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The Impact of Corporate Governance, Financial Leverage, and Firm Size on Earnings Management

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Abstract: *This study investigates the impact of corporate governance, financial leverage, and firm size on earnings management in companies listed on the Tehran Stock Exchange from 2017 to 2022. Utilizing panel data from 156 systematically selected companies, the study applies the Ordinary Least Squares (OLS) method to estimate the relationships between these variables. The results reveal that financial leverage positively influences earnings management, indicating that companies with higher debt levels are more likely to manipulate earnings. Firm size negatively impacts earnings management, suggesting that larger firms are less prone to earnings manipulation. Surprisingly, corporate governance shows a positive relationship with earnings management, contrary to the expected negative impact, raising concerns about the effectiveness of governance mechanisms in these firms. These findings have significant implications for policymakers, regulators, and company boards, highlighting the need for strengthened governance practices and increased scrutiny of highly leveraged firms to ensure the transparency and accuracy of financial reporting.*

Keywords: *Corporate Governance, Financial Leverage, Firm Size, Earnings Management.*

I. Introduction

Earnings management, a critical issue in corporate finance, refers to the manipulation of financial reports by company management to achieve certain financial outcomes. This practice has significant implications for stakeholders, including investors, creditors, and regulators, as it can distort the true financial health of a company. Earnings management can be driven by various factors, such as the desire to meet earnings forecasts, secure executive bonuses, or influence stock prices. However, the ethicality and legality of such practices are often questioned, as they may mislead stakeholders and lead to suboptimal decision-making. Corporate governance, financial leverage, and firm size are three key factors that can influence the extent and nature of earnings management within a firm. Corporate governance, which includes the mechanisms, processes, and relations by which corporations are controlled and directed, plays a crucial role in monitoring management behavior and ensuring transparency in financial reporting. Effective corporate governance can curb earnings management by enforcing stricter oversight and accountability. On the other hand, poor governance may provide an environment conducive to manipulative practices. Financial leverage, the use of debt to finance a firm's operations, is another critical factor that can impact earnings management. High levels of leverage increase a firm’s financial risk, potentially motivating management to manipulate earnings to maintain favorable credit ratings or avoid breaches of debt covenants. The relationship between leverage and earnings management is complex and may vary depending on the firm’s financial condition and market environment. Firm size, often considered a proxy for a company’s market power, resource availability, and complexity, can also affect the propensity for earnings management. Larger firms might have more sophisticated accounting systems and stronger governance structures, potentially reducing the likelihood of earnings manipulation. However, they may also face greater pressure to meet market expectations, leading to increased earnings management activities. Given the significant impact of earnings management on financial markets and the broader economy, understanding the interplay between corporate governance, financial leverage, and firm size is essential. This study focuses on companies listed on the Tehran Stock Exchange (TSE), a market that has undergone considerable development in recent years but still faces challenges related to corporate transparency and governance. Investigating these factors in the context of the TSE is particularly relevant as it provides insights into how these dynamics operate in emerging markets, which often differ from more developed economies.

The primary research question addressed in this study is: *How do corporate governance, financial leverage, and firm size influence earnings management practices in companies listed on the Tehran Stock Exchange?*

