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Original Article

The Impact of Environment, Social, and Governance on the Market Value of Real Estate Enterprises in Vietnam

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Abstract: This study examines the influence of Environmental, Social, and Governance (ESG) performance on the market value of real estate enterprises in Vietnam from 2014 to 2024. Using panel data of listed firms on HOSE and HNX and applying Pooled OLS, FEM, REM, and FGLS estimations, the results show that ESG scores have a positive and statistically significant impact on Tobin's Q. Among the three ESG pillars, the Environmental component exhibits the strongest effect, followed by Social and Governance factors. Firm size and liquidity positively affect market valuation, while financial leverage and inflation exert negative effects; economic growth demonstrates a positive contribution. The findings highlight the growing importance of sustainable practices in enhancing firm value within Vietnam's real estate sector. The study provides empirical evidence supporting the integration of ESG into business strategies and offers implications for policymakers seeking to promote transparency and sustainable market development.

Keywords: Real Estate, ESG, market value, enterprises.

1. Introduction

Transparent governance, environmental stewardship, and social responsibility geared toward sustainable development have emerged as an inevitable trend, fundamentally reshaping the operational paradigm of corporations amidst the global climate change agenda. Accordingly, the Environmental, Social, and Governance (ESG) standards framework is construed as a

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comprehensive metric for evaluating the non-financial impact and performance efficacy of an organization or enterprise. The prominence of ESG is no longer confined merely to ethical or reputational considerations but has been empirically validated to directly influence corporate profitability and firm value. The companies with high ESG scores typically demonstrate superior revenue growth, lower operating costs, diminished exposure to regulatory and legal risks, alongside increased labor productivity and optimized capital expenditure [1]. This reality suggests the integration of ESG factors into corporate strategy has become increasingly important for enhancing organizational resilience and long-term prosperity

Vietnam has recently experienced an intensifying corporate focus on ESG. This paradigm shift is propelled by multi-faceted factors, including pressure from international investors and large investment funds, which increasingly utilize ESG criteria as a vital screening mechanism in their capital allocation decisions; compliance mandates stemming from new-generation free trade agreements such as EVFTA, which compel Vietnamese enterprises to conform to elevated environmental and labor standards to participate effectively in global supply chains; and the escalating awareness among consumers and the public, who tend to favor products and services from enterprises demonstrating robust social and environmental responsibility [2]. These systemic pressures necessitate that Vietnamese enterprises, whether voluntarily or mandatorily, proactively incorporate ESG principles into their business models.

Real estate has consistently played a critical role in Vietnam's economic development in recent years, exerting a strong spillover effect on over 40 other industries and contributing significantly to the national GDP. However, it is also a sector characterized by intensive resource consumption, substantial carbon emissions, and profound impacts on local communities [3]. Consequently, the adoption of ESG standards in the real estate sector carries a particularly crucial significance. Regarding the Environmental pillar, "green real estate" projects facilitate reduced energy consumption, water conservation, and minimized negative impacts on ecosystems. From a Social perspective, responsible real estate enterprises focus on constructing high-quality, safe living spaces with full amenities and contributing to the development of local communities. Concerning Governance, operational transparency, effective risk management, and legal compliance aid enterprises in building trust with investors and customers. For these reasons, ESG factors are expected to have a direct and powerful impact on the market value of real estate enterprises, achieved through attracting sustainable capital flows, enhancing brand equity, and creating a distinctive competitive advantage.

Although the relationship between ESG and financial performance has been extensively studied globally, academic research in Vietnam on this topic remains relatively limited, particularly within the real estate domain. Prior studies often focused on the stock market in general or examined only a single facet of ESG without providing a comprehensive and in-depth view of the combined effects of all three pillars (E, S, G) on the market value of real estate enterprises. These studies frequently face constraints regarding the completeness of ESG data, as non-financial information disclosure by Vietnamese enterprises is not yet uniform and standardized. Furthermore, the specific context of the Vietnamese real estate sector, characterized by volatile development cycles, issues related to planning, land, and legal policies, has not been fully incorporated into analytical models. This research aims to assess the current status of ESG adoption and its influence on the market valuation of real estate enterprises in Vietnam. Subsequently, it proposes solutions to raise awareness of ESG adoption among real estate firms while simultaneously fostering a transparent and sustainable real estate market.

