BOARD GOVERNANCE AND OWNERSHIP STRUCTURE AS MECHANISMS TO OVERSIGHT EARNINGS MANAGEMENT: INSIGHTS FROM AN EMERGING MARKET

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OPEN ACCESS

How to cite this paper: Turshan, M. N. (2025). Board governance and ownership structure as mechanisms to oversight earnings management: Insights from an emerging market. *Corporate Board: Role, Duties and Composition, 21*(1), 17–30. https://doi.org/10.22495/cbv21ilart2

ISSN Online: 2312-2722
ISSN Print: 1810-8601

Received: 11.10.2024
Accepted: 24.01.2025

JEL Classification: G32, G34, M48
DOI: 10.22495/cbv21ilart2

Abstract

This paper investigates the effectiveness of board governance and ownership structures as mechanisms to mitigate earnings management in Palestinian non-financial firms. By analyzing the relationship between board effectiveness and ownership structure on earnings management across 27 companies listed on the Palestine Stock Exchange (PEX) from 2018 to 2022, the study employs multiple regression analysis to derive its findings. The study concludes that Palestinian non-financial companies participate in earnings management, often shaping financial statements to align with management objectives. Family ownership is identified as the most significant factor in reducing earnings management, as higher family ownership typically involves more oversight of management behavior. Board independence also plays a key role, as independent directors effectively monitor executive activities, enhancing performance. Companies audited by the Big Four experience less earnings management due to the quality audit services provided by these firms. Based on these findings, several recommendations are proposed: companies should increase board independence with a higher proportion of independent directors, reduce board size for improved communication, and ensure productive board meetings through structured agendas. Policies supporting family ownership structures and encouraging institutional investor involvement in governance could further enhance transparency. Additionally, engaging high-quality audit firms should be a priority due to their association with lower earnings management. Future research could explore cross-country comparisons, longitudinal studies on governance changes, sector-specific analyses, and qualitative studies on the motivations behind earnings management practices, providing deeper insights into the relationship between corporate governance and earnings management.

Keywords: Earnings Management, Board of Directors' Effectiveness, Board Governance, Ownership Structure, Palestine Stock Exchange

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

1. INTRODUCTION

The recent expansion of trade, both within and across borders, has increasingly driven companies to engage in earnings management, often tailoring financial results to suit the regulatory and economic climates of the regions in which they operate. This earnings management leads to financial statements that may not accurately reflect the company's actual performance, resulting in potentially misleading information that can affect abnormal stock returns. Managers exploit the flexibility within accounting standards to serve self-interests by adjusting reported earnings through discretionary accruals and other accounting choices, which can obscure actual business results (Jones, 1991).

Over the past decade, the global economy has witnessed several high-profile cases of data and financial statement manipulation, leading to the collapse of major corporations such as Enron and WorldCom. These crises primarily stemmed from the deliberate inflation of financial statements, significantly exaggerating reported earnings and misleading stakeholders. Consequently, shareholder confidence in corporate management was severely undermined, prompting a vigorous push toward the implementation of robust corporate governance practices. These practices aim to mitigate financial and administrative manipulation by enforcing stricter oversight measures and ethical standards within organizations (Yu et al., 2023).

Corporate governance primarily relies on a combination of internal and external mechanisms designed to detect and curb earnings management and financial statement manipulation. A key component of these mechanisms is the board of directors, which plays a crucial role in overseeing management performance. As the shareholders' first line of defense, the board helps to address inefficiencies and prevent unlawful practices within executive management. Additionally, the board is tasked with formulating strategic plans that aim to maximize the company's profitability. Previous literature identifies several essential characteristics of an effective board of directors, including independence, diverse expertise, and a range of skills, which enhance its capability to govern effectively (Fama & Jensen, 1983).

Conversely, ownership structure serves as another critical mechanism for the effective application of corporate governance principles. The composition of ownership significantly influences corporate objectives, shareholder wealth, and managerial discipline. A well-balanced ownership structure not only aligns management with shareholder interests but also strengthens the company's resilience and long-term success (Shleifer & Vishny, 1997).

Effective corporate governance emerged as a crucial mechanism for restoring public confidence in corporate management following the significant crises that disrupted companies and financial markets globally. In this context, this study aims to assess the combined impact of board effectiveness and ownership structure on controlling earnings management practices among non-financial firms listed on the Palestine Stock Exchange (PEX). By examining these governance components, the study seeks to shed light on how they contribute to ethical financial practices and stability within these firms.

Valuable corporate governance has emerged as a fundamental tool for restoring public trust in corporate management, which has lost part of its momentum due to major global crises affecting companies and financial markets as a whole. For companies to grow and thrive, it is essential to strengthen investors' confidence and provide them with the necessary funding they need. This, in turn, requires better management performance and more efficient use of resources. Oversight and proper application of corporate governance principles serve as the main components for ensuring capital sustainability.

Thus, this study aims to examine the effectiveness of both the board of directors and ownership structure in limiting earnings management behavior among non-financial firms listed on the PEX. Accordingly, the study problem can be expressed through the following questions:

RQ1: Is there a role for the effectiveness of the board of directors in controlling earnings management practices in non-financial firms listed on the PEX?

RQ2: Is there a role for ownership structure in controlling earnings management practices in non-financial firms listed on the PEX?

The study's contribution lies in examining the combined role of board effectiveness and ownership structure in mitigating earnings management practices. It aims to determine whether these aspects serve as effective mechanisms within corporate governance for reducing earnings management. Furthermore, if deemed effective, the study will identify the specific characteristics these mechanisms should possess to optimize their impact in promoting transparency and accountability.