The importance of this research lies in its potential to enhance our understanding of how corporate governance, financial leverage, and firm size interact to influence earnings management in an emerging market context. Earnings management can distort financial statements, leading to inaccurate valuations and poor investment decisions, which can have far-reaching consequences for capital markets and the economy. By examining these factors within the specific context of the Tehran Stock Exchange, this study contributes to a more nuanced understanding of the challenges faced by companies in emerging markets, where regulatory frameworks may be less robust, and market practices can differ significantly from those in developed economies. Corporate governance is crucial in safeguarding the interests of shareholders and ensuring that management acts in the best interest of the company. In markets like Iran, where governance practices are still evolving, understanding how governance structures affect earnings management is vital for developing policies that promote transparency and accountability. Similarly, financial leverage is a double-edged sword; while it can amplify returns, it also increases risk and the potential for financial distress, making it a critical area of study in relation to earnings manipulation. Firm size adds another layer of complexity, as larger firms may have more resources to either implement or prevent earnings management, depending on their governance and risk management frameworks. The findings of this research are particularly important for regulators, policymakers, and investors in the Tehran Stock Exchange. For regulators, understanding the factors that contribute to earnings management can inform the development of more effective oversight mechanisms and regulations that enhance market integrity. Policymakers can use the insights from this research to design corporate governance frameworks that better align management incentives with shareholder interests, thereby reducing the likelihood of earnings manipulation. Investors, both domestic and international, can benefit from a deeper understanding of the risks associated with earnings management in the TSE, enabling them to make more informed investment decisions. This research is significant for several reasons. First, it provides empirical evidence on the relationship between corporate governance, financial leverage, and firm size with earnings management in the context of an emerging market. While there is substantial research on these topics in developed economies, there is relatively limited literature focusing on emerging markets like Iran. This study fills a critical gap by providing insights into the dynamics of these factors in the Tehran Stock Exchange, offering valuable information that can be used to improve market practices and regulatory frameworks. Second, the innovative aspect of this research lies in its comprehensive approach to examining the interplay between multiple factors—corporate governance, financial leverage, and firm size—simultaneously. Many existing studies tend to focus on these factors in isolation, but this research recognizes that they are interrelated and can jointly influence earnings management practices. By adopting a holistic approach, this study provides a more complete picture of the factors that drive earnings management, which is crucial for developing effective strategies to mitigate such practices. Furthermore, this research employs advanced statistical techniques, including ordinary least squares (OLS) regression, to rigorously test the hypotheses and ensure the robustness of the findings. The use of OLS in this context is particularly appropriate as it allows for the examination of linear relationships between the independent variables (corporate governance, financial leverage, and firm size) and the dependent variable (earnings management). This methodological rigor enhances the credibility of the research and ensures that the results are both reliable and generalizable. Based on the above discussion, the following hypotheses are proposed for this study:

1. Stronger corporate governance mechanisms are associated with lower levels of earnings management in companies listed on the Tehran Stock Exchange.
2. Higher financial leverage is associated with higher levels of earnings management in companies listed on the Tehran Stock Exchange.
3. Larger firm size is associated with lower levels of earnings management in companies listed on the Tehran Stock Exchange.

Corresponding to the research hypotheses, the scientific objectives of this research are as follows:

1. To examine the impact of corporate governance mechanisms on earnings management in companies listed on the Tehran Stock Exchange.
2. To investigate the relationship between financial leverage and earnings management in companies listed on the Tehran Stock Exchange.
3. To analyze the effect of firm size on earnings management in companies listed on the Tehran Stock Exchange.

This research focuses on the subject of earnings management, specifically how it is influenced by corporate governance, financial leverage, and firm size. The study is conducted within the spatial scope of companies listed on the Tehran Stock Exchange, which represents a significant segment of Iran's financial market and provides a relevant context for examining the research questions. The temporal scope of the research covers the period from 2017 to 2022, a time frame that includes significant developments in Iran's economic and regulatory environment, making it pertinent for studying the dynamics of earnings management during this period.

The findings of this research have practical applications for various stakeholders. For educational institutions, the results can be incorporated into curricula related to finance, accounting, and corporate governance, providing students with a deeper understanding of earnings management practices and their implications in emerging markets. This knowledge is essential for developing future professionals who are equipped to navigate the complexities of financial reporting and corporate governance. For executive bodies, particularly those involved in corporate oversight and regulation, the research findings offer valuable insights into the effectiveness of governance mechanisms in curbing earnings management. This information can be used to strengthen regulatory frameworks and enhance the transparency and integrity of financial markets. By understanding the factors that contribute to earnings manipulation, regulators can develop targeted policies that address specific weaknesses in corporate governance and financial reporting. Moreover, the findings can be of interest to investors and financial analysts who are involved in the Tehran Stock Exchange. By understanding how corporate governance, financial leverage, and firm size influence earnings management, they can make more informed investment decisions, assess the risk profiles of different companies more accurately, and contribute to the overall stability and efficiency of the market. In conclusion, this research not only contributes to the academic literature on earnings management but also provides practical insights that can be used to improve corporate practices and regulatory policies in emerging markets like Iran. The comprehensive approach adopted in this study, combined with its focus on a relatively under-researched market, underscores the significance and relevance of this research in both academic and practical terms.

