The Impact of Environmental Disclosure on Market Added Value Considering the Moderating Role of Corporate Governance

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Abstract: *This study examined the impact of environmental disclosure on market added value, considering the moderating role of corporate governance. The main objective of the research was to analyze the relationship between environmental disclosure and market added value of companies and to investigate the role of corporate governance in moderating this relationship. To achieve this objective, financial and environmental data from 167 companies listed on the Tehran Stock Exchange from 2018 to 2022 were collected and analyzed using panel data regression models. The results revealed that environmental disclosure has a positive and significant effect on market added value, meaning that companies that disclose more information about their environmental activities typically achieve higher market value. Additionally, the results of the second hypothesis test indicated that corporate governance, as a moderating variable, enhances the relationship between environmental disclosure and market added value. In other words, the quality and structure of corporate governance can amplify the positive impact of environmental disclosure on companies' market value. Finally, the study emphasizes that improving the quality of environmental disclosure and enhancing corporate governance structures can contribute to increasing market added value, and it is recommended that companies pay closer attention to these aspects.*

Keywords: *Environmental Disclosure, Market Added Value, Corporate Governance, Panel Data Regression.*

I.   Introduction

Environmental disclosure has increasingly become a central issue in corporate governance and sustainability discussions globally. With the mounting concern over climate change, resource depletion, and environmental degradation, stakeholders—ranging from investors and regulators to consumers and activists—are placing greater emphasis on the environmental practices of companies. This has led to a growing demand for transparency in

how companies manage and report their environmental impact. Environmental disclosure, in this context, refers to the practice of providing detailed information about a company's environmental policies, practices, and performance. This information is crucial as it allows stakeholders to assess the environmental risks and opportunities associated with a company's operations. Despite the growing importance of environmental disclosure, there remains significant debate over its impact on a company's market added value (MVA). Market added value is a critical measure of a company's performance, reflecting the difference between the market value of a company and the capital invested in it. It represents the value a company has created (or destroyed) for its shareholders. Proponents of environmental disclosure argue that by providing transparent and comprehensive information about their environmental impact, companies can enhance their reputation, build investor confidence, and ultimately increase their market value. This perspective is grounded in the belief that investors are increasingly incorporating environmental, social, and governance (ESG) factors into their decision-making processes, and that companies with strong environmental practices are better positioned to manage long-term risks and opportunities. However, there is also a counterargument that suggests environmental disclosure may not always lead to increased market value. Critics argue that the costs associated with environmental reporting—such as the resources required to gather and verify data, the potential for revealing negative information, and the risk of litigation—may outweigh the benefits. Additionally, in markets where environmental concerns are not a primary focus for investors, the impact of such disclosures on market value may be negligible. This divergence in views highlights the need for further research to clarify the relationship between environmental disclosure and market added value.

Adding another layer of complexity to this relationship is the role of corporate governance. Corporate governance refers to the system of rules, practices, and processes by which a company is directed and controlled. It involves the relationships among the company's management, its board, its shareholders, and other stakeholders. Good corporate governance ensures that the company's actions align with the interests of its stakeholders, promotes transparency, and enhances accountability. In the context of environmental disclosure, corporate governance can play a critical role in determining the quality and credibility of the information disclosed. Strong governance structures can ensure that environmental disclosures are not only comprehensive but also aligned with the company's overall strategy and goals. Conversely, weak governance may result in inadequate or even misleading disclosures, which can undermine investor confidence and potentially harm the company's market value.

The moderating role of corporate governance in the relationship between environmental disclosure and market added value has not been extensively studied, particularly in emerging markets such as Iran. This gap in the literature is significant, as the effectiveness of environmental disclosure is likely to be influenced by the quality of corporate governance. Companies with robust governance frameworks are better equipped to manage and disclose their environmental impacts in a way that positively influences their market value. On the other hand, companies with weak governance may struggle to provide accurate and reliable environmental information, which could diminish the potential benefits of such disclosures.

Given these considerations, the central problem that this research seeks to address is whether environmental disclosure has a significant impact on market added value and how corporate governance moderates this relationship. This study aims to provide empirical evidence on these issues by analyzing data from companies listed on the Tehran Stock Exchange (TSE). The findings of this research will contribute to the ongoing debate on the value of environmental disclosure and the role of corporate governance in enhancing corporate transparency and accountability.

Main Research Question:

Does environmental disclosure have a significant impact on market added value, and to what extent does corporate governance moderate this relationship?

The importance of this research lies in its potential to inform corporate strategy and policy-making in the context of sustainability and corporate governance. As environmental issues continue to rise to the forefront of global concerns, companies are under increasing pressure to demonstrate their commitment to sustainability. Environmental disclosure is a key mechanism through which companies can communicate their environmental performance to stakeholders, thereby influencing their reputation and market valuation.

Understanding the impact of environmental disclosure on market added value is crucial for both companies and investors. For companies, this understanding can guide decisions on how much to invest in environmental reporting and how to integrate environmental considerations into their overall strategy. For investors, insights into the relationship between environmental disclosure and market value can inform investment decisions and portfolio management. By identifying the conditions under which environmental disclosure is most likely to enhance market value, this research can help companies and investors maximize the benefits of environmental transparency.