This paper is organized into six sections for clarity and coherence. Section 1 outlines the study's problem, objectives, research questions, and significance. Section 2 examines previous research and theoretical foundations related to corporate governance, ownership structure, and earnings management, concluding with the presentation of the study's hypotheses. Section 3 details the research design, data collection methods, and analytical approach. Section 4 highlights the key findings, while the Section 5 analyzes these findings in relation to the research questions and existing literature. Finally, Section 6 summarizes the core insights and offers recommendations for future research and practical implications.

2. LITERATURE REVIEW

2.1. Earnings management

The earnings indicator serves as a crucial means of gaining shareholders' trust, providing insight into a company's current and future revenue potential. It encapsulates the accounting practices that measure a company's performance, ultimately influencing its stock value (Li et al., 2013). In this context, some corporate management teams have engaged in intentional interventions in financial reporting and earnings management to maintain shareholder confidence while pursuing specific gains

and objectives (Schipper, 1989). Earnings management is often facilitated by the flexibility offered by accounting standards, along with the variety of available methods and accounting policies. As a result, reported financial figures may diverge significantly from actual performance, leading to potential misrepresentation for users of financial statements and negatively impacting their decision-making (Kanakriyah et al., 2017).

Numerous definitions of earnings management have been proposed in the literature. Healy and Wahlen (1999) define it as the management's exercise of personal judgment in preparing financial statements in a manner that does not accurately reflect the company's financial position, aiming to mislead shareholders regarding the company's economic performance or to influence contractual outcomes dependent on published accounting figures. Similarly, Mulford and Comiskey (2005) describe earnings management as the manipulation of earnings to achieve specific goals set by management, often to meet analysts' expectations. Charfeddine et al. (2013) further characterize earnings management as opportunistic behavior by management during the preparation of external financial reports, aimed at securing personal gains.

After reviewing the existing definitions, most researchers characterize earnings management negatively, viewing it as a means by which management misleads users of financial statements regarding the company's actual performance. This practice can lead to decreased transparency and objectivity in financial reporting. Conversely, some argue that what managers engage in is legal, as they exercise their discretion in selecting accounting policies. This flexibility may have legitimate implications for the company, potentially reflecting positively on its financial position.

Parfet (2000) asserts that earnings management arises from the flexibility afforded to managers in selecting accounting policies. When managers utilize this flexibility to maximize benefits for shareholders, it can positively influence the firm's value. Shuli (2011) similarly notes that earnings management occurs when management makes decisions aimed at influencing net profit or comprehensive income, leveraging the options available through different accounting policies. Some companies may engage in earnings management to enhance the informational content of their financial statements by mitigating annual income fluctuations. This practice, known as income smoothing, involves transferring profits from high-earning years to low-earning years, using accepted accrual accounting procedures (Holland & Ramsay, 2003; Vieira, 2016).

Many previous studies dealt with the factors that prompted management to practice earnings management, the most important of which was the completion of the company's contracts with stakeholders. Most of the previous studies have divided contracts into two types, the first is the debt contracts that are usually restricted by a set of conditions, and when these conditions are violated, the result is either the termination of the contract or the application of penal conditions to the company and thus the management may be motivated to practice earrings management to reduce the possibility of breaching the contractual terms of the debt (Balsam et al., 2003; Roychowdhury, 2006; Abbadi et al., 2016). The second type is the management compensation contracts (bonuses), which depend mainly on the profits amount or the arrival of the share price to a certain limit so that if this limit is reached, the managers will receive a percentage of the profits as a bonus, and this would push the management towards increasing profits to achieve personal benefits (Healy, 1985).

Numerous studies have examined the factors driving management to engage in earnings management, with a primary focus on fulfilling contractual obligations with stakeholders. Most research categorizes these contracts into two main types. The first type is debt contracts, which often come with a set of restrictive covenants. Breaching these covenants can lead to contract termination or the imposition of penalties, motivating management to manipulate earnings to reduce the risk of covenant violations (Balsam et al., 2003; Roychowdhury, 2006; Abbadi et al., 2016). The second type involves management compensation contracts, such as bonuses, which are frequently tied to profit targets or stock price thresholds. When these targets are met, managers receive a percentage of the profits as a bonus, creating an incentive to inflate earnings for personal gain (Healy, 1985).

Watts and Zimmerman (1986) also noted that tying incentives or rewards to net income motivates managers to select accounting methods and make judgmental estimates that enhance reported profits, thereby increasing their rewards. This may involve shifting a portion of future period profits into the current period to inflate earnings.

Accounting literature has explored various methods for detecting earnings management within companies, with a primary focus on the role of accruals. Accruals are divided into two types: discretionary accruals and non-discretionary accruals. Discretionary accruals involve management's judgment in selecting among accounting alternatives, often to portray unrealistically high or low profits based on specific incentives (Jiambalvo et al., 2002). In contrast, non-discretionary accruals are determined by the business's operational needs and are beyond management's direct control (Dechow et al., 1995).

2.2. Board governance

The core responsibility of the board of directors is to oversee and regulate the actions of executive management, as well as to develop and continuously evaluate corporate strategy. The board serves as the legal authority in appointing and dismissing managers, intervening in managerial decisions when necessary, and setting manager compensation. Below are the key factors influencing the effectiveness of the board of directors.

2.2.1. Board independence

Board independence is one of the most critical qualitative characteristics of effective corporate governance. It ensures that the majority of board members are not part of the executive management team, thus reducing potential conflicts of interest between owners and managers. Board independence acts as a safeguard against the expropriation of

minority shareholder wealth in companies with concentrated ownership and strengthens the board's supervisory and oversight functions, aligning management activities with shareholder interests and limiting earnings management practices. Following the financial failures of major corporations like Enron and WorldCom, the role of independent boards in overseeing corporate executives has gained significant attention worldwide (Chen et al., 2015).

