among PEX-listed corporations than ASE-listed companies. In PEX enterprises, 38% of CEOs performed multiple duties, whereas 25% of ASE CEOs did. CEO duality frequently results in a concentration of decision-making authority, which can erode the efficacy of governance measures.

The regression analysis found that CEO duality had a larger positive relationship with EM in PEX enterprises, demonstrating the negative impact of concentrated power in less regulated situations. The ASE enterprises had a reduced prevalence of CEO duality and a stronger regulatory environment, contributing to their improved financial openness.

The analysis of FO provided valuable insights into how external stakeholders impact EM techniques. FO can give organizations with more scrutiny and incentives to conform to international reporting requirements.

On the other hand, the FO structure of firms listed on the ASE was significantly higher than those listed on the PEX. The average FO in ASE firms stood at 17%, while the average for PEX firms was only 11%. This higher FO is reflective of Jordan's more favorable investment climate, fostered by a stable economic environment and the presence of multinational corporations.

The presence of foreign investors in ASE firms promotes adherence to stricter international accounting standards and better governance practices, which, in turn, limits EM. Foreign investors commonly demand more transparency and firmer compliance with financial legislation, hence contributing to reducing earnings manipulation. On the other hand, PEX-listed firms, where FO is lower, do not have that pressure from outside, and thus these firms are more prone to financial misreporting.

Governance practices were found to improve as a result of FO in ASE firms, in terms of the quality of board independence and audit committee. Foreign investors are also responsible for increased accountability and transparency since they generally ensure that their companies adhere to global reporting standards.

On the other hand, PEX firms, bound by geopolitical instability and regulatory limitations, do not attract much foreign investment. This reduces the amount of external scrutiny and the effectiveness of governance mechanisms within Palestine, leading to a higher level of financial misreporting and a less stringent approach toward CG.

Though the beneficial effect of FO on governance and reporting requirements, the research detected some risks related to foreign investment. Both ASE and PEX companies showed the significant positive relationship between FO and earnings smoothing. In this way, the companies attempted to smooth their performance based on investors' expectations.

Quite commonly, investors expect the permanency of firm performance. Profits smoothing strategy may be one way that company used to satisfy the expectations. This means that whereas FO improves governance, it also contributes to pressures that falsify financial performance, but to a lesser extent than in non-foreign-owned enterprises.

The proportion of wages smoothing procedures differed considerably across ASE and PEX enterprises. Earnings smoothing is the technique of adjusting financial results to show a more consistent and predictable performance, typically in order to fulfill shareholder or market expectations.

Prevalence and Drivers: It was found that earnings smoothing was more pronounced in PEX firms than in ASE firms. This difference can be explained by the weaker governance structures, less strict reporting requirements, and economic instability to which PEX firms are subjected. The managers of PEX firms may have more motivation to smooth earnings to present figures that at least meet the expectations of the market or to conceal the impact of economic instability.

On the other hand, ASE firms, which are characterized by FO and strong mechanisms of governance, had a lower likelihood of earnings smoothing. However, even

in the ASE firms, earnings smoothing still occurred, indicating that managerial incentives to meet market expectations may sometimes be stronger than the benefits of transparency.

Implications for Reporting Quality: The higher levels of earnings smoothing in PEX firms indicate a serious problem of reporting quality. By manipulating their financial results to make them appear more stable, firms shake the confidence of investors and mask the underlying true financial health of their companies. This manipulation is ultimately destructive to efficient capital market development and long-term investment.

On the other hand, ASE firms had better reporting quality, partly due to the more robust governance frameworks and the presence of foreign investors. The commitment of these firms to international reporting standards and their limitation of earnings manipulation gives a more realistic view of their financial health and thus inspire investor confidence.

The comparative examination of ASE and PEX-listed enterprises demonstrates the importance of governance, FO, and EM in defining financial reporting methods. ASE enterprises benefit from stronger governance structures, increased FO, and a more rigorous regulatory environment, all of which help to avoid earnings manipulation. PEX businesses confront various problems that impede their financial transparency, including as inadequate governance systems and geopolitical volatility.

Governance Efficiency: Governance efficiency is high for ASE firms due to large and independent boards and strong regulatory enforcement. Such factors lead to a decrease in earnings manipulation opportunities. In the case of PEX firms, governance practices are relatively weaker, specifically with regard to board independence and CEO duality, which offers ample opportunities for managers to engage in EM.

Foreign Investment Impact: As would be expected, FO stabilizes ASE firms by enhancing conformity to international standards and reductions in earnings manipulation. For PEX firms, there is low foreign investment which restricts the element of external scrutiny and lowers pressure to improve governance practices.

Reporting Quality and EM: The differences in smoothing earnings practices between ASE versus PEX firms reflect two important facilitators of high-quality financial reporting: good governance mechanisms and foreign investment. Accordingly, ASE firms

enjoy better governance and FO, translating to lower levels of manipulation of earnings, while the firms from PEX have higher instances of earnings smoothing and reduced reliability in reporting.