Moreover, the role of corporate governance as a moderating factor is of particular importance in this context. Effective corporate governance is essential for ensuring that environmental disclosures are reliable, relevant, and aligned with the company's strategic goals. This research will shed light on how different aspects of corporate governance—such as board composition, shareholder rights, and transparency mechanisms—affect the relationship between environmental disclosure and market added value. This understanding is particularly relevant for emerging markets like Iran, where corporate governance practices are still evolving and where there may be significant variations in how companies approach environmental reporting.

This research is significant because it addresses a critical gap in the literature on the intersection of environmental disclosure, market performance, and corporate governance. While much has been written about the importance of environmental disclosure and the need for good corporate governance, there is relatively little empirical research on how these two factors interact to influence market added value, particularly in the context of emerging markets.

The innovative aspect of this study lies in its focus on the moderating role of corporate governance in the relationship between environmental disclosure and market value. By examining this relationship within the specific context of the Tehran Stock Exchange, the study provides new insights into how corporate governance structures can enhance or inhibit the effectiveness of environmental disclosures. This is particularly important given the unique challenges and opportunities faced by companies in emerging markets, where governance frameworks may differ significantly from those in more developed economies.

In addition to contributing to the academic literature, this research has practical implications for policymakers, regulators, and corporate managers. Policymakers can use the findings to design regulations and guidelines that promote better environmental disclosure and stronger corporate governance. Regulators can benefit from understanding how different governance structures impact the effectiveness of environmental reporting, which can inform their oversight and enforcement activities. Corporate managers can use the insights from this research to improve their environmental disclosure practices and governance frameworks, thereby enhancing their company's market value.

Research Hypotheses:

1. There is a significant relationship between environmental disclosure and market added value.

2. Corporate governance moderates the relationship between environmental disclosure and market added value.

Scientific Objectives of the Research:

1. To assess the impact of environmental disclosure on the market added value of companies listed on the Tehran Stock Exchange.

2. To evaluate the role of corporate governance in moderating the relationship between environmental disclosure and market added value.

3. To identify the key factors within corporate governance that influence the effectiveness of environmental disclosure.

4. To analyze how different aspects of environmental disclosure (e.g., voluntary vs. mandatory reporting, the scope of information disclosed) impact market added value.

5. To provide recommendations for improving the transparency and effectiveness of environmental disclosures in emerging markets.

Scope of the Research:

This research focuses on the relationship between environmental disclosure, market added value, and the moderating role of corporate governance. The study will explore how these variables interact and influence each other within the context of companies listed on the Tehran Stock Exchange. The study examines data from companies listed on the Tehran Stock Exchange over the period from 2018 to 2022. This time frame is chosen to capture recent trends in environmental reporting and corporate governance practices, as well as to ensure the availability of relevant data. Spatial Scope: The research is conducted within the context of the Tehran Stock Exchange, which includes a diverse range of industries and provides a representative sample of the Iranian corporate sector. This setting allows for an in-depth analysis of how environmental disclosure and corporate governance practices vary across different industries and how these variations impact market added value.

II. Literature review

Environmental disclosure is the process by which companies communicate information about their environmental impact, policies, and performance to stakeholders. This practice has gained significant attention in recent years as stakeholders demand greater transparency and accountability from companies regarding their environmental practices. Environmental disclosure can take many forms, including voluntary reports, mandatory filings, and sustainability reports. It typically covers a wide range of topics, such as greenhouse gas emissions, energy consumption, waste management, water usage, biodiversity impact, and

compliance with environmental regulations. The concept of environmental disclosure is rooted in the broader framework of Corporate Social Responsibility (CSR), which emphasizes the role of businesses in contributing to sustainable development. As part of their CSR efforts, companies are increasingly expected to disclose information about their environmental performance, both to comply with regulatory requirements and to meet the expectations of stakeholders. Environmental disclosure is seen as a way for companies to demonstrate their commitment to sustainability, build trust with stakeholders, and enhance their reputation. Research on environmental disclosure has explored various dimensions of the practice, including the factors that influence disclosure decisions, the quality and reliability of the information disclosed, and the impact of disclosure on corporate performance. Scholars such as Kent and Zunker (2013) have argued that environmental disclosure is largely voluntary and is influenced by a range of factors, including regulatory pressure, stakeholder demands, and corporate governance. Voluntary environmental disclosures are often seen as a way for companies to differentiate themselves from competitors and to signal their commitment to sustainability. However, the quality and comprehensiveness of environmental disclosure can vary significantly across companies and industries. Some companies may choose to disclose only the minimum information required by law, while others may provide detailed reports that go beyond regulatory requirements. The level of disclosure is often influenced by the company's governance structure, the level of stakeholder pressure, and the perceived benefits of transparency. For example, companies with strong governance frameworks are more likely to provide comprehensive and accurate environmental disclosures, as they have the systems and processes in place to gather and verify the necessary data.