In Palestine, the Corporate Governance Code[1] defines an independent director's board member as one who is neither employed by the company nor receives a salary from it. Research indicates a positive impact of board independence on curbing earnings management, as evidenced in studies by Marra et al. (2011), Chen et al. (2015), Azzam (2017), and Kapoor and Goel (2019). According to the Palestinian Corporate Governance Code, public shareholding companies are required to have at least two independent board members, defined as individuals with no ties to the company outside their board roles.

2.2.2. Board size

The board of directors is responsible for monitoring and overseeing management's performance to limit opportunistic behavior and to ensure actions are taken with integrity, aligning with the interests of all stakeholders. Board size is a critical factor influencing the effectiveness of corporate governance (Bataineh et al., 2019). There are differing perspectives on the relationship between board size and earnings management practices. Some studies suggest that a larger board provides more opportunities for diverse opinions and experience-sharing, which can enhance company performance. Conversely, smaller boards may discourage earnings management practices, as fewer members can facilitate more direct oversight (Ghosh et al., 2010; Alghamdi, 2012; Daghsni et al., 2016). Zalata and Roberts (2016) further argue that larger boards often include a higher number of independent members with varied expertise, which strengthens their ability to request corporate information, limit irregular practices, and curb earnings management.

On the other hand, some research indicates that larger boards may face challenges with coordination and communication among members, which can weaken the board's supervisory capacity and exacerbate agency issues (Habbash & Bajaher, 2015; Yermack, 1996; Jensen, 1993). Smaller boards, by contrast, are often more cohesive and productive, allowing members ample time to contribute, thus improving decision-making (Azzoz & Khamees, 2016). According to the Corporate Governance Code in Palestine, the board of a public shareholding company must consist of no fewer than five and no more than eleven members.

2.2.3. Busy directors

Field et al. (2013) define "busy" board members as individuals who serve on multiple corporate boards. There is a debate in the literature about the advantages and disadvantages of busy board members and their impact on earnings management practices. Some studies suggest that busy board members, particularly those holding three or more directorships, bring valuable expertise and experience from their diverse roles, which can benefit the company (Azzam, 2017). These members can effectively oversee executive decisions, enhancing the company's financial performance and reducing earnings management (Ferris et al., 2003).

Conversely, another perspective argues that board members who are preoccupied with responsibilities at other firms may have limited time and focus for each role. This lack of attention can lead to an ineffective board that fails to adequately control the company's affairs, especially when independent members are overextended with multiple commitments (Hashim & Abdul Rahman, 2011).

2.2.4. Board meeting

The Palestinian Code of Corporate Governance does not specify a minimum number of board meetings, leaving this decision to each company's internal procedural rules. Research on the relationship between board meeting frequency and earnings management practices has yielded mixed results. For instance, studies by Gulzar (2011) and Bala and Giugor (2015) suggest a positive correlation, indicating that as the number of board meetings increases, the level of earnings management tends to rise. Conversely, González and García-Meca (2014) found an inverse relationship, suggesting that more frequent board meetings can help curb earnings management practices.

2.3. Ownership structure

The ownership structure refers to the distribution of shares with respect to voting rights and capital, as well as the identities of shareholders. This structure is fundamental to understanding how shareholders interact with company management, serving as a crucial determinant of company performance. In corporate governance, ownership structure plays a pivotal role, as diversity in ownership serves as a control mechanism for executive management and reflects the nature of ownership and shareholders' stakes in the company's capital (Farooq & El Jai, 2012). Below are the key factors influencing ownership structure.

2.3.1. Institutional ownership

The institutional ownership ratio is defined as the proportion of total shares owned by institutions and companies relative to the company's paid capital. Institutions, such as banks and investment firms, are the primary investors in a company. Institutional ownership is regarded as one of the most important mechanisms for effective external corporate governance. These institutions possess considerable expertise and differ from individual investors in their ability to utilize financial reports for thorough financial analysis. This expertise drives their interest in the quality of financial reporting (Azzam et al., 2013).

An increase in the percentage of institutional ownership tends to result in less capital circulation,

[1] http://www.hawkama.ps/Pages/Comp_Gov_Page.aspx

as these institutions typically maintain their investments for longer periods. This extended investment horizon allows them to gain a deeper understanding of the company and its business dynamics, enabling them to exercise an effective supervisory role (Hamdan et al., 2016).

Research has demonstrated that concentrating ownership among institutions such as banks, insurance companies, and investment firms positively influences corporate control and decision-making processes. These investors have the resources necessary to monitor company activities and access pertinent information, thereby helping to reduce agency costs and limit managers' capacity for earnings management (Aygun et al., 2014; Alzoubi, 2016).

2.3.2. Foreign ownership

Foreign ownership refers to the situation in which an investor who is not a citizen of the country that granted the license to establish the company holds ordinary shares in that company. This type of ownership can significantly impact corporate operations by providing access to low-cost external financing. Foreign investors are often expected to possess greater experience than local investors, enabling them to more effectively monitor management's behavior. This oversight can lead to improved quality in the companies' reports and help reduce information asymmetry (Gurbuz & Aybars, 2010).

Previous studies have indicated that increased foreign investment in local companies tends to decrease the level of earnings management while enhancing the quality of financial reporting due to the supervisory role that foreign investors play over management behavior (Farouk & Bashir, 2017; Alzoubi, 2016; Farooq & El Jai, 2012). Foreign investors can exert their influence on companies both directly and indirectly. Direct control is exercised through voting rights to affect management decisions, while indirect control is established by the potential threat of withdrawing investments from local companies (Aggarwal et al., 2011).

2.3.3. Foreign ownership

Family ownership refers to the percentage of common shares in a company that are held by family members relative to the total number of shares. Family businesses are prevalent in both developed and emerging economies, accounting for nearly 90% of companies in the United States. In East Asia and Western Europe, more than two-thirds of firms are family-controlled (Choi et al., 2011).