The comparative analysis underlined large significant differences in the governance practices, FO, and EM behaviors between ASE and PEX-listed firms. Although ASE firms benefit from a strong governance framework, high FO by foreigners, and close regulation, PEX firms are afflicted with poor governance structures and geopolitical instability. These findings indicate that targeted reforms should be done to improve the levels of transparency and accountability in countries like Palestine. Addressing these challenges would help improve investor confidence and attain sustainable economic growth in both markets.

4.8 Discussion of Results

This section summarizes the study's principal results, placing them within the larger context of financial reporting procedures in the Amman and Palestine Exchanges. The findings are analyzed in light of previous research, emphasizing their theoretical and practical consequences and presenting actionable policy recommendations to enhance financial reporting quality.

4.8.1 Interpretation of Findings in the Context of Amman and Palestine Exchanges

The comparative analysis between firms listed on the Amman Stock Exchange (ASE) and the Palestine Exchange (PEX) reveals significant differences in governance, FO, and EM practices. ASE firms, representing 60% of the sample (180 firms), demonstrated stronger governance frameworks, with higher board independence (65% vs. 50% in PEX), larger board sizes (10 vs. 7 members), and lower CEO duality (25% vs. 38%). FO was significantly higher in ASE firms, averaging 17% compared to 11% in PEX firms, enhancing adherence to international reporting standards and reducing earnings manipulation ($\beta = -0.25$, $p<0.01$). In contrast, PEX firms exhibited weaker governance and higher earnings smoothing ratios ($\beta = 0.28$, $p=0.02$) due to geopolitical instability and less stringent regulatory environments. These findings highlight the need for targeted reforms in PEX to improve transparency, attract foreign investment, and strengthen governance frameworks, while emphasizing the importance of sustaining robust governance practices in ASE-listed firms.

This study observed significant differences in the practices of EM between listed firms on ASE and PEX, reflecting differences in structures of governance, foreign ownership, and regulatory environments. It was expected that, as compared to PEX firms, those listed in ASE would reflect more prominent governance features like increased independence in boards and foreign ownership; EM is lower in ASE. The logistic regression analysis indicated that board independence was negatively related to earnings manipulation in ASE firms. These findings support the work of Al-Haddad and Whittington (2019), who noted the positive effect of strong mechanisms of CG in reducing EM practices in Jordan.

In contrast, PEX-listed companies had distinct hurdles because to geopolitical instability and less severe regulatory scrutiny, resulting in larger earnings smoothing ratios and a greater incidence of EM strategies. These findings imply that, while PEX businesses' governance structures are less effective, targeted reforms and more foreign investment might reduce earnings manipulation. The influence of FO in lowering EM is consistent with prior research (Leuz & Verrecchia, 2000), which imply that external monitoring can positively impact financial reporting standards.

These discriminant analysis and logistic regression models develop an advanced knowledge of EM strategies in the industrial enterprises listed at the Amman Stock Exchange (ASE) and Palestine Exchange (PEX). From the results of regression, significant associations are established between CG, FO structure, and EQ with regard to the probability of taking part in EM.

For instance, CEO duality with a coefficient of 0.45 has a significant positive association with EM, which implies that enterprises whose CEO is simultaneously the board chairman are more likely to manipulate results. In addition, EQ metrics such as accrual quality and earnings smoothness are considered important factors in detecting financial fraud.

These statistical findings will provide important insights into governance frameworks and regulatory procedures for the betterment of emerging markets such as Jordan and Palestine, where CG systems may be weaker than in industrialized nations. It argues that increasing board independence and the involvement of audit committees might lower the likelihood of earnings manipulation.

This comparison demonstrates how important the institutional and regulatory environment are in affecting governance effectiveness and financial transparency. In the case of ASE, for example, a more stable investment climate and stricter governance systems may significantly improve financial reporting processes.

4.8.2 Comparison of Results with Prior Studies

The results of this study are an extension of the state of contemporary research on the detection of EM. The current research brings to the fore that the traditional models, like the Beneish M-Score, are still very relevant, while infusing new perspectives through the incorporation of governance, FO, and EQ variables, which have taken center stage in most recent studies, especially in emerging markets like Jordan and Palestine.

The confirmation of UCE as a key indicator of classification shifting supports the findings of recent studies such as Malikov et al. (2018) and Maniatis (2022), who have emphasized the role of classification shifting in detecting subtle forms of earnings manipulation. Using data from this study, 39.46% of firms showed signs of classification shifting and thus proved the relevance of the models, such as the Beneish M-Score, for identifying earnings manipulation. These findings support research by Hołda (2020) and Boni et al. (2023), who also prove the efficiency of traditional models in a wide context, taking into consideration that EM methods became more sophisticated.

One of the main contributions of this study is that it incorporates governance and foreign ownership variables in the detection of EM, which differentiates it from earlier research studies that focused on financial metrics. For instance, the strong negative relation of audit committee independence and earnings manipulation is in corroboration with the findings documented by Adams et al. (2005) and extended recently by Zhao and Wang (2021) on the significant impacts governance mechanisms make to the quality of financial reporting. Wang and Xu (2021) also find that board independence plays a very important role in mitigating EM. They find that effective governance reduces managerial opportunism and, hence, reiterates the importance of balanced governance structures in curbing earnings manipulation.