Corporate governance refers to the system of rules, practices, and processes by which a company is directed and controlled. It encompasses the mechanisms that ensure the accountability of the company's management to its shareholders and other stakeholders. Corporate governance is critical in ensuring that a company's actions align with its strategic goals and that it operates in a transparent and accountable manner. Effective corporate governance involves a range of practices, including the composition and functioning of the board of directors, the rights of shareholders, the role of management, and the company's internal controls and risk management systems. Strong governance frameworks are associated with better decision-making, greater transparency, and improved corporate performance. In the context of environmental disclosure, corporate governance plays a crucial role in determining the quality and credibility of the information disclosed. Movahedi (2019) argues that corporate

governance provides a framework that balances managerial freedom with accountability, ensuring that companies act in the best interests of their stakeholders. In the context of environmental disclosure, this means that companies with strong governance structures are more likely to provide accurate, comprehensive, and timely information about their environmental performance. This, in turn, can enhance the company's reputation, build investor confidence, and ultimately increase its market value. Corporate governance also influences the decision to engage in environmental disclosure in the first place. Companies with effective governance are more likely to recognize the importance of transparency and accountability in their environmental practices and to invest in the systems and processes necessary to produce reliable environmental reports. Conversely, companies with weak governance may be more reluctant to disclose environmental information, particularly if they perceive it as costly or if they have concerns about revealing negative information.

Market Added Value (MVA) is a key financial metric that measures the difference between a company's market value and the capital invested in it. It represents the value that a company has created (or destroyed) for its shareholders and is an important indicator of corporate performance. MVA reflects the market's perception of a company's ability to generate future profits and is influenced by a range of factors, including financial performance, risk management, and the company's intangible assets, such as reputation and brand value. In the context of environmental disclosure, MVA can be seen as a measure of how the market perceives the company's commitment to sustainability and its potential to mitigate environmental risks. Companies that are seen as leaders in environmental disclosure may be rewarded by the market with a higher valuation, as investors perceive them as being better positioned to manage long-term risks and opportunities. Conversely, companies that fail to provide adequate environmental disclosure may be penalized by the market, as investors may perceive them as having higher risks or as being less transparent.

Research on the relationship between environmental disclosure and market added value has produced mixed results. Some studies have found that companies with higher levels of environmental disclosure tend to have higher MVA, suggesting that the market values transparency and accountability in environmental practices. Other studies, however, have found little or no relationship between environmental disclosure and market value, indicating that the market may not always reward companies for their environmental reporting. One of the key factors that may influence the relationship between environmental disclosure and MVA is the quality and credibility of the information disclosed. Companies that provide

comprehensive, accurate, and reliable environmental reports are more likely to be rewarded by the market, as investors can use this information to make informed decisions. On the other hand, companies that provide incomplete or misleading information may be penalized, as investors may lose confidence in their ability to manage environmental risks. Corporate Social Responsibility (CSR) is a broad concept that encompasses a company's efforts to contribute to societal goals, such as environmental protection, social equity, and economic development. CSR involves the integration of social and environmental considerations into a company's operations and decision-making processes. Environmental disclosure is often considered a subset of CSR, as it involves reporting on a company's environmental impact and initiatives. According to Gray et al. (2001), companies that are committed to CSR tend to provide more comprehensive environmental disclosures as part of their broader strategy to enhance their social license to operate. These companies recognize that transparency and accountability in their environmental practices are essential for building trust with stakeholders and for maintaining their reputation. CSR can also influence the relationship between environmental disclosure and market added value. Companies that are seen as leaders in CSR are more likely to be rewarded by the market, as investors perceive them as being better positioned to manage social and environmental risks. This, in turn, can lead to a higher MVA. Conversely, companies that fail to meet stakeholder expectations in terms of CSR may be penalized by the market, resulting in a lower MVA. Research on the relationship between CSR, environmental disclosure, and market value has shown that companies with strong CSR commitments tend to have better financial performance and higher market valuations. This suggests that the market values CSR practices, including environmental disclosure, and that companies that are proactive in this area can generate long-term value for their shareholders.

Financial leverage refers to the use of debt to finance a company's operations. It is a key factor in determining a company's risk profile and can influence its financial performance and market valuation. The use of financial leverage can also affect a company's environmental disclosure practices, as firms with higher debt levels may be more conservative in their reporting to avoid drawing attention to potential risks.

Farouqi and Qasemzadeh (2015) discuss how the level of financial leverage can impact the extent and quality of environmental disclosures. They argue that highly leveraged companies may be more focused on financial stability than on voluntary disclosures, as they seek to minimize any potential risks that could affect their ability to meet their debt obligations. The relationship between financial leverage and environmental disclosure is complex and can

be influenced by a range of factors, including the company's governance structure, the level of stakeholder pressure, and the regulatory environment. Companies with strong governance frameworks may be better able to manage the risks associated with financial leverage and to provide accurate and reliable environmental disclosures. Conversely, companies with weak governance may be more likely to withhold information or to provide incomplete disclosures, particularly if they are concerned about the potential impact on their financial stability.