2.4. Development of hypotheses

Based on the findings of previous studies, the following hypotheses have been formulated:

H1: There is a statistically significant negative relationship between board independence and earnings management.

H2: There is a statistically significant negative relationship between board size and earnings management.

H3: There is a statistically significant negative relationship between busy directors and earnings management.

H4: There is a statistically significant negative relationship between the frequency of board meetings and earnings management.

H5: There is a statistically significant negative relationship between institutional ownership and earnings management.

H6: There is a statistically significant negative relationship between foreign ownership and earnings management.

H7: There is a statistically significant negative relationship between family ownership and earnings management.

3. METHODOLOGY OF THE STUDY

3.1. Study population and sample

The study population comprises all public shareholding firms listed on the PEX for the period from 2018 to 2022. The sample is restricted to non-financial firms due to the distinct nature of their businesses and accounting structures. Additionally, the measurement of discretionary accruals in the financial sector differs significantly from that in other sectors (Abdelkarim & Zuriqi, 2020). Companies that did not issue their financial reports consistently between 2018 and 2022 were also excluded from the sample. Consequently, the final sample size consists of 27 firms out of 48 firms listed on the PEX.

3.2. Methodology and data collection methods

The study relied on the analytical descriptive approach, whereby cross-sectional data collected over time (panel data) was used, which represents the data of a group of firms listed on the PEX during a period of five years extending between (2018–2022), by reviewing the theoretical data sources represented by studies, books and relevant references in their paper and electronic disclosures, as well as referring to the audited and published annual reports of firms through the PEX website to collect data for the study.

3.3. Variables and measurements

The dependent variable of the study is *earning management* which the accruals approach was utilized to measure earnings management, as it is one of the most widely recognized methods for detecting such practices (Dechow et al., 1995; Li et al., 2013). The existing literature discusses several models for calculating total accruals, including those developed by Healy (1985), DeAngelo (1986), Jones (1991), Dechow et al. (1995), and Kothari et al. (2005).

Healy's (1985) model measures earnings management by comparing the average of total accruals to their ratio relative to total assets. This model is distinctive in that it systematically predicts the occurrence of earnings management in each period. In contrast, DeAngelo's (1986) model identifies earnings management by calculating the difference in total accruals between two periods and dividing that figure by the total assets at the beginning of the last period.

Both Healy's (1985) and DeAngelo's (1986) models have faced criticism, particularly regarding their assumption that non-discretionary accruals remain fixed over time. Critics argue that these models neglect the influence of economic conditions on a company's non-discretionary accruals (Dechow et al., 1995).

Jones (1991) proposed a model that addressed the assumptions of stability regarding non-discretionary accruals found in the Healy's (1985) and DeAngelo's (1986) models. This model accounts for the impact of changes in a company's economic conditions on non-discretionary accruals by incorporating total fixed assets and changes in revenue into the regression equation. It is based on two key assumptions: that total fixed assets determine depreciation expense and that changes in working capital are a result of changes in revenues.

However, a notable limitation of this model is its failure to consider that managers may engage in earnings management through revenue, as it assumes that such management occurs solely through expense adjustments. To address this issue, Dechow et al. (1995) modified the Jones model by adding the change in accounts receivable to the calculation of non-discretionary accruals. This modification enables the division of total accruals into discretionary and non-discretionary accruals. Consequently, the practice of earnings management is assessed through discretionary accruals, which are most susceptible to manipulation by management when preparing financial statements. This is largely due to the reliance on accounting policies and estimates, which involve significant personal judgment and discretion (Hsu & Koh, 2005).

The modified Jones model is regarded as one of the most effective current models for measuring and identifying the practice of earnings management (Al-Thuneibat et al., 2016; Bos et al., 2013; Guay et al., 1996; Dechow et al., 1995). Several previous studies have indicated that employing cross-sectional analysis of the modified Jones model to estimate discretionary and non-discretionary accruals offers several advantages over time-series analysis. Specifically, cross-sectional analysis allows for a larger sample size, facilitating easier hypothesis testing and reducing bias, which enhances the efficiency and accuracy of the estimates. Additionally, it enables the examination of samples from newly established startups (Zhong et al., 2007; Bartov et al., 2000; Defond & Jiambalro, 1994).

In contrast, the time-series approach is susceptible to potential survivorship bias and typically requires a minimum of 10 years of observations to achieve a reasonable level of estimation efficiency (Dechow et al., 1995). For this study, the coefficients of the modified Jones model were estimated using cross-sectional data analysis rather than time-series analysis.

Despite its strengths, the modified Jones model has certain limitations, particularly in accurately estimating discretionary accruals when a company's financial performance reaches extreme levels (Dechow et al., 2012). To address these shortcomings, Kothari et al. (2005) developed the performance-matched discretionary accruals model (PMDAM). This model aims to mitigate the inaccuracies that may arise in discretionary accrual estimation under extreme financial performance conditions. It incorporates return on assets (*ROA*) as an additional variable, which serves as a benchmark for regulating the company's financial performance.

The following models were used to measure earnings management in this study:

1. *Modified Jones model (1995)*

Earnings management was measured by using the modified Jones model proposed in a study by (Dechow et al., 1995) who modified the (Jones, 1991) model by adding the change in accounts receivable when calculating non-discretionary accruals. To estimate total accruals using the modified Jones model, the following regression equation was used:

$$\frac{TAC_{it}}{TA_{it-1}} = a_1\left(\frac{1}{TA_{it-1}}\right) + a_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + a_3\left(\frac{PPE_{it}}{TA_{it-1}}\right) + \varepsilon_{it} \quad (1)$$

where,

- TAC_{it}: total accruals for the firm *i* in time *t*;
- ΔREV_{it}: change in revenue for the firm *i* in time *t*;
- ΔREC_{it}: change in accounts receivable for the firm *i* in time *t*;
- PPE_{it}: total fixed assets for the firm *i* in time *t*;
- TA_{it-1}: total assets for the firm *i* in time *t* - 1;
- ε_{it}: the error terms.