Another important factor for the detection of EM was FO, where our findings support recent studies such as Li, Lam, and Tam (2020) and Han, Ding, and Zhang (2022), who have documented that foreign ownership leads to increased transparency and hence

reduced earnings manipulation. This study extends the literature by focusing on the nuanced role of FO in emerging markets. While FO generally encourages transparency, it can also bring pressures for short-term performance targets that may subsequently result in earnings smoothing, as found in this study. This dual influence of FO is in line with the findings of Al-Duais et al. (2022), who show that FO may either weaken or strengthen EM depending on the regulatory environment and cultural context.

The relationship between EQ and financial manipulation has been discussed in the literature at large, with studies such as Bartov, Gul, and Tsui (2018) and Chen and Zhang (2020) confirming that low EQ is strongly associated with increased EM. This study corroborates those findings by identifying lower accruals quality and higher earnings smoothness as key indicators of manipulation. The use of accrual-based metrics in detecting manipulation has been further asserted across industries by Khatun, Ghosh, and Kabir 2022; Fernandes et al., 2021, among other works. Such studies highlight the usefulness of such metrics but at the same time emphasize that integrating advanced analytics will further enhance the accuracy of EM detection.

Detection frameworks have also been developed through literature, whereby Maniatis (2022) and Asgari Alouj (2020) present the potential of machine learning and artificial neural networks in refining EM detection models. Although this study does not directly incorporate these technologies, it recognizes their growing importance and points out that future research could further improve the detection capability by embedding such advanced techniques. Application of machine learning in EM detection, as was realized by Sitanggang et al. (2020), is highly promising and can easily detect patterns and anomalies that might be difficult or impossible to find using the traditional approach. Also, including psychological and situational factors, as suggested in the works of Sitanggang et al. (2020) and Narsa, Afifa, and Wardhaningrum (2023), may provide more detail on the motives of earning manipulation.

This is also in line with the contextual relevance of the study, which compared firms listed on the Amman Stock Exchange and Palestine Exchange to bring out significant differences in governance practices and regulatory environments. These findings corroborate the results of El Diri, Lambrinoudakis, and Alhadab (2020), who found that concentrated markets contribute to a decrease in earnings manipulation. These challenges, geopolitical instability, and weaker regulatory oversight, faced by the firms in PEX are

similar to those identified by Chowa 2022 on the Lusaka Securities Exchange and Narsa et al. 2023 in Indonesia. The study has shown that regulatory frameworks should be improved if financial reporting quality is to be promoted in emerging markets.

Further, the role of regulatory environments and global accounting standards, especially the adoption of International Financial Reporting Standards, has been discussed in recent studies such as Hashed and Almaqtari (2021). This study also finds that while IFRS adoption promotes greater transparency, the effectiveness of such standards is context-dependent. The findings suggest that for markets like Jordan and Palestine, where regulatory enforcement is less stringent, more efforts are needed to ensure that IFRS guidelines are fully integrated into corporate reporting practices. This idea is further supported by studies such as Li, Lam, and Tam (2020), who have emphasized the role of international standards in enhancing transparency, particularly in markets characterized by weaker oversight.

Finally, this study contributes significantly to the literature on EM in emerging markets. Focusing on the unique economic and regulatory environments of Jordan and Palestine, this research extends the findings of Al-Haddad and Whittington (2019) and Hamdan (2023), who emphasized the role of CG in mitigating earnings manipulation. Besides, by embedding the role of FO into EM detection, this research will contribute to the more nuanced understanding of the effect of external scrutiny on corporate financial practices. This paper is based on and complements the studies by Leuz and Verrecchia (2000) and Sun, Cai, and Wang (2019) with a meaningful insight on how governance, FO, and EQ can be incorporated into an integrated model for earnings manipulation detection.

Therefore, the research also supports modern research and goes beyond studies into the EM detection process by integrating governance variables, FO, and the EQ model in complementing traditional financial measures toward earnings manipulation. This research further informs an increasingly sophisticated development of models for detection, while setting actionable insights for regulators, auditors, and investors in efforts toward the improvement of financial reporting practices and quality of CG in emergent markets. Future studies can extend this study's findings by using advanced analytics and machine learning techniques for better refinement of detection models and consideration of complex dynamics of EM across different regulatory and cultural contexts.

4.8.3 Theoretical and Practical Implications of the Findings

Theoretically, the study contributes to the literature by including variables of CG, EQ and FO in the EM detection models. Although earlier models were focused mostly on financial metrics, the addition of these dimensions of governance and FO underlines the multidimensional nature of earnings manipulation. This paper extends theoretical frameworks of EM and corporate accountability by showing that financial metrics alone cannot capture the full complexity of earnings manipulation.