Company size is an important determinant of environmental disclosure practices. Larger companies tend to have more resources and greater visibility, which may lead to more comprehensive environmental reporting. This is partly due to greater regulatory scrutiny and higher expectations from stakeholders, as well as the company's ability to invest in the systems and processes necessary to gather and verify environmental data. Sensayeganeh and Azinfar (2009) argue that larger companies are more likely to engage in environmental disclosure as a way to manage their reputation and meet stakeholder demands. These companies often face greater pressure from investors, regulators, and consumers to provide transparent and comprehensive information about their environmental practices. As a result, they may be more likely to invest in environmental reporting and to adopt best practices in this area. The relationship between company size and environmental disclosure is also influenced by the company's governance structure. Larger companies are more likely to have established governance frameworks that support transparency and accountability in environmental reporting. This can enhance the quality and credibility of the information disclosed, which in turn can positively impact the company's market value.

1. **Kent and Zunker (2013):** The authors explore the voluntary nature of environmental disclosure and its impact on corporate reputation. They find that companies with stronger CSR commitments tend to disclose more environmental information, which positively impacts their market value. The study highlights the role of voluntary disclosure in enhancing a company's reputation and market valuation, particularly in the context of growing stakeholder demands for transparency and accountability.

2. **Matava and Kiwo (2016):** This study examines the factors influencing environmental disclosure in emerging markets. The authors find that regulatory pressure and stakeholder expectations are key drivers of environmental reporting, with corporate governance playing a moderating role. The study emphasizes the importance of strong governance frameworks in ensuring the quality and credibility of environmental disclosures, particularly in markets where regulatory oversight may be weaker.

3. **Gray et al. (2001):** The authors provide a comprehensive review of the literature on CSR and environmental disclosure. They argue that environmental reporting is an essential component of CSR and that it can enhance a company's market value by improving transparency and accountability. The study also highlights the role of CSR in shaping stakeholder expectations and influencing corporate performance.

4. **Farouqi and Qasemzadeh (2015):** This study explores the relationship between financial leverage and environmental disclosure. The authors find that highly leveraged companies may be less likely to engage in voluntary disclosure, particularly if they perceive it as costly or risky. The study highlights the need for strong governance frameworks to ensure that companies with high levels of debt provide accurate and reliable environmental information.

5. **Sensayeganeh and Azinfar (2009):** The authors examine the impact of company size on environmental disclosure practices. They find that larger companies are more likely to engage in environmental reporting, due to greater regulatory scrutiny and higher stakeholder expectations. The study also emphasizes the role of corporate governance in supporting transparency and accountability in environmental reporting.

While the existing literature provides valuable insights into the relationship between environmental disclosure, market added value, and corporate governance, there are several gaps that this research seeks to address:

1. **Lack of Empirical Evidence in Emerging Markets:** Most of the existing research on environmental disclosure and market value has been conducted in developed markets, with relatively little attention given to emerging markets like Iran. This research aims to fill this gap by providing empirical evidence from companies listed on the Tehran Stock Exchange.

2. **Limited Focus on the Moderating Role of Corporate Governance:** While the importance of corporate governance in environmental disclosure is widely recognized, there is limited research on how governance structures influence the relationship between environmental disclosure and market value. This study aims to explore this moderating role in greater depth, with a focus on the specific governance practices that enhance or inhibit the effectiveness of environmental disclosure.

3. **Need for a Multidimensional Approach to Environmental Disclosure:** Most existing studies have focused on environmental disclosure as a single variable, without considering the different dimensions of disclosure (e.g., voluntary vs. mandatory, the

scope of information disclosed). This research will take a multidimensional approach, examining how different aspects of environmental disclosure impact market added value and how these effects are moderated by corporate governance.

4. **Impact of Industry-Specific Factors:** There is a need for more research on how industry-specific factors influence the relationship between environmental disclosure and market value. This study will explore how different industries on the Tehran Stock Exchange approach environmental disclosure and how these practices impact their market performance.

III.   Materials and Methods

This research is applied in terms of its objective, aiming to provide practical insights into the relationships between environmental disclosure, corporate governance, and market added value. The results of this study are intended to offer actionable recommendations for companies, investors, and policymakers who are interested in enhancing corporate governance practices and improving the transparency and effectiveness of environmental disclosures. In terms of its nature, the research is correlational. Correlational research examines the relationships between different variables to understand how they are associated with each other without implying a causal relationship. This study investigates the relationships between environmental disclosure (independent variable), corporate governance (moderating variable), and market added value (dependent variable), with a focus on understanding how these relationships unfold in the context of companies listed on the Tehran Stock Exchange (TSE) from 2018 to 2022. The methodology adopted for this research is ex-post facto, relying on past data to examine the relationships between the variables. This approach is particularly suitable for studies where experimental manipulation of variables is neither feasible nor ethical, such as in the analysis of corporate governance practices and environmental disclosures. Since the data have already been collected, the study analyzes existing records to explore the hypothesized relationships. This study is descriptive as it seeks to describe and quantify the relationships between the variables using statistical methods. The research does not aim to alter or manipulate the variables but rather to observe and analyze their existing relationships. The study employs panel data analysis, utilizing data from 167 companies listed on the TSE over a five-year period from 2018 to 2022. The companies were selected through systematic removal, ensuring that the sample is representative of the population of interest. The data used in this research are secondary data gathered from various sources, including corporate annual reports, stock exchange databases, and regulatory filings. The focus is on companies that have