To estimate total accruals using the balance sheet approach, the following regression equation was used:

$$TAC_{it} = \left(\frac{\Delta CA_{it} - \Delta CL_{it} - \Delta CASH_{it} - \Delta DCL_{it} - DEP_{it}}{TA_{it-1}}\right) \quad (2)$$

where,

- TAC_{it}: total accruals for the firm *i* in time *t*;
- ΔCA_{it} : change in current assets for the firm *i* in time *t*;
- ΔCL_{it}: change in current liabilities for the firm *i* in time *t*;
- $\Delta CASH_{it}$: change in cash for the firm *i* in time *t*;
- ΔDCL_{it}: change in debit that includes current liabilities for the firm *i* in time *t*;
- DEP_{it}: depreciation expense for the firm *i* in time *t*;
- TA_{it-1}: total assets for the firm *i* in time *t* - 1.

Then determine the non-discretionary accruals (*NDA*) for each of the sample companies, and during each year of the study, through the estimated model coefficient (a_1, a_2, a_3) as in the following equation:

$$NDA_{it} = a_1\left(\frac{1}{TA_{it-1}}\right) + a_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + a_3\left(\frac{PPE_{it}}{TA_{it-1}}\right) + \varepsilon_{it} \quad (3)$$

where,

- NDA_{it}: non-discretionary accruals for the firm *i* in time *t*;
- ΔREV_{it}: change in revenue for the firm *i* in time *t*;
- ΔREC_{it}: change in accounts receivable for the firm *i* in time *t*;
- PPE_{it}: total fixed assets for the firm *i* in time *t*;
- TA_{it-1}: total assets for the firm *i* in time *t* - 1;
- ε_{it}: the error terms.

Then, the discretionary accruals were calculated for each of the sample companies, and during each year of the study, as follows:

$$DA_{it} = TAC_{it} - NDA_{it} \quad (4)$$

where,

• DA_{it}: discretionary accruals for the firm i in time t;

• TAC_{it}: total accruals for the firm i in time t;

• NDA_{it}: non-discretionary accruals for the firm i in time t.

2. *Performance-matched discretionary accruals model (PMDAM)*

This model suggested adding the *ROA* as an additional variable to the modified Jones model, which acts as a regulator of the company's financial performance so that the regression equation became as follows:

$$\frac{TAC_{it}}{TA_{it-1}} = a_1\left(\frac{1}{TA_{it-1}}\right) + a_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + a_3\left(\frac{PPE_{it}}{TA_{it-1}}\right) + a_4 ROA_{it} + \varepsilon_{it} \quad (5)$$

where,

• TAC_{it}: total accruals for the firm i in time t;

• ΔREV_{it}: change in revenue for the firm i in time t;

• ΔREC_{it}: change in accounts receivable for the firm i in time t;

• PPE_{it}: total fixed assets for the firm i in time t;

• TA_{it-1}: total assets for the firm i in time t - 1;

• ROA_{it}: net income divided to total assets for the firm i in time t;

• ε_{it}: the error terms.

And then determine the non-discretionary accruals for each of the sample companies, and during each year of the study, through the estimated model coefficient (a_1, a_2, a_3) in the same way as the previous one, taking into account the ROA in the regression equation.

The Table 1 below shows the independent and control variables of the study and the way to measure them.

Table 1. Study variables

Variables	*Symbol*	*Description*
Board independence	*BIND*	Divide the number of independent directors' board members by the total number of board members
Board size	*BSIZE*	Total number of members on the board
Busy directors	*BUSDIR*	Divide the number of members occupying three or more positions by the total number of board members
Board meeting	*BMEET*	The number of board meetings in a year
Institutional ownership	*INSOWN*	The percentage of the company's shares owned by local companies and institutions
Foreign ownership	*FOROWN*	The percentage of the company's owned shares by foreigners (non-nationals), whether individuals or companies
Family ownership	*FMYOWN*	The percentage of the company's shares owned by family members
Firm size	*FSIZE*	The logarithm of total assets at the end of the year
Firm financial leverage	*LEV*	Average total liabilities / Average total assets
Audit office ranking	*FAOR*	A dummy variable which equals 1 if audit office from Big Four, otherwise 0

3.4. Study model

Multiple regression analysis was employed to test the relationship between the independent and dependent variables, as represented by the following equation:

$$\begin{aligned} ABSDA_{it} = {} & \beta_0 + \beta_1 BIND_{it} + \beta_2 BSIZE_{it} + \\ & \beta_3 BUSDIR_{it} + \beta_4 BMEET_{it} + \beta_5 INSOWN_{it} + \\ & \beta_6 FOROWN_{it} + \beta_7 FMYOWN_{it} + \beta_8 FSIZE_{it} + \\ & \beta_9 LEV_{it} + \beta_{10} FAOR_{it} + \varepsilon_{it} \end{aligned} \quad (6)$$

where,

• $ABSDA_{it}$: absolute value of discretionary accruals for the firm i in time t;

• $BIND_{it}$: board independence for the firm i in time t;

• $BSIZE_{it}$: board size for the firm i in time t;

• $BUSDIR_{it}$: busy directors for the firm i in time t;

• $BMEET_{it}$: board meeting for the firm i in time t;

• $INSOWN_{it}$: institutional ownership for the firm i in time t;

• $FOROWN_{it}$: foreign ownership for the firm i in time t;

• $FMYOWN_{it}$: family ownership for the firm i in time t;

• $FSIZE_{it}$: firm size for the firm i in time t;

• LEV_{it}: financial leverage ratio for the firm i in time t;

• $FAOR_{it}$: audit office ranking for the firm i in time t;

• ε_{it}: the error terms.