Practical implications pertain to actionable insights regulators, auditors, and investors may draw from these results. The profound significance of board independence and the effectiveness of the audit committee towards reduced earnings manipulation evidences an exigency for more intensified governance reforms. For example, regulators in PEX should consider demanding higher levels of independent directors and demanding broader disclosure of audit practices-a recommendation also made by Al-Haddad and Whittington (2019) in their study of Jordanian firms.

These findings can be used by investors, especially institutional and foreign investors, to demand better governance structures in companies where they have a significant stake. The study also emphasizes the potential for EQ metrics, such as accruals quality and earnings smoothness, to strengthen the detection capabilities of auditors.

4.8.4 Policy Recommendations for Improving Financial Reporting Quality

Some policy recommendations to improve the quality of financial reporting and reduce EM practices emanate from the findings of this study.

- Strengthen Governance Mechanisms: Require minimum levels of board independence and ensure the segregation of the CEO and board chair positions to reinforce accountability. This recommendation is supported by the work of Al-Haddad and Whittington (2019), who found that strong governance frameworks reduce EM.
- Regulatory Oversight: Stricter reporting standards, regular audits, and penalties for non-compliance will be imposed. Harmonization of governance practices and reporting requirements between Jordan and Palestine can provide more consistency and transparency across both exchanges.

- Encourage Foreign Investment: Design policies that attract foreign investors through transparency and the integration of reporting practices with international standards. The encouragement of foreign ownership in PEX firms may bring external discipline to help reduce earnings manipulation.
- Advanced Detection Models: In a world with classification shifting and EQ metrics, auditors and regulators can be trained to apply new ways of manipulation detection. Moreover, data analytics investment will pay off through more effective and efficient reviews of financial reporting, as was shown recently with advances in the detection technology by Fernandes et al. (2021).

4.8.5 Contributions to the Literature on Earnings Management

This study makes several key contributions to the literature on EM: it extends traditional detection models, such as the Beneish M-Score and classification shifting models, by incorporating governance and FO variables, thus allowing for a more holistic approach to the detection of earnings manipulation practices.

Second, the paper fills the gap in prior literature through the focus it places on emerging markets. The paper targets the emerging markets of the Amman and Palestine Exchanges. More often than not, prior literature has targeted developed economies alone, thereby creating a gap with regard to an understanding of the peculiar dynamics of EM in relatively unregulated markets. In emphasizing governance and FO structures in both contexts, the study will provide a framework for analytical work in similar emerging markets.

This has enriched the existing detection framework through the integration of EQ metrics like accruals quality and earnings smoothness. Such metrics provide rich detail with regard to the reliability of financial reporting, thus aiding auditors and stakeholders in more correctly identifying manipulation.

This section presents the study's main findings, underlining their implications for theory, practice, and policy. By placing the results in the context of the Amman and Palestine Exchanges, comparing them with previous studies, and offering recommendations that can be acted upon, this study has highlighted the importance of governance and foreign ownership structures in improving financial transparency and

reducing EM. The contributions to the literature and the proposed policy measures provide a roadmap for improving financial reporting quality in emerging markets.

4.9 Summary of the Chapter

This chapter summarized the study's findings, thoroughly examining EM techniques and the impact of governance structures, FO patterns, and EQ on financial reporting outcomes. The chapter used logistic regression, discriminant analysis, and comparative evaluations to get an integrated knowledge of EM drivers and detection models' efficacy. These findings not only highlight the intricate factors that underpin management conduct, but they also give meaningful advice in the attempt to strengthen CG and regulatory frameworks.

4.9.1 Recapitulation of Key Findings

Several important findings of the study revealed and enhanced the current understanding of EM practices. CG emerged as the pivotal determinant, wherein the board characteristics like independence and size emerged as of essence in repressing earnings manipulation. Firms with more independent boards were found to have a significantly reduced likelihood of engaging in EM, emphasizing the importance of objective oversight. On the other hand, CEO duality was strongly associated with increased manipulation, reflecting the risks from concentrated managerial power. These results support the need for balanced governance structures that emphasize transparency and accountability.

Another important factor of EM was foreign ownership. Firms with higher FO had lower incidences of manipulation due to better external scrutiny and demands for its compliance with international reporting standards, but FO also instigated pressures for meeting short-term targets for performance, which induced subtle forms of manipulation-sometimes earnings smoothing. These contradictory effects underpin how foreign investors both dampen and amplify earnings manipulation, contingent upon the particular circumstances at play. Indicators for EQ, including accruals quality and smoothness, significantly predicted the manipulation of earnings.

Firms with lower accruals quality and higher earnings smoothness ratios demonstrated a greater propensity for financial manipulation, underscoring the role of

these metrics in identifying reporting irregularities. The comparative analysis between firms listed on the Amman Stock Exchange (ASE) and the Palestine Exchange (PEX) further highlighted the influence of regulatory environments and economic conditions. In particular, ASE firms are enjoying superior governance practices coupled with greater FO, with relatively low levels of earnings manipulation than in PEX firms operating within a geopolitical milieu of turmoil and less effective regulation.

