

Non-Financial Measure as a Financial Measure: ESG and Value of the Firm

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Abstract

The rapid integration of environmental, social, and governance (ESG) considerations into financial markets has intensified debate over whether corporate ESG performance systematically influences stock prices; however, empirical evidence on this relationship remains mixed. This study examined the relationship between corporate ESG performance and stock price movements among Korean listed firms from 2012 to 2024. Using annual ESG ratings published by the Korea Institute of Corporate Governance and Sustainability (KCGS) and firm-level stock price data, the analysis employed linear regression models to assess the association between changes in ESG scores and stock returns. The results indicated a statistically significant positive relationship, suggesting that improvements in ESG performance are associated with higher stock returns. This study contributes to the literature by providing long-horizon, market-specific evidence from Korea, where regulatory developments and investor attention to ESG have intensified in recent years. The findings imply that ESG performance contains value-relevant information beyond traditional financial indicators and plays an increasingly important role in asset pricing. Overall, the results support the view that ESG considerations have become an integral component of investment decision-making in contemporary capital markets.

Keywords: ESG, Non-financial measure, Financial markets, Stock price

1. Introduction

Environmental, Social, and Governance (ESG) factors have emerged as critical considerations in both corporate management and investment decision-making, driven by heightened societal interest in sustainability and corporate responsibility. Firms are increasingly adopting ESG-oriented strategies not only to enhance their market value but also to cultivate a risk-averse and transparent corporate image. From a managerial perspective, the integration of ESG principles enables early identification and mitigation of environmental challenges, such as carbon emissions and resource depletion, thereby fostering long-term sustainability and resilience. Failure to address such issues has led to reputational damage, shareholder dissatisfaction, and a decline in brand equity, particularly among firms perceived as environmentally negligent. On the social dimension, ESG engagement facilitates responsible practices in areas such as workforce diversity, community involvement, and labor rights, which can enhance stakeholder trust and reduce reputational risk. Concurrently, the governance component promotes ethical conduct and corporate transparency, thereby strengthening investor confidence. The so-called "Korea Discount" (e.g., Ducret and Isakov, 2020), a term referring to the undervaluation of Korean firms due in part to governance shortcomings, illustrates the tangible financial consequences of weak ESG adherence.

A growing body of empirical literature supported the link between ESG performance and corporate financial outcomes. For example, Shmelev and Gilardi (2025) demonstrated that firms with strong ESG profiles tend to achieve superior financial performance, particularly when ESG is embedded as a long-term strategic objective. They argued that although the initial implementation of ESG practices may incur costs, these are outweighed by long-term benefits

in profitability and firm stability. Similarly, Zhao et al. (2018) reported a robust and widespread positive correlation between ESG performance and financial returns across global markets. Their meta-analysis of over 2,000 empirical studies reveals that the majority find either a positive or neutral association between ESG standards and corporate performance, highlighting ESG's dual moral and economic significance.

Within the investment community, ESG has become a key metric for assessing long-term value. Investors increasingly incorporate ESG considerations into their decision-making processes to align with personal or institutional values and to mitigate exposure to market volatility and systemic risk. ESG-oriented investments are also associated with enhanced financial stability, improved long-term performance, and more effective risk management practices.

The findings of this study supported the hypothesis that a firm's ESG performance is positively associated with its financial performance, as proxied by stock price. Several theoretical mechanisms may explain this relationship. First, firms with higher ESG ratings may be more attractive to investors who increasingly prioritize sustainability, ethical conduct, and governance quality. As demand rises for equities that meet ESG criteria, stock prices may increase independently of traditional financial indicators. Second, superior ESG performance may signal long-term operational efficiency and resilience. Companies with robust governance structures and proactive environmental strategies are often better positioned to adapt to regulatory shifts, stakeholder scrutiny, and resource constraints. These factors can positively influence expected future cash flow and, consequently, firm valuation. Third, the proliferation of digital platforms and real-time information has amplified the market's responsiveness to ESG disclosures. In the context of behavioral finance, news, whether from formal disclosures or viral media, can have an immediate impact on investor sentiment and market behavior.

Taken together, these findings suggested a paradigm shift in financial analysis, away from models based solely on quantitative metrics toward a more integrated framework that accounts for both financial and non-financial variables. The observed association between ESG performance and stock prices in Korean firms reflects this evolving market logic and has important implications for investors, regulators, and corporate strategists operating within an increasingly ESG-conscious environment.

In summary, this study aimed to examine whether corporate ESG performance is systematically associated with stock price movements in the equity market. Focusing on Korean listed firms over the period 2012–2024, the study was motivated by the rapid institutionalization of ESG practices in Korea alongside persistent concerns regarding corporate governance and market valuation. By empirically analyzing the relationship between ESG ratings and stock returns, this research sought to provide market-specific evidence on the financial relevance of ESG performance and to contribute to the broader literature on how non-financial factors are incorporated into asset pricing in increasingly sustainability-conscious capital markets.

2. Data and Methodology

This study hypothesized that changes in firms' ESG ratings are associated with their stock prices by altering investor perception and behavior. To empirically test this hypothesis, a panel dataset of publicly listed Korean companies was constructed, covering the period from 2012 to 2024. The primary objective is to examine whether year-over-year changes in ESG ratings are statistically associated with corresponding changes in stock prices.