2. Literature Review

2.1. The Role of ESG on Market Capitalization (Tobin's Q)

ESG is an acronym representing the three core dimensions: Environmental, Social, and Governance, used to measure the sustainability and ethical impact of business operations on the community and stakeholders. ESG constitutes a system of non-financial criteria that significantly influence corporate performance and intrinsic value. Specifically: i) The Environmental (E) factor pertains to how an enterprise manages its ecological footprint, carbon emissions, climate change risks, and energy efficiency; ii) The Social (S) factor encapsulates responsibilities toward employees, customers, the broader community, and adherence to human rights standards; and iii) The Governance (G) factor reflects the corporate control structure, operational transparency, business ethics, shareholder rights protection, and internal risk control capabilities [4].

In the real estate sector, ESG holds particular importance due to the sector's intensive resource consumption and high emission profile, adopting ESG not only assists real estate enterprises in mitigating regulatory and environmental liabilities but also generates added value through enhanced energy efficiency, improved corporate reputation, and the attraction of green investment capital. Hence, ESG functions as a holistic framework for assessing and optimizing the market valuation of real estate enterprises [5].

In the context of accelerated globalization and the robust transition toward sustainable development, ESG metrics are increasingly regarded as a pivotal determinant of corporate market value, often gauged by indices such as Tobin's Q or market capitalization. Integrating ESG criteria into the operational strategy not only enhances an enterprise's risk resilience and long-term governance capacity but also contributes to elevating its image, credibility, and capacity to mobilize capital in the financial markets [6].

A comprehensive synthesis study based on over 2,000 empirical research works found that approximately 90% of these studies indicated a positive or neutral relationship between ESG practices and corporate financial performance, with environmental factors playing a significant role in augmenting future cash flows. Enterprises that strategically invest in green technologies, energy conservation, or eco-friendly product development are frequently afforded a market premium, as investors perceive them to possess a capacity for sustained long-term profitability and reduced vulnerability to environmental policy volatility. Furthermore, companies demonstrating transparent labor practices, safe working conditions, and active community engagement consistently build a positive image and enduring investor trust. This consequently aids in reducing the cost of capital and increasing the Tobin's Q valuation, as the market demonstrates confidence in the stability of earnings and the abatement of non-financial risks. Studies have indicated that corporate social responsibility activities exhibit a positive correlation with firm value, particularly in firms with high customer interaction. However, this impact is conditional on the effectiveness of communication and implementation; excessive social costs or ineffective communication may render the effect neutral or even negative in the short term. Reports also suggest that enterprises with high ESG scores are often valued 10% - 20% higher than peers who have not fully adopted ESG standards, reflecting investor perception of lower risk, transparent management, and a more robust long-term strategy. Sound governance mechanisms are instrumental in mitigating the risks of fraud, conflicts of interest, and enhancing shareholder confidence. Research focused on European firms showed that companies with high corporate governance scores achieved significantly superior Tobin's Q values compared to control groups, underscoring the decisive role of robust governance in market valuation enhancement.

2.2. Factors Affecting Corporate Market Capitalization

The Tobin's Q ratio is a crucial metric reflecting how the market values a company compared to the book value of its assets. In the global sustainability shift, ESG standards are becoming a primary determinant of corporate market value, as they reflect the firm's capability for long-term growth maintenance and comprehensive risk management.

The mechanism through which ESG impacts Tobin's Q is first explained by the environmental dimension. When a firm proactively adopts emission reduction policies, energy efficiency measures, or invests in green buildings, it not only minimizes future regulatory liabilities and operational costs but also successfully attracts green investment capital and specialized sustainable financial funds. This improved sustainability profile encourages investors to apply a high premium to the long-term outlook, thereby accelerating the growth of market capitalization relative to book value, resulting in a higher Tobin's Q. The findings of [7] in China indicated that firms with high ESG scores had an average Tobin's Q 10–15% higher than the rest, demonstrating the positive role of environmental initiatives on market value.

Firm size exhibits a positive correlation with the capacity to access both debt and equity capital, which in turn facilitates expanded investment opportunities and improved competitive standing. Easier and more stable capital access aids the firm in increasing its market value, reflected by a higher Tobin's Q ratio [8]. Additionally, other internal corporate characteristics, such as financial leverage and liquidity, are important. Based on the optimal capital structure theory [9], the judicious use of debt can augment corporate value due to the tax shield benefit, where interest expenses are tax-deductible, reducing the corporate tax burden and boosting net income. As evidenced by [8], financial leverage can exert a dual impact on corporate value: positive when a firm maintains a rational debt level to harness the tax benefit, but detrimental when debt surpasses the optimal threshold, thereby escalating financial risk.