4.9.2 Limitations of the Study

While this study has contributed to the current literature, it also has some limitations. Access to private datasets-such as internal audit reports or confidential managerial disclosures-would provide greater depth into these phenomena. Moreover, the focus of the study on the ASE and PEX limits its generalizability to other markets, especially those in developed economies with different regulatory frameworks and investor dynamics.

Other challenges that emerged included limits on measurement. Whereas accruals quality and earnings smoothness are common proxies for earnings quality, they might not actually represent the nature of the manipulative practice of financial reporting. While useful indicators, these measures need support from other indicators for proper supplementation. Also, the research design used primarily cross-sectional data to examine EM practices at one point in time without accounting for dynamic changes in governance structures, FO patterns, or regulatory environments.

4.9.3 Suggestions for Future Research

Future studies can overcome the limitations of this study by using longitudinal designs to investigate how changes in governance structures and FO patterns affect EM over time. This would give a fuller understanding of the temporal dynamics underlying financial reporting practices. The generalizability of findings and cross-market comparisons would also be enhanced by expanding the geographical scope of analysis to include firms from developed economies or other emerging markets.

Qualitative data, such as interviews with board members, auditors, and regulators, may complement quantitative analyses and provide rich insights into governance practices and managerial behavior. The use of advanced detection models, including

machine learning and artificial intelligence, significantly improves the potential to identify patterns of earnings manipulation in large datasets. These tools could enhance the precision and scalability of EM detection frameworks.

Other directions could be sector-specific analyses. Governance challenges and reporting norms differ across industries, which may impact the extent and nature of EM practices. Understanding these sectoral variations could provide more nuanced insights into governance reforms and regulatory interventions. Finally, further research should be done to improve earnings quality metrics by incorporating them with sophisticated statistical models for more robust tools in detecting and mitigating financial manipulation.

This chapter synthesized the study's findings in great detail, placing a strong emphasis on their implications for theory, practice, and policy. By studying the impact of governance, FO, and earnings quality on EM, this research provides useful insights into improvements in financial transparency and accountability. Limitations of the study and directions for future research suggest the need for continued exploration and refinement of detection models to address evolving challenges in financial reporting, both in emerging and developed markets.

Chapter Five: Conclusion and Recommendations

5.1 Introduction

The concluding remarks in this chapter summarize the key conclusions and implications for financial reporting and governance and offer practical policy recommendations for policymakers, practitioners, and future researchers. The integrated approach with the models for the detection of earnings management helps add more nuance to the dynamics of financial manipulation, where dimensions of corporate governance, foreign ownership, and earnings quality are linked and studied. This study significantly improves financial reporting practices and the detection framework in emerging markets, such as the Amman Stock Exchange and the Palestine Exchange, while considering the complications due to those variables.

These findings imply that there is a capacity for improved regulatory practices, better corporate accountability, and increased transparency in the financial markets. While global financial markets are constantly in flux, emerging economies like Jordan and Palestine have specific challenges that are considerably dissimilar to those in the developed economies, and it is for this reason that the findings of this research are most applicable to practitioners, regulators, and researchers who seek an understanding of and a remedy for earnings manipulation in these areas.

5.2 Summary of Findings

The results from this study shed significant light on the phenomenon of earnings management in Jordanian and Palestinian corporates. One important finding is that corporate governance is a main suppressor of earnings management. Mechanisms of governance, especially board independence and audit committee effectiveness, were identified as significant determinants that lower the likelihood of managing earnings. Companies with independent directors and well-structured audit committees were much less likely to manipulate their financial results. This is consistent with the broader corporate governance literature that argues that effective monitoring is critical in preventing opportunistic behavior and promoting transparency in financial reporting.

Conversely, CEO duality emerged as one of the most relevant risk factors that increase the likelihood of earnings manipulation. CEO duality, in which the chief executive also serves as the board chair, allows too much power to be vested in one individual, undermining effective oversight by boards. This environment allows the CEO to manage earnings with minimal oversight, further justifying the importance of adequately separating executive and oversight roles in the corporate governance structure. These results support the view that balanced governance mechanisms, which characterize transparency and accountability, are instrumental in lowering earnings management activities.

Another critical factor that was taken up for study in the analysis was earnings quality. Firms with lower accruals quality were seen from the findings to manipulate their earnings. Accruals quality is an indicator that shows the reliability of financial reporting, and poor accruals quality firms manipulate their earnings by adjusting the various accruals accounts in attempts to attain certain targets. These findings highlight the need for transparent and accurate financial reporting to mitigate the potential for manipulation. As another example, the study found a positive relationship between earnings smoothness and earnings manipulation, indicating that if a firm adopts a policy of artificially smoothing its earnings, it is more likely to disguise the occurrence of abnormal returns. Finally, these metrics are well suited to uncovering covert forms of earnings management that are not readily discernible from standard financial ratios and, thus, provide a broader lens for accessing manipulation.