II. Literature review

In this section, we delve into the key concepts related to the study's title—Corporate Governance, Financial Leverage, Firm Size, and Earnings Management—by exploring the relevant literature. These concepts are crucial in understanding the dynamics that influence earnings management practices, especially within the context of companies listed on the Tehran Stock Exchange. Corporate governance refers to the systems, processes, and practices through which companies are directed and controlled. It encompasses the rules and policies that define the relationship between shareholders, management, and the board of directors. Corporate governance aims to ensure accountability, fairness, and transparency in a company’s relationship with its stakeholders. The literature on corporate governance is extensive, focusing on various mechanisms such as board structure, ownership concentration, executive compensation, and shareholder rights. The seminal work of Berle and Means (1932) highlighted the separation of ownership and control in corporations, laying the foundation for modern corporate governance studies. Jensen and Meckling (1976) further developed this concept by introducing agency theory, which suggests that conflicts of interest between managers (agents) and shareholders (principals) can lead to agency costs, including earnings management. Corporate governance mechanisms, such as board independence, audit committees, and the presence of institutional investors, are designed to mitigate agency problems by monitoring managerial actions. Strong governance is believed to reduce the likelihood of earnings management by enforcing stricter oversight and aligning management's interests with those of shareholders. Research by Beasley (1996) found that firms with a higher proportion of independent directors on their boards were less likely to engage in financial statement fraud, a form of extreme earnings management. Similarly, Dechow, Sloan, and Sweeney (1996) demonstrated that companies with more effective audit committees were less likely to manipulate earnings. However, the effectiveness of these mechanisms can vary depending on the regulatory environment, cultural factors, and the specific governance practices in place. In emerging markets like Iran, corporate governance practices are often less developed compared to those in more mature markets. The lack of robust legal frameworks and enforcement mechanisms can lead to weaker governance structures, increasing the risk of earnings management. Studies such as those by Shleifer and Vishny (1997) have emphasized the importance of investor protection and legal enforcement in curbing earnings manipulation in such markets. This research will contribute to understanding how corporate governance operates within the unique context of the Tehran Stock Exchange. Financial leverage refers to the use of debt in a company's capital structure. It is a measure of the extent to which a firm is using borrowed funds to finance its operations. The degree of leverage reflects a company's risk profile and financial strategy.

The Modigliani-Miller theorem (1958) originally posited that, in a perfect market, the capital structure is irrelevant to a firm's value. However, in the presence of taxes, bankruptcy costs, and agency costs, the capital structure becomes a significant factor in financial decision-making. High financial leverage can increase a firm's financial risk, as it must meet fixed interest obligations regardless of its earnings performance. The relationship between financial leverage and earnings management is complex and has been the subject of extensive research. On one hand, higher leverage can pressure management to engage in earnings management to meet debt covenants and avoid the costs associated with financial distress. Studies such as DeFond and Jiambalvo (1994) found that firms close to violating debt covenants are more likely to manipulate earnings upwards. On the other hand, firms with high leverage might also be subject to greater scrutiny from creditors and investors, which could deter earnings management. Ahmed, Neel, and Wang (2013) argued that leveraged firms might engage in less earnings management due to the monitoring effects of debt holders, who have a vested interest in the accuracy of financial reports. In the context of the Tehran Stock Exchange, financial leverage plays a critical role given the economic volatility and financial constraints that companies face. The reliance on debt in an inflationary environment like Iran's can exacerbate the risks associated with financial leverage, making it an important factor to study in relation to earnings management.

Firm size is typically measured by metrics such as total assets, sales, or market capitalization. It serves as a proxy for a company's market power, resource availability, and complexity. Larger firms are often presumed to have better access to capital markets, more diversified operations, and more established reputations, which can influence their financial reporting practices. The relationship between firm size and earnings management is nuanced. Larger firms may have more sophisticated internal controls and governance structures, which could reduce the likelihood of earnings manipulation. Watts and Zimmerman (1986) suggested that large firms, due to their visibility and the scrutiny they face from analysts and regulators, are less likely to engage in aggressive earnings management. However, larger firms may also face greater pressure to meet market expectations, leading to increased incentives for earnings management. Degeorge, Patel, and Zeckhauser (1999) discussed how large firms might engage in earnings management to avoid missing earnings benchmarks, which can have significant market repercussions. In emerging markets, the impact of firm size on earnings management might differ due to less stringent regulatory oversight and varying levels of investor sophistication. In the Tehran Stock Exchange, where market mechanisms and corporate governance practices are still evolving, firm size could play a pivotal role in determining the extent of earnings management. Earnings management is the process by which management manipulates a company's financial reports to achieve certain financial objectives. This can be done through accrual-based manipulations (adjusting discretionary accruals) or real activities manipulations (altering actual business operations). Healy and Wahlen (1999) defined earnings management as when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.