Furthermore, extrinsic factors such as State macroeconomic policies related to finance, monetary supply, or national GDP growth strategies during specific periods significantly influence corporate market value which indicated that in emerging economies, the relationship between economic growth and corporate market capitalization demonstrates a strong spillover effect via the financial and investment channels [10].

3. Methodology

3.1. Data Collection

The research data on ESG and financial indicators for real estate enterprises listed on the HOSE and HNX exchanges during the period 2014-2024 were collected from FiinPro (https://fiinpro.com/) and FiinRatings ESG Scoring (https://fiinratings.vn/).

Based on the literature review, theoretical framework, and research objective, the authors propose a research model to determine the impact of ESG on the market value of real estate enterprises as follows:

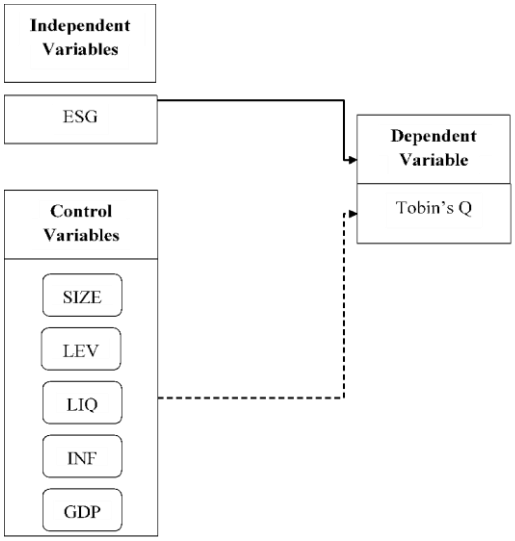

Figure 1. Proposed Research Model (Source: Authors' Proposal).

3.2. Empirical Model

Table 1. Description of Variables Used in the Research Model

Items	Variable Name	Description	Expectation
Dependent Variable			
Tobin's Q		Market Value of the Firm / Book Value of Assets	
Independent Variables			
ESG score	ESG score	0–100 scale, aggregate of the three E, S, G components. Data from sustainability reports.	+
E score	Environmental score (E)	Reflects environmental compliance, emission reduction, use of renewable energy, resource protection policy.	+
S score	Social score (S)	Evaluates labor policy, welfare, community responsibility, human resource diversity.	+
G score	Governance score (G)	Reflects transparency, board structure, internal control, shareholder rights.	+
Control Variables			
SIZE	Firm size	Ln(Total Assets)	+
LEV	Financial leverage	Total Liabilities/Total Assets	-
LIQ	Firm liquidity	(Cash + Cash Equivalents)/Total Assets	+
INF	Inflation rate	[Price Index t - Price Index (t-1)]/Price Index t \times 100\%	-
GDP	Economic growth rate	[Real GDP t – Real GDP (t-1)]/Real GDP (t-1) \times 100\%	+

(Source: Authors' synthesis).

The regression models for the impact of ESG on the market value of real estate enterprises are written as follows:

(1) Model 1: Aggregate Impact of ESG on Market Value

$$Tobin'sQ_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 LIQ_{it} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \varepsilon_{it}$$

(2) Model 2: Individual Impact of Each E, S, G Component on Market Value

$$Tobin'sQ_{it} = \beta_0 + \beta_1 E_{it} + \beta_2 S_{it} + \beta_3 G_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 GDP_{it} + \beta_8 INF_{it} + \varepsilon_{it}$$

Where:

$Tobin'sQ_{it}$: Market value of firm i at t;

ESG_{it}: Aggregate ESG score of firm i at t;

$SIZE_{it}$: Firm size, measured by the natural logarithm of total assets;

LEV_{it}: Financial leverage, measured by the ratio of total liabilities to total assets;

LIQ_{it}: Liquidity, measured by (Cash + Cash Equivalents) / Total Assets;

GDP_{it}: Gross Domestic Product growth rate of Vietnam at time t, reflecting macroeconomic conditions;

INF_{it}: Inflation rate at time t, representing the general price volatility of the economy, which can affect investor sentiment and behavior in the real estate market;

ε_{it}: Random error term of the model.

To empirically estimate the relationship between Tobin's Q and ESG, the study employs Panel Data econometrics utilizing three distinct estimation methods: the Pooled Ordinary Least Squares (OLS) Model, the Fixed Effects Model (FEM), and the Random Effects Model (REM).