The study also considered the role of foreign ownership in earnings management. It found that higher foreign ownership levels were correlated with less earnings manipulation, as these companies faced higher external scrutiny and paid more attention to international financial reporting standard compliance. Foreign investors tend to raise standards for transparency and compliance, resulting in more accurate financials or reporting. The same study found that foreign ownership may additionally provide an added impetus for firms to reach financial targets in the short run, which can lead them to engage in more subtle manipulative practices, such as earnings smoothing. To properly evaluate the circumstances through which foreign ownership has dangerous effects, we must remember this double-edged role foreign ownership has, in that it can

simultaneously minimize or maximize the threat of manipulation, bearing in mind the environment in which it occurs.

Again, this was reflected in the comparative assessment of industries in both ASE and PEX, which considered both governance and regulatory environments. On the other hand, firms listed on ASE enjoyed higher governance frameworks and foreign investments, but their earnings showed more conservativism than aggressive. By contrast, companies trading on PEX, which suffer from geopolitical uncertainty and poorer regulatory scrutiny, show more excellent manipulation. The results highlight the importance of both the regulatory climate and corporate governance structures in shaping financial reporting practices in emerging markets.

5.3 Theoretical Contributions

This dissertation contributes significantly to the theoretical literature on earnings management in several ways. A significant contribution has emerged from a more integrative detection framework, integrating governance, ownership, and earnings quality with traditional financial models. The potential of financial metrics in predicting earnings manipulation is best exemplified through historical earnings management detection models, such as the Beneish M-Score and classification shifting models. However, these models have neglected the additional complication of broader organizational and property contexts that can modify manager behavior. This gap is filled by this study, where governance and ownership variables are included in the frameworks for detecting earnings management, leading to a more nuanced understanding of financial manipulation factors.

This study contributes to the existing knowledge by extending the traditional models to consider governance variables like board independence and audit committee effectiveness. The results suggest that specific governance arrangements, such as the board's independence and the audit committee's effectiveness, are likely to reduce earnings manipulation. This reinforces the interrelation between organizational structures and financial practices, highlighting their role in shaping the integrity of financial reporting. Moreover, the paper's theoretical contribution is deepened by considering foreign ownership, offering insights that foreign investors can play an active role in

driving domestic companies towards more transparent and sustainable corporate finance practices and, in anecdotal instances, demanding delivery on key performance indicators.

This dissertation also makes a meaningful theoretical contribution through its attention to the specific context in which emerging markets are located. However, there has been limited focus in the literature on earnings management in developing economies, including Jordan and Palestine, where inherited challenges for earnings management coexist alongside unique opportunities. The study sheds light on the influence of local institutional determinants of earnings management behavior by exploring governance and financial practices in these areas. Such a contextualized approach provides a boon to the literature, which has largely neglected the dynamics of earnings management in underexplored regions. Including metrics for earnings quality, like accruals quality and earnings smoothness, bolsters the theoretical framework, providing an advanced discussion on the relationship between reporting reliability and financial manipulation.

5.4 Practical Implications

For practitioners, this study is highly relevant for regulators, auditors, and corporate stakeholders. The results highlight the importance of more rigorous governance mechanisms to lower earnings manipulation and improve financial reporting transparency. Since institutional investors play an important role around the globe in corporate governance, regulators in emerging markets should focus on improving the corporate governance framework itself by working to increase the degree of board independence, separating the roles of the CEO and the chairperson of the board, and promoting the establishment of a proficient audit committee. The comprehensiveness of governance is a reform that will prevent the concentration of power with one or a few people, thereby enabling more effective supervision of financial reporting practices. It will thus limit the chance to game the earnings numbers.

It should also consider stricter penalties on firms for failing to comply with financial disclosure rules. The regulators should encourage the adoption of international financial reporting frameworks such as IFRS, as this has been proven to enhance the transparency and quality of financial reporting. Promulgating global standards will create a level playing field in which companies face uniform and stringent reporting imperatives that will reduce accruals management and improve confidence; Implications for Auditors: The

insights of this study can be beneficial to the auditors in terms of using the measures of earnings quality in their audit programs. So, auditors, in particular, should adopt accruals quality and earnings smoothness measures in their analysis to identify subtle forms of earning manipulation that often are not captured by traditional financial ratios. Machine learning and data analytics are advanced detection tools that can help achieve greater accuracy and efficiency of audits. This would help auditors examine large datasets and identify patterns of manipulation with advancements in today's scalable detection tools to identify EM in multiple jurisdictions.

To investors, the results suggest that investors need to factor in indicators of governance and earnings quality in their investment decisions. In this context, institutional and foreign investors can help in demanding more sophisticated governance and transparency in financial reporting among the firms in which they invest. They will thus be able to make prudent decisions that will add to long-term financial stability and sustainability if investors focus on governance structure and earnings quality when analyzing the investment performance of listed firms. Results indicate that investors should be proactive in engaging with firms to promote the adoption of best practices in corporate governance and financial reporting.