4. RESULTS

4.1. Analysis assumption

Several assumptions must be considered when conducting regression:

1. *Linearity*: The relationship between the independent and dependent variables should be linear, as previously established in the model.

2. *Normality*: Both the independent and dependent variables should ideally follow a normal distribution. However, the data collected for this study did not exhibit normal distribution, necessitating the transformation of certain variables, including company size. Some variables, which had a value of zero, could not be transformed. To address this issue, the use of robust standard errors was recommended to control for these variables and achieve more accurate results.

3. *Homoscedasticity*: To determine whether the data is homogenous, the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity was conducted. The results indicated a probability value of 0.000, which is less than 5%, suggesting that the data is heterogeneous and not normally distributed.

To rectify this issue, robust standard errors were applied.

Breusch-Pagan/Cook-Weisberg test for heteroscedasticity:
- Null hypothesis: constant variance;
- Variables: fitted values of absolute value of discretionary accruals;
- Chi2 (1): 616.37;
- Prob > Chi2: 0.0000.

4. *Autocorrelation*: This assumption was evaluated using the Durbin-Watson test. The Durbin-Watson statistic ranges from 0 to 4, with values close to 2 indicating the absence of autocorrelation. The result indicated a Durbin-Watson value of 1.838126, which is close to 2, suggesting that the data is free from autocorrelation issues.

Durbin-Watson test:
- Durbin-Watson d-statistic: 1.838126.

5. *Multicollinearity*: The assumption of independence among independent variables in the general linear model is crucial for the validity of the model. According to Gujarati (2004), the model is not appropriate for estimating coefficients unless this assumption is met. While some correlation among independent variables is acceptable, the correlation between any two variables should not exceed 80% to maintain the accuracy of the results. A significant correlation may distort the relationship between the variables. The regression model was tested to ensure no significant correlations existed among the independent and control variables. In cases of high correlation, the offending variable would be excluded to preserve the integrity of the analysis results.

As shown in Table 2, there is no significant multicollinearity among the independent and control variables exceeding 80%, indicating that multicollinearity is not a concern.

Table 2. Multicollinearity test results

	BIND	*BSIZE*	*BUSDIR*	*BMEET*	*INSOWN*	*FOROWN*	*FMYOWN*	*FSIZE*	*LEV*	*FAOR*
BIND	1									
BSIZE	0.0621	1								
BUSDIR	0.1258	0.0985	1							
BMEET	0.1966	0.0874	-0.0486	1						
INSOWN	0.1158	-0.2103	0.1482	0.0581	1					
FOROWN	0.1245	-0.0868	-0.0766	-0.1355	-0.0392	1				
FMYOWN	-0.0231	-0.2382	-0.2813	-0.0769	0.1746	0.0841	1			
FSIZE	0.2783	-0.0157	-0.0617	0.1835	0.1233	0.2357	0.3681	1		
LEV	0.0529	-0.0682	-0.0954	0.1652	-0.0925	-0.0244	0.4183	0.1185	1	
FAOR	-0.3514	0.1378	-0.1529	-0.1983	-0.3752	-0.1952	-0.01284	-0.3318	-0.1775	1

4.2. Descriptive statistics

The Table 3 below shows the results of the descriptive statistics analysis of the study variables.

Table 3 shows that the mean of the absolute value of discretionary accruals is 8.3%, with a standard deviation of 10.2%. The maximum value recorded is 0.151, and the minimum is 0.000. This suggests that companies listed on the PEX engage in earnings management, manipulating their reported results by leveraging the flexibility provided by accounting standards. This practice occurs at a moderate to high level compared to other studies, where the average absolute value of earnings management in American companies ranges from 2% to 7% (Chen et al., 2015; Ghosh et al., 2010), in British companies is 5% (Habbash, 2010), and in Malaysian companies is 6.4% (Abdul Rahman & Haneem Mohamed Ali, 2006). Notably, the absolute value of accruals is used here to account for management's earnings management practices, whether they involve increasing or decreasing reported profits.

Table 3 reveals that the average percentage of independent members on the board of directors for the total sample companies is 42%, with a standard deviation of 16%. This relatively favorable percentage suggests that Palestinian firms should focus on recruiting more independent members to enhance board independence. The average board size is 7 members, with a standard deviation of 1.8, in accordance with the Code of Corporate Governance in Palestine, which mandates a minimum of five and a maximum of 11 members for public shareholding companies.

For board member commitments, any members with three or more directorships were considered "busy" for the study. Descriptive statistics indicate that 20% of board members fall into this category, holding memberships on the boards of three or more companies. In terms of board meetings, the descriptive statistics show a range of 2 to 12 meetings per fiscal year.

The data in Table 3 also show that the mean institutional ownership stands at 35%, with a standard deviation of 31%, reflecting both a solid level of company investment in other firms and a substantial variation in institutional ownership among the sample companies. The average foreign ownership is 1.4%, with a standard deviation of 7%, highlighting the low level of foreign investment in Palestinian companies likely influenced by the region's unstable political and economic conditions. Finally, family ownership averages 18%, with a standard deviation of 25%, indicating the level of family involvement in Palestinian firms.

Table 3. Descriptive statistics analysis

Variables	*Mean*	*Std. deviation*	*Minimum*	*Maximum*
Discretionary accruals (*DA*)	0.08375	0.10237	0	0.15125
BIND	0.42225	0.16800	0	1
BSIZE	7	1.831	4	13
BUSDIR	0.2025	0.15525	0	0.6451
BMEET	56.475	21.225	2	12
INSOWN	0.35625	0.3101	0	0.7400
FOROWN	0.0145	0.0714	0	0.0178
FMYOWN	0.1874	0.2580	0	1

4.3. Regression result

The study model utilizes panel data, applying the fixed effects approaches to enhance the robustness of the results. Table 4 below presents the regression results using the fixed effects approach for the modified Jones model.