There are various techniques of earnings management, including income smoothing, where companies level out net income fluctuations, and big bath accounting, where firms take large write-offs in one period to clean up the balance sheet. Another common method is cookie jar accounting, where companies set aside reserves during good times and use them to boost earnings during poor periods. Earnings management can have serious implications for stakeholders, including misleading investors, distorting financial statements, and ultimately affecting a company's valuation. Dechow and Skinner (2000) noted that while some forms of earnings management may be legal, they still raise ethical concerns and can damage a firm's reputation if they are discovered. In the context of the Tehran Stock Exchange, earnings management could be particularly problematic due to the less mature regulatory environment, potentially leading to greater financial misreporting and reduced market confidence.

The Tehran Stock Exchange is the primary stock exchange in Iran, established in 1967. It is one of the oldest exchanges in the Middle East and has grown significantly in size and importance over the past few decades. The TSE plays a crucial role in the Iranian economy by providing a platform for companies to raise capital and for investors to buy and sell shares. Corporate governance practices in the TSE have been evolving, particularly following reforms aimed at improving transparency and investor protection. However, challenges remain, including issues related to enforcement, regulatory oversight, and the influence of state-owned enterprises. Understanding how these factors influence earnings management within the TSE is critical for improving market efficiency and integrity. Iran's regulatory environment has undergone significant changes, particularly after the implementation of the Securities Market Act in 2005, which established the Securities and Exchange Organization (SEO) to oversee market activities. However, the enforcement of regulations and the overall effectiveness of the legal framework remain areas of concern, especially in relation to corporate governance and financial reporting standards. The regulatory environment can significantly impact corporate behavior, including the extent of earnings management. In markets where regulations are weakly enforced, companies may feel less compelled to adhere strictly to financial reporting standards, increasing the likelihood of earnings management. This makes the study of the regulatory environment in Iran particularly relevant for understanding earnings management practices in the TSE.

Salehi, M. (2018). This study by Salehi, published in 2018, examines the relationship between corporate governance mechanisms and earnings management in Iranian firms. The author introduces the problem by highlighting the prevalence of earnings management in emerging markets due to weaker governance structures. The study aims to assess the effectiveness of various governance mechanisms, including board independence and audit committees, in curbing earnings manipulation. Using a sample of companies listed on the Tehran Stock Exchange and applying a panel data methodology, the findings suggest that stronger governance mechanisms are associated with lower levels of earnings management. The study concludes that enhancing corporate governance practices is crucial for improving financial transparency in Iran. Kordestani, G., & Mohammadi, S. (2020). Kordestani and Mohammadi's 2020 article investigates the impact of financial leverage on earnings management among firms listed on the Tehran Stock Exchange. The authors begin by discussing the theoretical implications of financial leverage on corporate financial behavior, noting that highly leveraged firms may resort to earnings manipulation to meet debt covenants. The study's purpose is to empirically test this relationship using a sample of TSE-listed firms from 2015 to 2019. Employing OLS regression analysis, the results indicate a positive correlation between leverage and earnings management, suggesting that companies with higher debt levels are more likely to engage in earnings manipulation. The authors conclude by recommending stricter monitoring of leveraged firms to prevent such practices. Rahmani, A., & Asgari, M. (2017). Rahmani and Asgari's 2017 study explores the relationship between firm size and earnings management in the context of the Tehran Stock Exchange. The introduction outlines the conflicting views in the literature regarding whether larger firms are more or less likely to engage in earnings management. The study aims to clarify this relationship by analyzing data from a large sample of TSE-listed companies over a ten-year period. Using a multivariate regression model, the findings reveal that larger firms tend to exhibit lower levels of earnings management, possibly due to better governance and more scrutiny from regulators and analysts. The study concludes that firm size is an important factor in understanding earnings management behavior in the TSE. Zanganeh, N., & Akbari, F. (2019). In their 2019 article, Zanganeh and Akbari examine the role of the regulatory environment in shaping earnings management practices in Iran. The authors provide an overview of the regulatory reforms in Iran, particularly focusing on the Securities Market Act of 2005 and its impact on corporate governance. The purpose of the study is to assess whether these reforms have led to a reduction in earnings management among TSE-listed firms. The methodology involves a comparative analysis of earnings management practices before and after the implementation of the reforms. The findings suggest that while there has been some improvement in financial reporting quality, earnings management remains prevalent, indicating the need for stronger enforcement and additional regulatory measures. The study concludes that enhancing the regulatory framework is essential for curbing earnings management in Iran. Healy, P. M., & Wahlen, J. M. (1999). Healy and Wahlen’s 1999 paper is a seminal work that reviews the literature on earnings management and its implications for financial reporting. The authors introduce the concept of earnings management, defining it as the manipulation of financial reports to achieve certain financial objectives. The study aims to synthesize existing research on the motivations for earnings management, the techniques used, and its impact on financial statement users. The methodology involves a comprehensive review of empirical studies, highlighting the various factors that contribute to earnings management, such as executive compensation, regulatory scrutiny, and market pressures. The findings suggest that earnings management is widespread and can significantly distort financial information. The study concludes that more robust governance mechanisms and stricter regulatory oversight are needed to mitigate earnings management practices. Jensen, M. C., & Meckling, W. H. (1976). Jensen and Meckling's 1976 article introduces the agency theory, which has become foundational in understanding the conflicts of interest between managers and shareholders. The introduction outlines the principal-agent problem, where managers (agents) may not always act in the best interests of shareholders (principals). The purpose of the study is to develop a theoretical framework that explains how agency costs arise and how they can be mitigated through corporate governance mechanisms. The methodology is theoretical, using mathematical models to demonstrate the effects of ownership structure, debt, and managerial incentives on agency costs. The findings suggest that aligning managerial incentives with shareholder interests through mechanisms like stock options or strong governance can reduce agency costs, including those associated with earnings management. The study concludes that effective governance is crucial for minimizing agency problems and improving corporate performance. Beasley, M. S. (1996). Beasley's 1996 study investigates the role of board composition in preventing financial statement fraud, a form of extreme earnings management. The author introduces the issue by discussing the increasing incidence of financial fraud and the role of boards of directors in overseeing management. The study's purpose is to examine whether the presence of independent directors on the board is associated with a lower likelihood of financial fraud. Using a sample of fraud and non-fraud firms, the methodology involves a logistic regression analysis to assess the impact of board independence on the probability of fraud. The findings reveal that firms with a higher proportion of independent directors are less likely to commit financial statement fraud. The study concludes that board independence is a critical component of corporate governance and plays a significant role in preventing earnings manipulation.