5.5 Policy Recommendations

These findings imply that, in emerging markets, there is a great need for focused policy reforms in the areas of governance strengthening and financial reporting quality. The following are some policy recommendations:

1. **Governance Reforms:** Policymakers must focus on including independent directors on the boards and ensure the separation of executive and oversight roles. Audit committees manned by financial experts will then be able to oversee the financial reporting practices effectively. In this respect, the scope for earnings manipulation will dwindle as these reforms enhance accountability and increase transparency.
2. **Foreign Investment Policies:** These should incentivize foreign investors to enter local markets. At the same time, policymakers should ensure that foreign investors face the most rigorous financial accounting standards. More foreign investment can also help bring international scrutiny to bear on firms' financial practices and

enhance further transparency. However, a balance must be struck to prevent undue focus on quarterly results.

3. **Cross-Border Collaboration:** Regulators in developing Persistence should cooperate with relevant counterparts to converge on virtuous regulatory practices and guarantee that firms are aligned with global reporting standards. This will create a culture of accountability and go a long way in resolving inconsistencies in financial statements.
4. **Educational Initiatives**: Policymakers should encourage educational initiatives on governance and reporting best practices. Auditors, regulators, and corporate executives should be trained in advanced detection models and best practices in corporate governance. These programs will increase capacity, and guarantee stakeholders are prepared to meet the needs of the ever-evolving landscape of trickery and deceit.

5.6 Comparison with Key Previous Studies and Contribution of the Study

This study significantly illuminates earnings management dynamics in the Palestine Exchange (PEX) and the Amman Stock Exchange (ASE). It adds something special that improves our knowledge of profit management in emerging economies and validates and expands on important discoveries from recent research.

It is not easy to controvert the assertion that corporate governance reduces the level of earnings management. The research conducted by Al-Haddad and Whittington (2019) bears out this point in the case of Jordan, a developing economy. They found that by ensuring board independence and effective audit committees, both accrual and real earnings management could be significantly controlled. On the same note, Hashed and Almaqtari (2021) also appreciated that at least in the case of Saudi Arabia, their findings indicated that the earnings quality improved while earnings management activities reduced due to strong governance mechanisms.

Their findings, in turn, build on earlier work done by Khoury (2020), who has found that factors influence the extent of earnings management, particularly the role of CEO duality. For instance, Al-Haddad and Whittington (2019) only explored the relationship between structures of governance and the practice of earnings management, which left out the argument that in some situations, mandating checks and balances may stunt some

decision-making processes that are critical in business. This is where, for the current study, the topic of CEO duality becomes important to how governance structures impact decision-making flexibility.

This study confirms that earnings quality is a critical predictor of earnings manipulation. The findings support the findings of Bartov, Gul, and Tsui (2018), who found a correlation between higher manipulation and lower earnings quality. This study also indicates that firms that use profit smoothening tend to deviate from their published financial reports. This corroborates Fernandes et al.'s (2021) heightened importance of earnings smoothness as a manipulation signal. This paper proposes that earnings smoothness should be evaluated as an additional incentive to detect earnings manipulation. This gives a deeper understanding of the role of earnings quality in reporting processes, building upon prior research.

This finding is consistent with Li, Lam, and Tam (2020) about foreign ownership, who indicated that foreign ownership removes manipulation of profits because of increased scrutiny from external parties. However, it also adds depth to this conclusion by showing pressures created by foreign investors' attention to short-term financial performance targets that can lead to more subtle means of manipulation, like earnings smoothing. Han, Ding, and Zhang (2022) empirically verified this opposing impact of foreign ownership on EM, noting that foreign ownership could urge the management staff to manage the profit to meet investors' expectations while positively impacting financial transparency in Chinese companies. This study expands on these findings by demonstrating how these pressures manifest in different emerging market scenarios—namely, in the ASE and PEX.

Utility listed on the ASE had fewer earnings manipulation due to better governing performances and more foreign ownership found in an examination between the ASE and PEX utilities (Abu Hasan , 2012). On the other hand, PEX businesses faced more challenges due to laxer regulatory control, leading to much more profit manipulation. These findings corroborate those of Khatun, Ghosh, and Kabir (2022), who did a study in the context of the banking sector in Bangladesh and found that firms that operated in areas with higher political instability and laxer governance frameworks were more likely to engage in EM. Using a close comparative analysis of the two emerging markets, Palestine and Jordan, in combination with an analysis of specific regulatory, governance

and geopolitical issues facing them, this study draws upon their work. It offers new insights into the comparative phenomenon of earnings management in these markets.

This study contributes to the literature and emerges as a more comprehensive approach than traditional models such as the Beneish M-Score by integrating governance, ownership, and earnings quality dimensions into EM detection models. Previous research focused on indicators of a financial nature (Dechow & Schrand, 2004; Beneish, 1999) without consideration of ownership and organizational dimensions. This study contributes to the existing literature by considering ownership and governance variables as the model is constructed, revealing significant interactions between the structural elements and financial reporting mechanisms. Combining these elements makes the model more resilient and valuable in various developing market contexts.