Additionally, the Feasible Generalized Least Squares (FGLS) method is employed because it can control for the phenomena of autocorrelation and heteroscedasticity. The FGLS method first

estimates the model using OLS (even in the presence of autocorrelation and heteroscedasticity). The residuals derived from the model are then used to estimate the variance-covariance matrix of the errors. Finally, this matrix is used to transform the original variables and estimate the parameters in the model.

The standard diagnostic tests performed in this research include:

F-test to select between the Pooled OLS model and the FEM model.

LM test to select between the Pooled OLS model and the REM model.

Hausman test to select between the FEM model and the REM model.

Tests for autocorrelation and heteroscedasticity.

After assessing autocorrelation and heteroscedasticity, FGLS regression may be implemented to correct these phenomena.

4. Research Results

4.1. The Status of the Vietnamese Real Estate Enterprise Market from 2014-2024

The mean Tobin's Q for enterprises in the real estate sector exhibits notable volatility over the designated period, reflecting fluctuations in market assessment of the Vietnamese real estate segment. The Tobin's Q generally oscillated around the 1.0-1.1 range, suggesting that, for most of the decade, the market valuation of firms was only marginally above their book value, indicative of moderate investor expectations (Figure 2).

The 2014–2016 timeframe constitutes a period of slight appreciation in market value, from 1.037 to 1.063, followed by a sharp contraction in 2016. Initial stimuli, such as supportive credit policies (e.g., the 30 trillion VND credit package), were associated with improved investor sentiment. However, 2016 marked the sharpest dip, with Tobin's Q declining to 0.97, falling below the 1.0 value, meaning the market valued the firm lower than its net asset value. The primary causes included the State Bank tightening real estate credit, combined with a rapid increase in supply, leading to a drop in absorption rates. Many small and medium-sized enterprises faced cash flow difficulties, leading to declining stock prices. In response, the State enacted new Housing and Real Estate Business Laws in 2014, taking effect from 2015 to enhance transparency and protect buyers, thereby helping stabilize market sentiment.

Subsequently, during the 2017–2020 period, the real estate sector demonstrated a positive recovery trend. From 2017 to 2019, the Tobin's Q of real estate firms surged to its highest level in the cycle, reaching approximately 1.1 in 2017, reflecting a market boom fueled by rapid urbanization, strong FDI inflows into real estate, and numerous major enterprises such as Vinhomes, Novaland, Nam Long, and Khang Dien were listed and expanded the scale of their projects.

From 2019 to 2020, Tobin's Q slightly dropped to about 1.066 due to slow project licensing processes, coupled with the COVID-19 pandemic impacting market liquidity. However, the decrease was moderate thanks to Government policies on debt relief, interest rate cuts, and enterprise support, which helped large conglomerates maintain relatively stable market capitalization.

A pronounced contraction ensued, driven by the persistent pandemic effects and the subsequent bond market crisis. Following a brief recovery in 2021, driven by loose monetary policy and surging housing demand post-COVID, the Tobin's Q index slightly rose to 1.075. However, the market was severely impacted in 2022 by the corporate bond crisis and a sharp curtailment of real estate credit, causing investor confidence to to rapidly erode, dragging Tobin's Q down to 1.038. Many large enterprises experienced liquidity constraints, which coincided with a sharp decline in equity valuations. The State responded by issuing new decrees on corporate bond debt extension and adjusting the legal framework, while selectively loosening credit room to avert a systemic

collapse. These measures helped stabilize market expectations in 2023–2024.

Numerous major enterprises (such as Novaland, Phat Dat, Dat Xanh) faced acute liquidity challenges. The State responded by issuing Decree 08/2023/ND-CP regarding bond debt rescheduling and regulatory adjustments aimed at easing bond debt extensions and selectively relaxing credit to mitigate systemic collapse, stabilizing market expectations for 2023-2024.

2023–2024: Signs of cautious recovery (Tobin's Q slightly rose from 1.029 to 1.048). In 2023, the market reached a cyclical trough, with Tobin's Q declining to 1.029, reflecting persistent market prudence and slow capital deployment. However, entering 2024, the index slightly recovered to 1.048, indicating a gradual return to confidence thanks to a series of Government support policies, such as Resolution 33/NQ-CP (2023), promoting safe, sustainable real estate development, and the 120 trillion VND social housing credit package. For example, Vinhomes and Nam Long restructured their project portfolios, reduced financial leverage, and simultaneously promoted sustainable development models according to ESG standards, thereby improving their market valuation.