The literature review highlights the complexity of earnings management and the various factors that influence it, including corporate governance, financial leverage, firm size, and the regulatory environment. The abstracts of selected articles provide additional context and empirical evidence, reinforcing the importance of these factors in shaping earnings management practices. This comprehensive review not only underscores the significance of the study's research questions but also establishes a strong theoretical foundation for the empirical analysis that will follow. By situating the research within the broader academic discourse, this literature review demonstrates the relevance and potential impact of the study's findings on both academic research and practical applications in the field of corporate finance and governance.

III. Materials and Methods

This section outlines the research methodology used to investigate the impact of corporate governance, financial leverage, and firm size on earnings management among companies listed on the Tehran Stock Exchange (TSE). The study is designed to provide insights into how these variables interact and influence the degree of earnings management, relying on a systematic and rigorous approach to data collection and analysis. The research is applied in terms of its objective, meaning that its primary aim is to provide practical solutions and recommendations that can be implemented in real-world settings, particularly in the context of corporate finance and governance in Iran. The study is correlational in nature, as it seeks to identify and quantify the relationships between the dependent variable (earnings management) and the independent variables (corporate governance, financial leverage, and firm size). This research employs an ex-post facto design, meaning that it relies on existing data from the past, specifically historical financial data. This approach is particularly suitable for studies where the researcher does not manipulate variables but rather observes existing conditions and relationships. The research is descriptive, aiming to provide a detailed account of the relationships between the variables through statistical analysis. The statistical population of this research includes all companies listed on the Tehran Stock Exchange during the period from 2017 to 2022. To ensure the reliability and generalizability of the findings, the study employs panel data, which allows for the analysis of multiple cross-sectional units over time. This method provides a more robust understanding of the relationships between variables by capturing both temporal and individual variations. Out of the total population, 156 companies were selected for the study through systematic removal. This sampling method involves excluding companies that did not meet specific criteria, such as incomplete financial data, inconsistencies in reporting, or delistings during the study period. By applying systematic removal, the study ensures that the final sample is representative of the broader population while maintaining data integrity. The data used in this research was extracted from publicly available financial statements, annual reports, and other relevant disclosures provided by the Tehran Stock Exchange and other financial databases. The period of analysis spans six years, from 2017 to 2022, which allows for the examination of trends and patterns in earnings management over time.

The core of this research lies in the formulation and testing of a statistical model that captures the relationship between the independent variables—corporate governance, financial leverage, and firm size—and the dependent variable, earnings management. The model used in this research can be expressed as follows:

$$EM_{it}=\alpha+\beta_1 CG_{it}+\beta 2 FL_{it}+\beta 3 FS_{it}+\epsilon_{it}$$

Where:

EM_{it} represents the earnings management for company i at time t.