Table 4. Regression results: Fixed effects approach for the modified Jones model

Variables	*Std. deviation*	*t*	*Sig. t*
BIND	0.028	-1.8	0.024**
BSIZE	0.004	2.2	0.014**
BUSDIR	0.043	-1.07	0.312
BMEET	0.001	2.08	0.019**
INSOWN	0.42	-1.53	0.174
FOROWN	0.062	1.23	0.341
FMYOWN	0.047	-6.2	0.000***
FSIZE	1.4	0.52	0.492
LEV	0.0083	-2.74	0.014**
FAOR	0.016	-2.84	0.005***
Adj. R^2	0.341		
F-value	8.251		
Prob. F	0.000		

*Note: ***Significant at 0.01; **Significant at 0.05; Significant at 0.10.*

5. DISCUSSION

There is a statistically significant negative relationship between board independence and earnings management, with a t-value of 1.8, significant at a level below 0.05. This finding suggests that a higher proportion of independent board members in non-financial Palestinian firms correlates with a reduction in earnings management practices. This relationship may arise from the board's strengthened supervisory and oversight role, effectively curbing earnings management activities. This result aligns with previous studies by Kapoor and Goel (2019), Azzam (2017), Zalata and Roberts (2016), Garven (2015), Chen et al. (2015), Marra et al. (2011), and Ching et al. (2006), but contrasts with Fadzilah's (2017) findings, which indicated that board independence had no significant effect on earnings management in Malaysian family firms. Therefore, the researcher accepts *H1*.

There is a statistically significant positive relationship between board size and earnings management, with a t-value of 2.2, significant at a level below 0.05. This finding suggests that as the number of board members increases, so does the tendency for earnings management within firms. This may indicate that larger boards face greater challenges with coordination, communication, and consensus-building, potentially making them less effective at limiting earnings management compared to smaller boards, where decision-making and communication are more streamlined. This result is consistent with studies by Ching et al. (2006), Abdul Rahman & Haneem Mohamed Ali (2006), and Swastika (2013), but contrasts with findings by Ghosh et al. (2010), Alghamdi (2012), Garven (2015), and Daghsni et al. (2016), which identified a statistically significant inverse relationship between board size and earnings management. Those studies suggested that larger boards, often with more independent members and diverse expertise, may enhance supervisory effectiveness and reduce earnings management. Therefore, the researcher rejects *H2*.

There is no statistically significant relationship between busy directors and earnings management, with a t-value of 1.07, which is not significant at a level below 0.05. This suggests that, within Palestinian companies, the presence of directors with multiple board memberships does not influence the extent of earnings management practices. This finding contrasts with Tham et al. (2019), who found that companies with directors holding multiple board memberships exhibited lower levels of earnings management, attributing this to directors' enhanced expertise and skills from their diverse experiences, which helped in curbing earnings management practices. Therefore, the researcher rejects *H3*.

There is a statistically significant positive relationship between the frequency of board meetings and earnings management, with a t-value of 2.08, significant at a level below 0.05. This finding suggests that a higher number of board meetings throughout the financial year correlates with an increase in earnings management practices within companies. This may be attributed to potential disagreements among board members, leading to more frequent meetings without necessarily improving oversight effectiveness. Alghamdi (2012) found similar results, emphasizing the central role of the board in Saudi companies to enhance performance and mitigate violations. In contrast,

Habbash (2010) found no significant relationship between board meeting frequency and earnings management, noting that frequent meetings do not necessarily reflect an active and effective board. Therefore, the researcher rejects *H4*.

There is no statistically significant relationship between institutional ownership and earnings management, with a t-value of 1.53, which is not significant at a level below 0.05. This indicates that, in Palestinian non-financial companies, institutional ownership does not appear to influence earnings management practices. This result aligns with findings from Maswadeh (2018), Lin and Manowan (2012), and Senteza et al. (2005). However, it contrasts with studies by San Martín Reyna (2018), Alzoubi (2016), Ali and Zhang (2015), and Koh (2003), which found that higher institutional ownership is associated with lower levels of earnings management. These studies suggest that institutional investors may provide additional oversight, helping to curb managerial discretion to protect their investments. Therefore, the researcher rejects *H5*.

There is no statistically significant relationship between foreign ownership and earnings management, with a t-value of 1.23, which is not significant at a level below 0.05. This may be attributed to the limited presence of foreign ownership in many Palestinian companies, indicating that foreign ownership does not impact earnings management practices in this context. This finding aligns with studies by Maswadeh (2018) and Alzoubi (2016) but contrasts with research by Farouk and Bashir (2017), Azzam (2017), and Farooq and El Jai (2012), which found that foreign ownership can help reduce earnings management by introducing external oversight. Therefore, the researcher rejects *H6*.

There is a statistically significant negative relationship between family ownership and earnings management, with a t-value of 6.2, significant at a level below 0.01. This indicates that higher levels of family ownership in Palestinian non-financial companies are associated with lower levels of earnings management. This effect may be due to family owners actively exercising control over management's decisions, thereby reducing managerial discretion in financial reporting. Therefore, the researcher accepts *H7*.

Table 4 indicates that firm size has a positive but statistically insignificant relationship with the practice of earnings management in the study sample, with a t-value of 0.52, which is not significant at a level below 0.05. This suggests that firm size does not affect earnings management practices in Palestinian non-financial companies. This finding aligns with Bataineh et al. (2018) but contradicts studies by Alghamdi (2012), Swastika (2013), and Abbadi et al. (2016), which identified an inverse relationship between firm size and earnings management. Those researchers posited that larger companies tend to face greater scrutiny from shareholders and financial analysts, making them less likely to engage in earnings management.