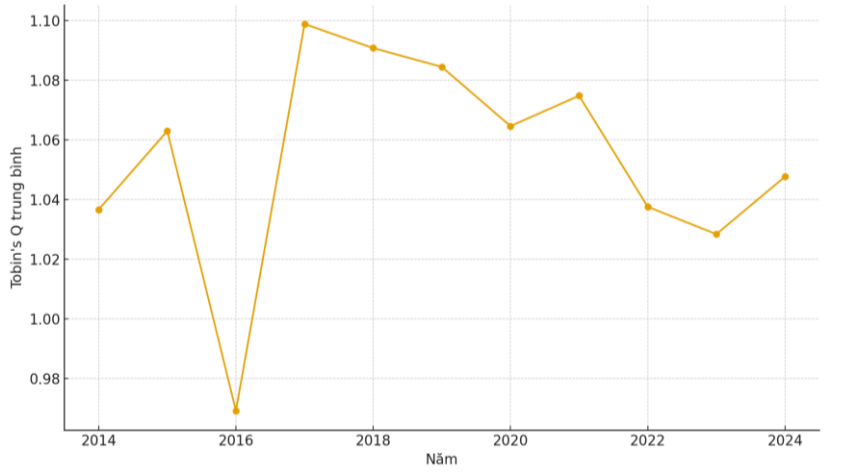

Figure 2. Market Value of Real Estate Enterprises from 2014-2024.
(Source: Data collected from Fiinrating).

4.2. Impact of ESG on the Market Value of Real Estate Enterprises

The descriptive statistics presented in Table 2 reveal significant heterogeneity in the financial indicators across the sample enterprises during the 2014-2024 period. This discrepancy highlights the uneven developmental maturity among firms and indicates that companies are operating under varied constraints and challenges.

The average market value (Tobin's Q) is 1.05 with a standard deviation of 1.10, indicating no excessive discrepancy in market valuation among real estate firms. The minimum value recorded is -0.23, and the maximum is 3.35.

The aggregate ESG score has a mean value of 8.81 (S.D. 2.40), ranging from 0.37–100, reflecting a notable difference in the level of ESG practice among enterprises. Large firms have proactively adopted sustainable development models, while many smaller firms are only at the basic compliance level.

The everage of E_score (Environmental) is 12.40 (S.D. 7.79), ranging from -0.52 to 43.13, showing a large discrepancy in investment levels in energy-saving solutions, green building development, or climate risk management.

The everage of S_score (Social) is 54.96 - significantly higher than the other two pillars (S.D 14.21), suggesting that Vietnamese real estate firms tend to focus more on social responsibility, employee welfare, and local community relations.

The everage of G score (Governance) is 8.89 (S.D. 13.30), ranging from -2.41 to 69.09, reflecting substantial heterogeneity in governance practices and transparency. The governance score takes both positive governance attributes and governance-related risks into account and is standardized relative to a benchmark. Therefore, negative values do not indicate the absence of governance mechanisms but rather reflect governance performance below the reference level. Many firms lack sustainable governance reports or clear ESG disclosure mechanisms, while some large listed firms have established governance criteria aligned with international standards.

Table 2. Descriptive Statistics of Variables Used in the Model

Variable	Obs.	Mean	Std. Dev.	Min	Max
Tobin_Q	1,040	1.05	1.10	-0.23	2.35
ESG_score	1,040	8.81	2.40	0.37	100.00
E_score	1,040	12.40	7.79	-0.52	43.13
S_score	1,040	54.96	14.21	8.32	99.33
G_score	1,040	8.89	13.30	-2.41	69.09
SIZE	1,040	12.32	0.72	10.92	14.41
LEV	1,040	1.80	1.63	0.00	54.78
LIQ	1,040	1.53	2.83	0.05	22.91
INF	1,040	2.68	1.68	-1.75	4.48
GDP	1,040	6.17	1.84	2.51	8.58

(Source: Authors' analysis)

SIZE (firm size) was 12.32 (S.D. 0.72), indicating moderate disparity among listed firms, reflecting a relatively high industry concentration where large firms hold dominant market shares.

The everage of LEV (financial leverage) is 1.80 (S.D. 1.63), showing considerable variation in debt usage. LIQ (liquidity) mean is 1.53 (S.D. 2.83), with a very wide range (0.05-22.91), indicating significantly different capacities to meet short-term obligations and reflecting non-uniform financial structures.

The everage of INF (inflation rate) is 2.68% (S.D. 1.68), suggesting a relatively stable price volatility period in Vietnam, yet still susceptible to global economic shocks. Finally, GDP (economic growth rate) mean is 6.17% (S.D. 1.84), reflecting a positive growth outlook for Vietnam over the past decade.