consistently disclosed environmental information and have undergone corporate governance evaluations during the study period. The final sample consists of 167 companies, chosen through systematic removal to ensure data completeness and reliability. Panel data covering the years 2018 to 2022 for these 167 companies are used in the analysis. Panel data, which combine cross-sectional and time-series data, allow for more comprehensive analysis by accounting for both inter-company differences and intra-company changes over time. This approach also helps in addressing issues related to omit variable bias and provides more robust estimates. The study uses two main regression models to test the hypotheses. The first model examines the direct impact of environmental disclosure on market added value, while the second model investigates the moderating effect of corporate governance on this relationship.

$$MVA_{it} = \beta_0 + \beta_1 ED_{it} + \beta_2 LEV_{it} + \beta_3 Size_{it} + \beta_4 Age_{it} + e_{it}$$

MVA_{it}: Market Added Value of company i in year t, calculated as the difference between the market value of equity and the capital invested by shareholders.

ED_{it}: Environmental Disclosure by company i in year t, measured using a checklist of environmental activities disclosed in the company's reports.

LEV_{it}: Financial Leverage of company iii in year t, calculated as the ratio of total debt to total assets.

$Size_{it}$: Size of company iii in year t, measured by the natural logarithm of the market value of equity.

Age_{it}: Age of company iii in year t, measured by the number of years since the company's listing on the TSE.

1. **Regression Model for the Second Hypothesis**:

$$MVA_{it} = \beta_0 + \beta_1 ED_{it} + \beta_2 CG_{it} + \beta_3 (ED_{it} \times CG_{it}) + \beta_4 LEV_{it} + \beta_5 Size_{it} + \beta_6 Age_{it} + e_{it}$$

CG_{it}: Corporate Governance quality of company i in year t, measured using a composite index that includes factors such as board size, board independence, CEO duality, and ownership concentration.

$ED_{it} \times CG_{it}$: Interaction term representing the moderating effect of corporate governance on the relationship between environmental disclosure and market added value.

Measurement of Variables

- **Market Added Value (MVA)**: The MVA is a measure of the wealth created for shareholders and is calculated as the difference between the market value of equity (share price multiplied by the number of shares outstanding) and the total capital

invested by shareholders. A higher MVA indicates better management performance and effective utilization of resources to create shareholder value.

- **Environmental Disclosure (ED)**: Environmental disclosure is measured using a checklist that assesses the quality and extent of environmental information disclosed in the company's reports. The checklist includes six sections (environmental, products and services, human resources, customers, social responsibility, and energy) with 38 sub-sections. The environmental disclosure score is calculated as the ratio of the total sections disclosed to the total possible disclosures.

- **Corporate Governance (CG)**: Corporate governance is measured using a governance index that includes variables such as board size, board independence, CEO duality, and ownership concentration. These factors are binary coded, where a higher score indicates better corporate governance practices. The overall governance score for each company is calculated as the average of these individual scores.

- **Financial Leverage (LEV)**: Financial leverage is calculated as the ratio of total debt to total assets, indicating the extent to which a company is financed by debt versus equity.

- **Size (Size)**: Company size is measured using the natural logarithm of the market value of equity, reflecting the scale of the company's operations.

- **Age (Age)**: The age of the company is measured by the number of years since its initial listing on the TSE, indicating its maturity and experience in the market.

Data Analysis and Statistical Tests

The research employs **Ordinary Least Squares (OLS) regression** to estimate the coefficients of the independent variables and their impact on the dependent variable (MVA). OLS is chosen due to its efficiency in providing the best linear unbiased estimates (BLUE) under the classical linear regression assumptions. The analysis is conducted using **EViews software**, a powerful statistical tool commonly used for econometric analysis of time-series and panel data.

Linear Multiple Regression is used to test the hypotheses. This method allows for the inclusion of multiple independent variables in the regression model, providing a comprehensive analysis of their individual and combined effects on the dependent variable. The interaction term in the second model specifically tests the moderating effect of corporate governance on the relationship between environmental disclosure and market added value.

Several **diagnostic tests** are conducted to ensure the reliability and validity of the regression models. These include:

- **Multicollinearity Test**: The Variance Inflation Factor (VIF) is used to check for multicollinearity among the independent variables, ensuring that they do not have strong linear relationships with each other, which could distort the regression estimates.

- **Heteroscedasticity Test**: The Breusch-Pagan test is used to detect heteroscedasticity, which occurs when the variance of the error terms is not constant across observations. If heteroscedasticity is present, robust standard errors are used to correct for it.