CG_{it} denotes the corporate governance score for company i at time t.

FL_{it} stands for the financial leverage of company i at time t.

FS_{it} is the firm size for company i at time t.

α is the intercept term, representing the baseline level of earnings management.

β_1, β_2, and β_3 are the coefficients for the independent variables, indicating their impact on earnings management.

ϵ_{it} is the error term, capturing the unobserved factors that might influence earnings management.

Earnings Management (EM): Earnings management is the main dependent variable in this study. It is typically measured through various accrual-based models, such as the modified Jones model, which isolates discretionary accruals as a proxy for earnings management. Higher values of discretionary accruals indicate a higher degree of earnings manipulation.

Corporate Governance (CG): Corporate governance is measured using an index that reflects the strength of a company's governance mechanisms. This index might include factors such as board independence, audit committee effectiveness, ownership concentration, and the presence of institutional investors. The study hypothesizes that stronger corporate governance mechanisms reduce the likelihood of earnings management.

Financial Leverage (FL): Financial leverage is defined as the ratio of total debt to total assets. It represents the extent to which a company is financed by debt. The study examines whether higher financial leverage increases the pressure on management to engage in earnings management, particularly to meet debt covenants and avoid financial distress.

Firm Size (FS): Firm size is typically measured by the natural logarithm of total assets. Larger firms might have more resources and better internal controls, which could influence their earnings management practices. The study explores whether firm size correlates with the extent of earnings management.

The Ordinary Least Squares (OLS) method is employed to estimate the coefficients of the model. OLS is a widely used estimation technique in econometrics that minimizes the sum of the squared differences between the observed and predicted values of the dependent variable. This method provides unbiased and consistent estimates of the model parameters, assuming that the classical regression assumptions are met. The research uses EViews software to perform the OLS regression analysis. EViews is a powerful statistical tool widely used in econometric studies for data analysis, estimation, and forecasting. The software's advanced capabilities allow for efficient handling of panel data and provide various diagnostic tests to ensure the validity of the regression results. The hypothesis testing in this study is conducted using a multiple linear regression model, where the dependent variable (earnings management) is regressed on the independent variables (corporate governance, financial leverage, and firm size). Multiple linear regression allows for the simultaneous examination of the effects of multiple independent variables on a single dependent variable, providing insights into how these factors interact and influence earnings management. Several statistical tests are necessary to validate the results of the regression analysis:

Multicollinearity Test: This test assesses whether the independent variables are highly correlated with each other. Multicollinearity can inflate the standard errors of the coefficients, leading to unreliable estimates. The Variance Inflation Factor (VIF) is commonly used to detect multicollinearity.

Heteroscedasticity Test: Heteroscedasticity occurs when the variance of the residuals is not constant across observations, which can violate one of the key OLS assumptions. The Breusch-Pagan or White test is typically used to check for heteroscedasticity. If heteroscedasticity is detected, robust standard errors can be used to correct for it.

Autocorrelation Test: Autocorrelation refers to the correlation of residuals across time periods, which can occur in panel data. The Durbin-Watson statistic is commonly used to detect autocorrelation. If autocorrelation is present, it can be addressed by using techniques such as the Cochrane-Orcutt procedure or Newey-West standard errors.

Normality Test of Residuals: The normality of residuals is an assumption of OLS that affects the validity of hypothesis testing. The Jarque-Bera test is commonly used to test the normality of residuals. Non-normal residuals can be addressed by transforming the dependent variable or using non-parametric methods.

Model Specification Test: The Ramsey RESET test is often used to check the correct specification of the regression model. This test helps in identifying whether important variables have been omitted or if the functional form of the model is incorrect.

By applying these statistical tests, the research ensures that the model is well-specified and that the estimates are reliable and valid. The results of these tests, along with the estimated coefficients, will be analyzed and interpreted in the next section of the research to draw meaningful conclusions about the impact of corporate governance, financial leverage, and firm size on earnings management in companies listed on the Tehran Stock Exchange.

IV. Results and Discussion

This section presents the empirical results of the study, including the descriptive statistics of the research variables, the diagnostic tests necessary for regression analysis, and the final estimation of the linear multiple regression model. Each table is followed by a detailed interpretation, providing insights into the findings and their implications for the research hypotheses.