In summary, the descriptive statistics confirm that the variables in the model exhibit volatility that accurately reflects the operational reality of Vietnamese real estate enterprises from 2014-2024, providing a reliable foundation for subsequent regression analyses.

Table 3. Regression Model Results (REM)

Variables	Model (1)	Model (2)
ESG_score	0.22^{***}	
	$[45.1]^{***}$	
SIZE	0.317^{***}	0.302^{***}
	[9.97]	[9.1]
LEV	-0.159^{***}	-0.157^{***}
	[-10.76]	[-10.15]
LIQ	0.174^{***}	0.175^{***}
	[21.25]	[20.70]
INF	-0.161^{***}	-0.159^{***}
	[-12.30]	[-11.73]
GDP	0.187^{***}	0.184^{***}
	[15.72]	[14.93]
E_score		0.113^{***}
		[34.67]
S_score		0.0847^{***}

Variables	Model (1)	Model (2)
		[32.98]
G_score		0.0483***
		[18.09]
_cons	-6.737***	-6.883***
	[-16.17]	[-15.18]
N	1040	1040
R-sq		

Note: * p<0.1, ** p<0.05, *** p<0.01

(Source: Authors' analysis)

From Table 2&3, the p-value (Sig) of all independent variables is less than 0.01, indicating that all variables in the model are statistically significant at the 1% level. This allows for the conclusion that the explanatory variables selected in the model have a strong relationship with the dependent variable, Tobin's Q, reflecting the firm's market value.

(1) Aggregate ESG Model

$$Tobin'sQ_{it} = -6.737 + 0.231\ ESG_{it} + 0.317\ SIZE_{it} - 0.159\ LEV_{it} + 0.175\ LIQ_{it} + 0.187\ GDP_{it} - 0.161\ INF_{it} + \varepsilon_{it}$$

(2) E-S-G Component Model

$$Tobin'sQ_{it} = -6.883 + 0.113\ E_{it} + 0.0847\ S_{it} + 0.0483\ G_{it} + 0.302\ SIZE_{it} - 0.157\ LEV_{it} + 0.175\ LIQ_{it} + 0.159\ INF_{it} + \varepsilon_{it}$$

The ESG_score (0.231, p < 0.01) exhibits a positive and highly statistically significant coefficient, demonstrating that firms with superior aggregated ESG performance generally achieve a higher market valuation (Tobin's Q). Specifically, a 1 unit increase in a firm's ESG score is associated with a 0.231 unit increase in its average market value, ceteris paribus. This empirically confirms that effective ESG implementation enhances brand equity, attenuates legal and financial downside risks, and bolsters the capacity to secure sustainable investment capital. Investors, increasingly focused on sustainability as a proxy for robust governance, consistently apply a market premium to these firms.

In Model 2, separating the individual pillars, all three factors—E_score (0.113), S_score (0.0847), and G_score (0.0483), have a positive and highly significant impact (p < 0.01) on Tobin's Q.

E_score (Environmental) has the highest coefficient, suggesting that environmentally friendly policies and activities (green buildings, energy saving, emission reduction) help firms improve their image and attract green investment funds.

S_score (Social) is the second highest, reflecting the positive role of social responsibility, employee welfare, and community relations in enhancing brand value and market trust.

G_score (Governance), though having the smallest coefficient, remains strongly significant: transparent governance, reduced conflicts of interest, and full information disclosure are fundamental factors consolidating investor confidence.

The evidence collectively suggests that all three ESG pillars contribute positively to enhanced market valuation, with the Environmental and Social factors exhibiting a comparatively stronger marginal effect than the Governance factor, reflecting the current market preference for sustainable development credentials in the real estate sector.

Firm size (SIZE): SIZE (0.317 and 0.302, p < 0.01) demonstrates a positive impact on Tobin's Q, implying that larger real estate firms are generally valued higher by the market. The regression coefficient of SIZE is 0.302, meaning that when firm size increases by 1 unit (log of total assets increases by 1 unit), the average market value (Tobin's Q) of the firm increases by 0.302 units, ceteris paribus. Firm scale is associated with economies of scale, easier access to credit, and a stronger brand position. Furthermore, large firms often have better capacity for information disclosure and ESG implementation, thereby consolidating investor confidence. Nevertheless, within the context of Vietnam's reality, several large-scale enterprises also face risks due to overly rapid expansion,

suggesting that risk management and sustainability are factors that must be concurrently controlled.