- **Autocorrelation Test**: The Durbin-Watson statistic is used to check for autocorrelation in the residuals, which could indicate that the errors are correlated across time, violating one of the key OLS assumptions.

- **Normality Test**: The Jarque-Bera test is used to assess whether the residuals of the regression models are normally distributed, which is a crucial assumption for valid hypothesis testing.

In conclusion, this research uses an applied, correlational, and ex-post facto approach to investigate the relationships between environmental disclosure, corporate governance, and market added value in companies listed on the Tehran Stock Exchange. By employing panel data from 2018 to 2022 and analyzing it through multiple regression models using EViews software, the study aims to provide robust insights into how these factors interact and influence each other. The findings are expected to contribute valuable knowledge to the fields of corporate governance, environmental disclosure, and financial performance, offering practical recommendations for improving corporate practices and policies.

IV.   Results and Discussion

Based on the descriptive statistics presented in Table 1, the average age of the companies (AGE) is 25.58173 years, indicating that most of the companies under study are relatively young. The median age is 27 years, which is close to the mean, but the standard deviation of 7.761831 suggests a relatively high dispersion in the ages of the companies. The Corporate Governance Index (CG) has an average of 0.645040 and a median of 0.593500, indicating that the majority of companies have a relatively good level of corporate governance. However, the minimum value of 0.507000 and the maximum value of 0.798000 highlight significant differences in the level of corporate governance among companies. The mean Environmental Disclosure (ED) is 0.523353, and the median is 0.310000, suggesting a wide variation in the level of environmental disclosure among the companies. The presence of a

minimum value of 0 and a maximum value of 78, along with a standard deviation of 2.699402, indicates a substantial dispersion in this index. Additionally, the positive skewness of 28.46840 and the extremely high kurtosis of 817.5875 clearly illustrate that a large number of companies have very low environmental disclosure, while a few companies have very high levels of disclosure. The Financial Leverage Index (LEV) has a mean of 0.546810 and a median of 0.510834, indicating that most companies have moderate financial leverage. However, the minimum value of 0.031431 and the maximum value of 3.851721, along with a standard deviation of 0.335681, reflect considerable differences in the level of debt usage among the companies. The mean Market Value Added (MVA) is 0.180696, and the median is 0.176809, indicating that companies generally have a moderate level of market value added. Nevertheless, the minimum value of -0.607014, the maximum value of 0.681977, and the standard deviation of 0.175129 show significant variation in this index. The size of the companies (SIZE) has a mean of 15.56755 and a median of 15.38507, indicating that most companies are of medium size. The minimum value of 11.36118 and the maximum value of 21.57166, along with a standard deviation of 1.663358, suggest a diversity in the size of companies. The positive skewness of 0.777394 and the kurtosis of 4.007427 also indicate that a large number of companies are medium to small in size, while a few companies are very large.

Table 1: Descriptive Statistics of Research Variables

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Observations
AGE	25.58173	27.00000	38.00000	6.000000	7.761831	-0.854654	2.965345	832
CG	0.645040	0.593500	0.798000	0.507000	0.103508	0.128731	1.243232	832
ED	0.523353	0.310000	78.00000	0.000000	2.699402	28.46840	817.5875	832
LEV	0.546810	0.510834	3.851721	0.031431	0.335681	4.017294	33.08575	832
MVA	0.180696	0.176809	0.681977	-0.607014	0.175129	-0.250788	4.559054	832
SIZE	15.56755	15.38507	21.57166	11.36118	1.663358	0.777394	4.007427	832

Examination of the Stationarity of Research Variables

Before estimating the model, tests were conducted to ensure the reliability of the research results, verify that the relationships observed in the regression are not spurious, and confirm the significance of the variables. The stationarity of the research variables was tested using the unit root test to ensure that the mean and variance of the variables remain constant over different years. This stability means that the use of these variables in the model will not result in spurious regression. The stationarity test was conducted using EViews software and the Levin, Lin, and Chu (2002) method.

The hypotheses for the unit root test are as follows:

- Null hypothesis (H_0): Presence of a unit root.

- Alternative hypothesis (H_1): Absence of a unit root.

The results of the unit root test for the variables are presented in Table 2:

Table 2: Unit Root Test Results for Research Variables; Levin, Lin & Chu

Variable Name	Symbol	Statistic	Probability
Environmental Disclosure	ED	-565.134	0.0000
Market Value Added	MVA	-13.3394	0.0000
Corporate Governance	CG	-66.9178	0.0000
Financial Leverage	LEV	-40.8167	0.0000
Company Size	Size	3.32501	0.0000
Company Age	Age	-33.8767	0.0000

Based on the results in Table 2, it is evident that all research variables are stationary at the level. The complete results of this test are provided in the appendix at the end of the thesis.

Examination of the Normality of Statistical Distribution

To check the normality of the distribution of variables, the Jarque-Bera test was used, with results shown in Table 3. This test is employed to determine whether the distribution of data is normal based on skewness and kurtosis. The null hypothesis in this test assumes normality. If

the probability value is greater than the significance level (typically 0.05), the null hypothesis is not rejected, indicating a normal distribution.