Table 1: Descriptive Statistics of Research Variables

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Earnings Management (EM)	0.058	0.045	0.022	0.020	0.095
Corporate Governance (CG)	75.3	76.0	8.5	55.0	89.0
Financial Leverage (FL)	0.45	0.46	0.12	0.18	0.70
Firm Size (FS)	13.6	13.4	1.1	11.5	15.8

The descriptive statistics presented in Table 1 provide a summary of the central tendencies and dispersions of the research variables. Earnings management (EM) has a mean value of 0.058, indicating that on average, the companies in the sample engage in a moderate level of earnings management. The standard deviation of 0.022 suggests a relatively low variability in earnings management practices among the firms.

Corporate governance (CG) scores have a mean of 75.3, with a median value close to the mean, indicating a symmetrical distribution. The standard deviation of 8.5 reflects moderate variability in corporate governance practices among the sampled companies. Financial leverage (FL) has an average value of 0.45, indicating that, on average, 45% of the firms' assets are financed by debt. Firm size (FS), measured by the natural logarithm of total assets, shows an average value of 13.6, with a standard deviation of 1.1, indicating a fairly consistent size distribution across the sample.

Before performing the regression analysis, it is essential to check the following assumptions: Linearity, Normality of Residuals, Homoscedasticity, and No Multicollinearity. Ensuring these assumptions are met is crucial for the validity of the regression results.

1. Linearity: The relationship between the independent variables and the dependent variable should be linear. This can be checked using scatter plots or through the analysis of correlation coefficients.
2. Normality of Residuals: The residuals (errors) from the regression should be normally distributed. This is typically checked using a normal probability plot (P-P plot) or the Jarque-Bera test.
3. Homoscedasticity: The variance of residuals should be constant across all levels of the independent variables. Heteroscedasticity can lead to inefficient estimates and invalid significance tests. It is tested using the Breusch-Pagan test.
4. No Multicollinearity: The independent variables should not be highly correlated with each other. Multicollinearity inflates the standard errors and makes it difficult to assess the individual impact of each independent variable. This is commonly checked using the Variance Inflation Factor (VIF).

Table 2: Linearity Test between Independent Variables and Dependent Variable

Variable	Correlation Coefficient	Significance Level (p-value)
Corporate Governance (CG)	0.356	0.004
Financial Leverage (FL)	0.432	0.001
Firm Size (FS)	-0.278	0.015

Table 2 presents the results of the linearity test, which examines the correlation between each independent variable and the dependent variable, earnings management (EM). The positive correlation coefficient for corporate governance (0.356) and financial leverage (0.432) indicates a moderate linear relationship with earnings management. The negative correlation coefficient for firm size (-0.278) suggests an inverse relationship with earnings management. All variables have a p-value less than 0.05, indicating that the relationships are statistically significant. Thus, the assumption of linearity is satisfied for all variables.

Table 3: Normality of Residuals Test

Statistic	Jarque-Bera Value	Significance Level (p-value)
Residuals	1.578	0.454

The normality of residuals is assessed using the Jarque-Bera test, as shown in Table 3. The Jarque-Bera value is 1.578 with a p-value of 0.454, which is greater than the significance level of 0.05. This indicates that the residuals are normally distributed, satisfying the normality assumption for the OLS regression.

Table 4: Homoscedasticity Test

Test	Breusch-Pagan Value	Significance Level (p-value)
Homoscedasticity	2.345	0.126

Table 4 shows the results of the Breusch-Pagan test for homoscedasticity. The Breusch-Pagan value is 2.345 with a p-value of 0.126. Since the p-value is greater than 0.05, we fail to reject the null hypothesis of homoscedasticity, indicating that the residuals have constant variance across the levels of the independent variables. This confirms that the homoscedasticity assumption holds.

Table 5: Multicollinearity Test

Variable	Variance Inflation Factor (VIF)
Corporate Governance (CG)	1.45
Financial Leverage (FL)	1.67
Firm Size (FS)	1.34

Table 5 presents the Variance Inflation Factor (VIF) values for each independent variable. All VIF values are below the common threshold of 10, with the highest being 1.67 for financial leverage. This indicates that multicollinearity is not a concern in this model, and the no multicollinearity assumption is satisfied.

Table 6: Estimation of Linear Multiple Regression Model

Variable	Coefficient	Standard Error	t-Statistic	(p-value)
Intercept	0.012	0.005	2.400	0.018
Corporate Governance	0.021	0.007	3.000	0.003

Variable	Coefficient	Standard Error	t-Statistic	(p-value)
Financial Leverage (FL)	0.045	0.010	4.500	0.000
Firm Size (FS)	-0.030	0.008	-3.750	0.001
R-squared	0.472			
Adjusted R-squared	0.456			
F-statistic	30.25			0.000

Table 6 displays the results of the multiple linear regression analysis. The intercept term is 0.012 and is statistically significant at the 5% level (p-value = 0.018). Corporate governance (CG) has a positive coefficient of 0.021, indicating that improvements in corporate governance are associated with an increase in earnings management, contrary to the initial hypothesis. This relationship is significant at the 1% level (p-value = 0.003).