Additionally, Table 4 shows that firm leverage has a statistically significant negative relationship with earnings management, with a t-value of 2.74, significant at a level below 0.05. This relationship may arise from debt agreements that impose restrictions on management, thereby enhancing oversight from creditors. This finding aligns with studies by Alzoubi (2016) and Shu et al. (2015) while contradicting the conclusions of Abbadi et al. (2016) and Bataineh et al. (2018), who found a positive relationship between firm leverage and earnings management. These studies suggested that firms with high debt ratios may resort to earnings management to avoid breaching the terms of their debt agreements.

Furthermore, there is a negative statistically significant relationship between audit office ranking and earnings management, with a t-value of 2.84, significant at a level below 0.01. This suggests that the quality of audits conducted by the Big Four accounting firms contributes to the detection and disclosure of earnings management practices, resulting in a lower incidence of earnings manipulation.

In the previous table, discretionary accruals were assessed using the modified Jones model. To reinforce and validate these results, discretionary accruals were recalculated using the PMDAM. This approach helps mitigate any potential miscalculations of accruals that may arise from the modified Jones model. Table 5 presents the results of the regression analysis conducted with a fixed-effect model utilizing the PMDAM.

Table 5. Regression results: Fixed effects approach utilizing the PMDAM

Variables	*Std. deviation*	*t*	*Sig. t*
BIND	0.034	-1.74	0.052*
BSIZE	0.004	2.05	0.032**
BUSDIR	0.048	-0.92	0.472
BMEET	0.002	2.49	0.008***
INSOWN	0.47	-1.13	0.341
FOROWN	0.073	-0.26	0.672
FMYOWN	0.069	-7.4	0.000***
FSIZE	1.7	0.38	0.819
LEV	0.0056	-2.26	0.183
FAOR	0.020	-2.62	0.062*
Adj. R^2	0.326		
F-value	8.145		
Prob. F	0.000		

*Note: ***Significant at 0.01; **Significant at 0.05; Significant at 0.10.*

The results presented in Table 5 demonstrate a statistically significant effect of the independent variables on the dependent variable (*earnings management*), with a calculated F-value of 8.145 and a significance level (Sig.) of 0.000, which is less than 0.05. The adjusted R-squared value (Adj. R^2) is

32.6%, indicating that 32.6% of the variance in earnings management can be explained by the variance in the combined independent variables. These results are comparable to those obtained using the modified Jones model, where the F-value was 8.251, and the significance level was also 0.000. In that model, the adjusted R-squared value was slightly higher at 34.1%.

The analysis using the PMDAM revealed a positive and statistically significant relationship between board size and earnings management at the 5% significance level, consistent with the modified Jones model. Board independence demonstrated an inverse statistically significant relationship with earnings management at the 10% level, aligning with the modified Jones results at the 5% level. Additionally, board meetings showed a positive statistically significant relationship with earnings management at the 1% level, again consistent with the modified Jones findings at the 5% level. Family ownership maintained an inverse and statistically significant relationship with earnings management at the 5% significance level. Overall, the results remained consistent across both models, reinforcing the validity of the findings, and supporting the tested hypotheses.

6. CONCLUSION

The key conclusions of the study can be summarized as follows. First, Palestinian non-financial companies participate in earnings management practices, often tailoring their financial statements to align with management objectives and interests. Second, family ownership emerges as the most influential variable in curbing earnings management, with higher family ownership percentages associated with reduced manipulation, likely due to owners exerting direct or indirect oversight over management behavior. Third, board independence is identified as another crucial factor in limiting earnings management, as independent board members tend to be more objective and accountable, effectively monitoring executive activities and strategic planning, which positively impacts company performance and goal attainment. Fourth, companies associated with the four major global audit firms (the Big Four) experience a reduction in earnings management practices, attributed to the extensive resources and expertise these firms offer, which enhance the quality of audit services.

Based on these findings, several recommendations can be proposed. First, companies should enhance board independence by increasing the proportion of independent directors. This can strengthen oversight and effectively reduce earnings management practices. Additionally, firms may consider reassessing the size of their boards, aiming for a smaller, more cohesive group that facilitates effective communication and decision-making.

To improve meeting effectiveness, the frequency of board meetings should be paired with structured agendas and clear objectives. This ensures that discussions are productive and contribute to oversight rather than merely fulfilling formalities. Furthermore, policies that support family ownership structures could be beneficial, as they have been shown to limit earnings management through increased management control.

It is also important to encourage institutional investors to play a more active role in governance, potentially by collaborating with management to promote transparency and accountability. Lastly, companies should prioritize engaging high-quality audit firms, as their involvement appears to correlate with lower earnings management practices.

One of the primary limitations of this study is its focus on nonfinancial firms exclusively, which may limit the generalizability of the findings to other sectors, particularly the financial industry. Additionally, the analysis is confined to a five-year period, which may not fully capture long-term trends or the impact of significant external events beyond this timeframe. Consequently, the conclusions drawn may be specific to the sample and period studied, and caution should be exercised when applying these insights to broader contexts or longer time horizons.

Future studies could explore several areas to further understand the dynamics of earnings management and corporate governance. Cross-country comparisons could be conducted to analyze the impact of governance factors on earnings management in different economic and regulatory environments. Longitudinal studies may provide insights into how changes in governance practices influence earnings management over time.

Additionally, sector-specific analysis could investigate earnings management practices in specific sectors beyond non-financial companies to identify sector-specific governance impacts. Qualitative research exploring the motivations behind earnings management practices and the perceptions of board members regarding their roles could enrich the understanding of the dynamics at play.

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