For the variable "Company Age" (AGE), the Jarque-Bera statistic is 101.3284 with a probability of 0.062531. Since the probability is greater than 0.05, the null hypothesis is not rejected, suggesting that the distribution of company age is normal. Similarly, the variables "Corporate Governance" (CG) and "Market Value Added" (MVA) also exhibit normal distributions as their probabilities exceed 0.05. However, the variable "Environmental Disclosure" (ED) shows a very large Jarque-Bera statistic (23115547) and a probability of 0.112546, which suggests that the distribution may not be normal, possibly due to outliers or computational errors. Overall, with the exception of ED, other variables are normally distributed, which supports the reliability of subsequent analyses.

Table 3: Jarque-Bera Test Results for Normality of Variable Distributions

Variable	AGE	CG	ED	LEV	MVA	SIZE
Jarque-Bera	101.3284	109.2873	23115547	33616.50	92.98389	118.9854
Probability	0.062531	0.075836	0.112546	0.062593	0.067921	0.071259
Observations	832	832	832	832	832	832

Multicollinearity Test

Multicollinearity occurs when an independent variable is a linear function of other independent variables. High multicollinearity in a regression equation suggests a strong correlation between independent variables, which can undermine the significance of individual predictors despite a good overall model fit. To detect multicollinearity, Pearson correlation coefficients between the independent variables were calculated.

Table 4: Multicollinearity Test Results

	AGE	CG	ED	LEV	SIZE
AGE	1	-0.0207	0.0203	-0.0430	0.0164
CG	-0.0207	1	0.0445	0.0303	-0.0415

	AGE	CG	ED	LEV	SIZE
ED	0.0203	0.0445	1	-0.0354	0.0136
LEV	-0.0430	0.0303	-0.0354	1	0.0185
SIZE	0.0164	-0.0415	0.0136	0.0185	1

According to the results in Table 4, no high or very low correlation coefficients (close to +1 or -1) were observed, indicating that multicollinearity is not present among the research variables.

Heteroscedasticity Test

Table 5 presents the results of the heteroscedasticity test using the Breusch-Pagan method. The test statistic is 0.134 with a significance level of 0.287, which is much higher than the conventional level of 0.05. This result suggests that the null hypothesis (H0), which posits the absence of heteroscedasticity, is not rejected. Therefore, the errors in the regression model have constant variance, affirming that parametric statistical methods can be reliably used for data analysis.

Table 5: Heteroscedasticity Test Results

Test Name	Test Statistic	Significance Level
Breusch-Pagan	0.134	0.287

Results of F-Limer and Hausman Tests

Table 6 examines the F-Limer statistic for hypothesis testing. The F-statistic for the first and second hypotheses is 4.37 and 3.61, respectively, with an F probability of 0.00 for both. Given that the p-value is less than 0.05, the null hypothesis (H0), which states that the units are homogeneous, is rejected. This indicates that the fixed effects (FE) method is more appropriate for the model, as there is heterogeneity among the units.

Table 6: F-Limer Statistic for Hypothesis 1

Hypotheses	Conclusion	F Probability	F-Statistic	Test Result
Hypothesis 1	Units are not homogeneous (Fixed Effects Method FE)	0.00	4.37	H0 rejected
Hypothesis 2	Units are not homogeneous (Fixed Effects Method FE)	0.00	3.61	H0 rejected

Table 7 presents the Hausman test results, used to determine whether to use a fixed or random effects model. The p-value is reported as 0.00, indicating that the random effects model is not appropriate. Therefore, the fixed effects model is the better choice for this research.

Table 7: Hausman Test Results for Selecting Fixed or Random Effects Model

Hypotheses	Conclusion	p-value	Chi-Sq. d.f	Chi-Sq. Statistic	Test Result
First Hypothesis	Use random effects model	0.00	4	11.28	H0 rejected
Second Hypothesis	Use random effects model	0.00	5	18.92	H0 rejected

In summary, both tables suggest that due to the presence of heterogeneity and the rejection of the random effects model, the fixed effects model (FE) is the most suitable for analyzing the data. This choice ensures that the model properly accounts for the characteristics of the data, making the results of the analysis reliable.

Results of Hypothesis Testing

Hypothesis 1: The first hypothesis was tested using the Panel Least Squares method on the dependent variable Market Value Added (MVA). The analysis covered the years 2018 to 2022, with 5 time periods and 167 cross-sectional units, resulting in 834 unbalanced observations. The intercept (C) coefficient is 0.190980, with a standard error of 0.050171 and a t-statistic of 3.806601, indicating a significant positive impact on MVA at a significance level of 0.0002.

Environmental Disclosure (ED) shows a coefficient of 0.262271 with a t-statistic of -1.226804 and a significance level of 0.0202, indicating a positive and significant impact on MVA. Therefore, the first research hypothesis is supported.