The study also differs from existing research by examining the two-sided effects of foreign ownership. While previous studies have explored how foreign ownership affects profit management Li, Lam , and Tam (2020)—the current research confirms that the effects of foreign ownership are not unambiguous. In some cases, it can reduce earnings manipulation; however, in other cases, it may exacerbate manipulation, as when foreign investors favor short-run outcomes. This nuanced understanding will advance the existing body of research on foreign ownership and earnings management and contribute another dimension toward understanding the complex nature of foreign investors in emerging economies.

They present a more comprehensive framework for understanding and detecting EM by incorporating governance, ownership, and earnings quality into the equation. The literature extends what is conventional in detection models and offers a more nuanced examination of factors that affect earnings manipulation in developing economies. While going beyond the existing literature on earnings management, combining these dimensions provide valuable insights for investors, auditors, and policymakers to improve financial transparency and mitigate the risk of market manipulation.

5.7 Limitations and Future Research Directions

Although this study has several sound findings, it also possesses some limitations that must be considered. Firstly, the in-depth research was constrained by the utilization of publicly accessible data. Internal audit reports and private managerial disclosures were

unavailable, providing more detailed insights into governance practices and earnings management. Moreover, the exclusive focus on companies listed on the ASE and PEX limits the applicability of the findings to other markets, particularly those in industrialized countries with different regulatory settings.

This study's cross-sectional nature does not consider possible structural changes prior to 2025 in the ownership structure, governance structure, or the financial attractiveness of financial reporting. Longitudinal studies examining how altered ownership dynamics, governance constructs, and earnings quality shape earnings management over time will be helpful for neonatologists in future research. This would give us a more dynamic rather than static sense of how these factors influence financial reporting in different legal and economic contexts. A study of companies in affluent economies or expanding the geographic scope to more emerging countries for comparison may enhance our understanding of the prevailing differences in profit management practices.

It could be improved with additional qualitative data (interviews with board members, auditors, and regulators) that complements the quantitative findings and provides a fuller understanding of managerial behavior and governance processes. Lastly, there is plenty of room for enhancing the efficiency and scalability of the EM detection models by exploring new-generation analytical techniques such as artificial intelligence and machine learning.

Hence, this study provides a comprehensive framework for analyzing and detecting EM in developing markets by incorporating governance, ownership, and earnings quality into models that only previously accounted for financial metrics. It also adds to debates on the future of financial openness and accountability, understood theoretically and practically. The findings underscore how robust governance frameworks, foreign investment, and creative detection methods can dampen the probability of earnings manipulation. The aim is to achieve this through targeted reforms and educational efforts while collaborating with academics, practitioners, and policymakers on their shared efforts to improve the quality of financial reporting, thereby contributing to a better and more stable international financial market.

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تطوير نموذج Beneish للكشف عن إدارة الأرباح: دراسة تحليلية لدور الحوكمة المؤسسية وجودة الأرباح والملكية الأجنبية

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ملخص

يتناول هذا البحث ممارسات إدارة الأرباح في البيئات المالية لكل من الأردن وفلسطين، حيث يحلل العلاقة بين الحوكمة المؤسسية وجودة الأرباح والملكية الأجنبية. يهدف البحث إلى تطوير نموذج أكثر دقة للكشف عن التلاعب في الأرباح مقارنة بنموذج Beneish M-Score، من خلال استخدام مقاييس جودة الأرباح، وآليات الحوكمة المؤسسية، وبعض النسب المالية الشائعة. يهدف النموذج الجديد إلى الكشف عن التلاعب في الأرباح ضمن سياقات اقتصادية أكثر تنوعًا.

شملت الدراسة 30 شركة صناعية مدرجة في بورصة عمان و11 شركة مدرجة في بورصة فلسطين خلال الفترة ما بين 2017 و2023. استخدمت الدراسة أساليب تحليلية مثل التحليل التمييزي والانحدار اللوجستي لتحديد النسب المالية، وعوامل الحوكمة، ومؤشرات جودة الأرباح التي تؤثر بشكل مباشر على إدارة الأرباح. كما تتناول الدراسة تأثير الملكية الأجنبية على ممارسات إعداد القوائم المالية وما يترتب على ذلك من آثار على الشركات متعددة الجنسيات.

أظهرت النتائج أن الحوكمة المؤسسية القوية وجودة الأرباح العالية تقللان بشكل كبير من التلاعب في الأرباح. ونظرًا للخصوصية الاقتصادية لكل من الأردن وفلسطين، تسلط الدراسة الضوء على أهمية وضع إطار واضح لتنظيم العمل ومواجهة التحديات المالية. وقد أظهرت النتائج تحسنًا كبيرًا في الأداء، متفوقًا على نموذج Beneish M-Score التقليدي في القدرة على التنبؤ بالتلاعب في الأرباح، مما يعزز من الشفافية والثقة في السوق والامتثال للأنظمة.

الكلمات المفتاحية: إدارة الأرباح، الحوكمة المؤسسية، جودة الأرباح، الملكية الأجنبية، التقارير المالية.