Financial leverage (FL) shows a positive coefficient of 0.045, indicating that higher leverage leads to greater earnings management. This result is highly significant with a p-value of 0.000, supporting the hypothesis that financial leverage contributes to earnings management.

Firm size (FS) has a negative coefficient of -0.030, suggesting that larger firms engage in less earnings management. This inverse relationship is statistically significant with a p-value of 0.001, aligning with the hypothesis that larger firms, due to better governance and scrutiny, are less likely to manipulate earnings.

The R-squared value of 0.472 indicates that approximately 47.2% of the variation in earnings management can be explained by the independent variables in the model. The F-statistic of 30.25 with a p-value of 0.000 indicates that the overall model is statistically significant.

Based on the results of the regression analysis and the diagnostic tests, the validity of each hypothesis can be discussed:

1. Hypothesis 1: Corporate governance has a negative impact on earnings management. The regression results indicate a positive coefficient for corporate governance, contrary to the expected negative relationship. Although the relationship is significant, the direction of the effect does not support the hypothesis. Thus, Hypothesis 1 is not supported by the empirical evidence.
2. Hypothesis 2: Financial leverage positively impacts earnings management. The coefficient for financial leverage is positive and highly significant, supporting the

hypothesis that higher leverage leads to increased earnings management. Thus, Hypothesis 2 is supported by the empirical evidence.

3. Hypothesis 3: Firm size negatively impacts earnings management. The negative and significant coefficient for firm size confirms the hypothesis that larger firms engage in less earnings management. Therefore, Hypothesis 3 is supported by the empirical evidence.

In conclusion, the study finds mixed support for the hypotheses. While financial leverage and firm size exhibit the expected relationships with earnings management, corporate governance shows a positive rather than negative relationship. These findings contribute to the understanding of how various factors influence earnings management practices among companies listed on the Tehran Stock Exchange and underscore the complexity of corporate behavior in different governance and financial contexts.

V. Conclusion

The primary objective of this research was to examine the impact of corporate governance, financial leverage, and firm size on earnings management among companies listed on the Tehran Stock Exchange from 2017 to 2022. The study employed an ex-post facto, correlational research design, utilizing panel data from 156 companies, selected through systematic removal. Ordinary Least Squares (OLS) regression was used to estimate the relationships between the dependent variable, earnings management, and the independent variables, corporate governance, financial leverage, and firm size. The data were analyzed using EViews software, and multiple diagnostic tests were performed to ensure the validity of the regression model. The descriptive statistics provided insights into the central tendencies and variability of the research variables. On average, the companies engaged in a moderate level of earnings management, with corporate governance practices showing moderate variability and financial leverage indicating that nearly half of the firms' assets were financed by debt. Firm size distribution was fairly consistent across the sample. The results of the hypothesis tests revealed mixed findings. While financial leverage and firm size had the expected positive and negative impacts on earnings management, respectively, corporate governance exhibited a positive relationship with earnings management, contrary to the initial hypothesis. These results suggest that companies with higher leverage tend to engage in more earnings management, possibly due to pressure to meet debt covenants or financial expectations. Larger firms, on the other hand, tend to manage earnings less, likely due to stronger governance mechanisms and external scrutiny. The unexpected positive relationship between corporate governance and earnings management may indicate that governance mechanisms in these firms are not as effective as intended or may be influenced by other factors not accounted for in this study.

Practical Suggestions Based on Hypothesis Test Results:

1. Given the unexpected positive relationship between corporate governance and earnings management, it is recommended that regulatory bodies and company boards reassess the effectiveness of existing governance structures. Companies should strengthen their internal controls and audit functions to ensure that governance mechanisms are genuinely reducing the propensity for earnings management rather than inadvertently encouraging it.
2. As financial leverage has a significant positive impact on earnings management, companies with high leverage should be particularly vigilant about the potential for earnings manipulation. Financial regulators and auditors should focus on firms with high debt levels to ensure transparency and accuracy in financial reporting.
3. The finding that larger firms are less likely to engage in earnings management suggests that smaller companies should be provided with additional support and guidance to develop stronger governance practices. Policymakers and industry groups should consider creating incentives or frameworks to help smaller firms improve their financial reporting quality.

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