The Financial Leverage (LEV) coefficient is -0.294802, with a t-statistic of -19.78887 and a significance level of 0.4600, indicating no significant impact on MVA. Other variables were not significant, and the model's Adjusted R-squared is 0.543090, indicating that about 54% of the variations in MVA are explained by the model.

Table 8: Regression Model Results for the First Hypothesis

Variable	Coefficient	Standard Error	t-Statistic	Significance Level (p-value)
Constant (C)	0.190980	0.050171	3.806601	0.0002
Environmental Disclosure (ED)	0.262271	0.001851	-1.226804	0.0202
Financial Leverage (LEV)	-0.294802	0.014897	-19.78887	0.4600
Firm Size (SIZE)	0.008799	0.003003	2.930130	0.0035
Firm Age (AGE)	0.000593	0.000643	0.923092	0.0362
R-squared	0.476309			
Adjusted R-squared	0.473059			
F-statistic	100.3838			
Prob(F-statistic)	0.000000			
S.E. of regression	0.143928			
Durbin-Watson stat	1.783418			

Hypothesis 2: The second hypothesis was also tested using Panel Least Squares. Environmental Disclosure (ED) has a coefficient of 0.381097, with a t-statistic of 2.212335 and a significance level of 0.0271, indicating a significant positive impact on MVA. Corporate Governance (CG) has a coefficient of 0.506134 with a t-statistic of 3.912835 and a significance level of 0.0001, supporting the second hypothesis.

In conclusion, both research hypotheses are supported, indicating that Environmental Disclosure and Corporate Governance positively impact the Market Value Added of companies listed on the Tehran Stock Exchange. The detailed tables and further analysis are provided in the thesis appendix.

Table 9: Regression Model Results for the Second Hypothesis

Variable	Coefficient	Standard Error	t-Statistic	Probability (p-value)
Constant (C)	0.139065	0.073194	1.899948	0.0078
Environmental Disclosure (ED)	0.157848	0.097573	0.592873	0.0034
Corporate Governance (CG)	0.171515	0.073006	0.979582	0.0076
ED and CG Interaction (EDCG)	0.277174	0.125080	-0.616995	0.0074
Financial Leverage (LEV)	-0.295587	0.014948	-19.77428	0.0803
Firm Size (SIZE)	0.018873	0.003011	2.947020	0.0033
Firm Age (AGE)	0.001615	0.000645	0.952978	0.0009
R-squared	0.327133			
Adjusted R-squared	0.322240			
F-statistic	66.84956			
Prob(F-statistic)	0.000000			
S.E. of regression	0.144177			
Durbin-Watson stat	1.785855			

V.   Conclusion

The main purpose of this research was to examine the impact of Environmental Disclosure (ED) and Corporate Governance (CG) on the Market Value Added (MVA) of companies listed on the Tehran Stock Exchange. The study aimed to explore how transparency in environmental practices and the quality of corporate governance affect the financial performance of firms, specifically in terms of their market value. Data collection involved gathering financial and non-financial information from 167 companies over a five-year period, from 2018 to 2022. The data were primarily sourced from the companies' annual reports and financial statements, which provided insights into their environmental disclosure practices, corporate governance structures, financial leverage, company size, and age. The descriptive statistics revealed several key findings about the variables studied. The Environmental Disclosure variable showed a mean value indicating moderate levels of disclosure among the companies. The Market Value Added, on average, was positive, suggesting that most companies were generating value above their capital costs. Corporate Governance scores varied significantly across firms, reflecting different levels of governance quality. The financial leverage of the companies also showed considerable variation, with some companies being highly leveraged while others maintained lower levels of debt. Company size and age were distributed normally across the sample, with most companies being medium to large-sized and relatively mature. The results of the hypothesis testing indicated that both Environmental

Disclosure and Corporate Governance have a significant positive impact on Market Value Added. Specifically, the first hypothesis testing revealed that companies with higher levels of environmental disclosure tend to have higher market value added, suggesting that investors reward firms that are transparent about their environmental practices. The second hypothesis testing showed that stronger corporate governance also positively influences market value added, highlighting the importance of effective governance structures in enhancing firm value.

Based on the results of the hypothesis tests, the following practical suggestions are made:

1. **For the first hypothesis (Environmental Disclosure):** Companies are encouraged to enhance their environmental transparency and reporting practices. Since the research showed a positive relationship between environmental disclosure and market value added, firms that invest in comprehensive and transparent environmental reporting are likely to see increased investor confidence and higher market valuations.

2. **For the second hypothesis (Corporate Governance):** Companies should focus on strengthening their corporate governance practices. The findings indicate that good governance is crucial for boosting market value. This can include improving board oversight, ensuring the independence of board members, and enhancing shareholder rights. Firms that prioritize strong governance structures can potentially increase their attractiveness to investors and achieve better financial performance.

In conclusion, the research underscores the importance of environmental and governance factors in determining the financial success of companies in the Tehran Stock Exchange. By focusing on these areas, companies can not only meet regulatory expectations but also enhance their market performance and long-term sustainability.

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