Financial leverage (LEV): LEV (-0.159, $p < 0.01$) possesses a negative and statistically significant coefficient, indicating that excessive debt utilization depresses the firm's market valuation. Specifically, when the debt ratio increases by 1 percent, the average market value (Tobin's Q) of the firm decreases by 0.157 units, ceteris paribus. When the debt level exceeds a safe threshold, the cost of financial distress, liquidity risk, and bankruptcy potential increases, lowering investor expectations.

Liquidity (LIQ): LIQ (0.174 - 0.175, $p < 0.01$) has a strong positive impact, demonstrating that firms with high liquidity are evaluated more positively by the market. Specifically, when the liquidity index increases by 1 unit, the average market value (Tobin's Q) of the firm increases by 0.175 units, ceteris paribus. Firms with a high payment ratio are generally at lower risk of default, ensuring project progress and stable dividend payment capacity. However, excessive liquidity may reflect inefficient capital utilization; therefore, determining the "optimal" liquidity level is crucial for enhancing market value while maintaining investment efficiency.

Inflation rate (INF): INF (-0.161 and -0.159, $p < 0.01$) exhibits a negative coefficient, reflecting the negative impact of inflation on firm market value. Specifically, when the inflation rate increases by 1 percentage point, the average market value (Tobin's Q) of the firm decreases by 0.159 units, ceteris paribus. Rising inflation increases input costs, reducing expected profit and the net present value of projects. High inflation also leads to higher interest rates, putting financial pressure on firms with large debt, especially common in the real estate sector. This implies that macroeconomic stability and inflation control are key conditions for maintaining a firm's market value.

Economic growth (GDP): GDP (0.187 and 0.184, $p < 0.01$) demonstrates a positive impact on Tobin's Q, reflecting that periods of stable economic growth boost income and housing demand, resulting in improved revenue and stock appreciation for real estate firms. Specifically, when the economy's GDP increases by 1%, the average market value of the firm increases by 0.184 units, ceteris paribus. Increased GDP also signifies a positive investment environment, stable interest rates, and better capital absorption capacity, all contributing to increased market value. However, due to the cyclical nature of the real estate market, the positive impact of GDP may exhibit a time lag; during periods of rapid growth, market value may increase swiftly but subsequently pose a risk of correction

5. Discussion

Our study provides robust empirical reinforcement for the impact of ESG on corporate market valuation. Firms exhibiting superior ESG indices consistently achieve a higher market value (Tobin's Q). This outcome reflects that firms exhibiting stronger accountability in the transparency of environmental, social, and governance reporting, are more highly valued by both investors and the broader market. The integration of ESG principles into corporate strategy effectively mitigates legal and operational risks, enhances brand equity, and attracts long-term investors, thereby optimizing financial performance and market value. This finding is concordant with previous international research of [11].

Within the real estate sector, ESG is increasingly perceived as a core dimension of sustainable development, particularly as Vietnam promotes green transition and standardizes ESG disclosure in accordance with the guidance of the State Securities Commission (SSC). Real estate firms with high ESG scores typically focus on deploying eco-friendly materials, designing for energy efficiency, prioritizing employee welfare, and maintaining transparent governance structures, factors that collectively enhance reputation, reduce risk

exposure, and justify a higher market valuation premium

Firm size maintains a positive correlation with Tobin's Q, indicating that larger real estate firms frequently receive a market premium, likely due to their extensive land banks, superior capital mobilization capacity, lower systemic operational risk, and established brand dominance. This result has also been demonstrated in the studies by [12].

The economic growth rate (GDP) has a positive regression coefficient of 0,184, indicating that economic growth has a positive impact on the market value of enterprises (Tobin's Q). This result is consistent with theoretical expectations, reflecting a strong link between economic growth and corporate performance. When the economy expands, people's income and consumption demand increase, leading to an expansion of investment, higher revenue and profit for businesses, thereby increasing their market capitalization. Particularly in the real estate sector, stable GDP growth is often associated with the robust development of the housing market, infrastructure, and public investment—factors that boost asset values and the expected profit of firms in the industry. In Vietnam, sustained GDP growth rate during the 2015-2023 period has been maintained at a high level, averaging around 6-7% per year, which has helped sustain market confidence and boost capital flows into the real estate sector, especially in major cities like Hanoi and Ho Chi Minh City. Macroeconomic stability and synchronized infrastructure development policies have contributed to enhancing the valuation of listed enterprises in the sector.

The Liquidity variable yields a positive regression coefficient of 0.175, suggesting that a firm's liquidity positively impacts its market value. This result aligns with the positive expected sign, reflecting that sound solvency helps firms mitigate financial risk, solidify investor confidence, and facilitate investment expansion. In the real estate sector, which is characterized by long capital cycles and substantial working capital requirements, maintaining an appropriate liquidity level is a vital factor for firms to ensure project execution progress and the ability to meet short-term debt obligations. According to [13], firms with high liquidity levels are often valued higher in the market as investors view this as a signal of robust financial health and resilience against risk. Similarly, [14] affirm that liquidity acts as an intermediary between investment capacity and firm value, particularly in capital-intensive industries such as real estate. In the context of the Vietnamese market, real estate firms' liquidity fluctuated significantly during the 2014-2024 period, influenced by credit policies and interest rate volatility. However, firms maintaining current ratios at safe levels generally demonstrate a superior ability to attract investment capital and are accorded higher market valuations. The model's regression result accurately reflects this reality: firms capable of flexible cash flow management and stable short-term financing exhibit higher market values compared to those facing liquidity constraints.

The Inflation Rate (INF) has a negative regression coefficient of -0.159, indicating that inflation negatively affects the market value of real estate enterprises. This outcome aligns with theoretical expectations, as inflation typically increases input costs, particularly in the real estate sector, where the prices of construction materials, financing costs, and land values are highly volatile. As production and investment costs rise, the expected profit margin decreases, leading investors to downgrade the firm's profitability potential, consequently reducing its market value. For Vietnamese real estate firms, this effect is particularly pronounced during the 2014-2024 period, during which the market experienced credit cycles and interest rate adjustments. When inflation rises, the State Bank often tightens monetary policy, resulting in higher lending rates and a substantial increase in the real estate firms' cost of capital. This diminishes the ability to raise funds for new projects, extends the payback period, and reduces investment attractiveness.

Financial Leverage (LEV), measured by the debt-to-total-assets ratio, has a negative regression coefficient of -0.157, indicating that financial leverage negatively impacts the market value of real estate enterprises. This result aligns with the expectations of modern corporate finance theory, where high financial leverage utilization can escalate financial risk, leading investors to underestimate the firm's prospects. For Vietnamese real estate enterprises, this result is particularly relevant within the 2014-2024 period, where the market experienced a cycle of rapid growth, followed by the impact of credit tightening and corporate bond policies. Firms with high debt ratios face difficulties in capital rotation, interest payment, and project progress maintenance, leading to a significant decline in market capitalization.

6. Conclusion

Employing advanced panel data regression analysis, the empirical findings unequivocally demonstrate that all three ESG factors exert a positive and statistically significant influence on market value. The Environmental (E) factor demonstrates the strongest marginal effect, suggesting that firms strategically focused on green investments, emission abatement, and efficient resource utilization receive the highest market premium from investors. The other two factors, Social (S) and Governance (G), while exhibiting a lower magnitude of impact, nonetheless play a critical role in preserving the firm's reputation, trust, and transparency, thereby reinforcing long-term value.

The research validates that substantive ESG implementation is not solely an ethical consideration or a regulatory requirement but an economic value creation determinant. Firms with exemplary ESG performance successfully attract sustained investment capital, lower their cost of capital, enhance operational efficiencies, and significantly improve their market valuation by elevating the Tobin's Q ratio. This finding is consistent with established international trends and provides novel empirical evidence specifically tailored to the Vietnamese context, where ESG is an emerging but rapidly solidifying criterion for assessing corporate competitiveness.

The study concludes by proposing several key policy recommendations to foster the transparent and sustainable development of real estate enterprises. The key solutions include:

i) The State must promptly establish a comprehensive regulatory framework and a National ESG Standard, creating a unified regulatory corridor for mandatory information disclosure and standardized corporate compliance assessment. Concurrently, it is necessary to design preferential financial mechanisms such as green credit lines, tax exemptions/reductions, or dedicated support funds for enterprises achieving predefined ESG criteria. Furthermore, capital market transparency must be fundamentally enhanced through the imposition of mandatory ESG reporting and the development of a national ESG index; ii) Enterprises must proactively transition their development models toward green practices, invest in energy-efficient technologies, upgrade internal governance and ESG reporting systems, and strengthen social responsibility initiatives alongside the development of sustainable human capital; and iii) It is essential to institutionalize green building technical standards and embed environmental indicators into financial, valuation, and disclosure frameworks. Standardized green building benchmarks, lifecycle carbon disclosure, and ESG-linked financial incentives would reduce information asymmetry and enable investors to more accurately capitalize environmental performance into firm value, thereby strengthening the positive transmission from E performance to Tobin’s Q.

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