ESG evaluation data were obtained from the Korea Institute of Corporate Governance and Sustainability (KCGS), which provides both overall ESG ratings (graded on a categorical scale from D to S) and disaggregated scores across the ESG components. For each firm, annual ESG scores were matched with the corresponding stock price data at the time of evaluation. Specifically, ESG scores for a certain year were announced during October of that year, and all stock prices were collected based on the last trading date of each year. To ensure data quality and consistency, firms with missing observations or irregular ESG disclosures were excluded from the final sample. Stock price movement was operationalized as a percentage change in a firm's stock price compared to the previous year. Dividends were not considered due to the endogenous nature, but splits were naturally taken into consideration since the significant percentage changes (i.e., above +100% or below -50%) were excluded as outliers from the analysis. This variable served as the dependent variable in the regression analysis, while the independent variable was the change in firm's

ESG score. To render the categorical ESG ratings suitable for quantitative analysis, numerical values were assigned on an ordinal scale (i.e., D = 1, C = 2, B = 3, B+ = 4, A = 5, A+ = 6, S = 7). While these assignments made the regression analysis possible, treating ordinal ESG ratings as continuous values may affect the interpretation of the regression coefficients and the precision of the estimated relationships.

The study employed a linear regression model of the following form:

$$y = \alpha + \beta x + \varepsilon$$

where y represents the percentage change in stock price, x denotes the change in ESG score, α is the intercept, β is the slope coefficient indicating the marginal effect of ESG score changes on stock price movement, and ε is residual.

Ordinary least squares (OLS) regression was used to estimate the relationship between ESG score changes and stock price changes. The statistical significance of the estimated coefficients is assessed using t-statistics and p-values. A low p-value indicates that the observed relationship is unlikely to have occurred by chance, thereby lending support to the validity of the regression model. The analysis was conducted using the cleaned dataset, and all statistical inferences were made at conventional significance levels (i.e., $p < 0.01$, $p < 0.05$, or $p < 0.1$).

3. Results

Table 1 reports descriptive statistics showing the mean, standard deviation, minimum, and maximum values for ESG score changes and stock price changes, and Table 2 reports the results of an ordinary least squares (OLS) regression analyzing the relationship between changes in ESG scores and annual stock prices returns. The regression analysis is conducted using a sample of 1,805 firm-year observations.

Table 1. Descriptive Statistics

Statistics	ESG Score Changes	Stock Price Changes
Mean	-0.0266	-0.0368
Standard Deviation	1.2424	0.2960
Minimum	-3	-0.5
Maximum	3	0.9944

Table 2. Correlation between ESG Score Changes and Stock Price Changes

Variable	Stock Price Changes
ESG Score Change	0.0523*** (9.545)
Observations	1,805
R-squared	0.048
Robust t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$	

The estimated coefficient for the ESG score is 0.0523, indicating that, on average, a one-point increase in ESG score is associated with a 5.23% increase in annual stock price. The t-statistics of 9.545 and a near-zero p-value provide strong evidence that this effect is statistically significant at conventional confidence levels. In other words, the positive relationship between two variables is unlikely to occur by chance. The 95% confidence interval for the slope coefficient ranges from 0.0415 to 0.0630, confirming the robustness of the estimated effect. The statistical

significance of the coefficient supports the hypothesis that ESG performance has a meaningful, albeit partial, impact on stock price behavior.

These empirical findings align with theoretical expectations that enhanced ESG performance can positively affect investor sentiment and market valuation. Improvements in ESG scores may serve as credible signals of long-term sustainability and risk management, thereby influencing capital allocation and firm valuation. Although ESG is not the sole determinant of stock performance, the results confirm that it plays a statistically significant and directionally consistent role within the broader framework of market dynamics and investor decision-making.

Table 3. Correlation between Environmental Score Changes and Stock Price Changes

Variable	Stock Price Changes
Environmental Score Changes	0.0318*** (6.105)
Observations	1,731
R-squared	0.021
Robust t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$	

Table 3 reports the results of the relationship between changes in Environmental scores and annual stock price returns. The estimated coefficient for the Environmental (E) component is 0.0318, indicating that a one-point increase in the Environmental score corresponds to a 3.18% increase in annual stock price. A t-statistic of 6.105 and a p-value of 1.27×10^{-9} provide strong evidence for the statistical significance of this effect. The 95% confidence interval,

ranging from 0.0216 to 0.0420, supports the validity of this estimate. These results suggest that environmental performance is significantly associated with stock price movements.

The significance of the Environmental factor can be interpreted in the context of firm-level initiatives such as efforts to reduce chemical waste or implement environmentally responsible practices. Such actions may serve as positive signals to investors, enhancing perceptions of corporate sustainability and long-term value.

Table 4 reports the results of the relationship between changes in Social scores and annual stock price returns. The estimated coefficient for the Social (S) component is 0.0357, implying that a one-point increase in the Social score is associated with a 3.57% increase in annual stock price. The corresponding t-statistic of 7.125 and a p-value of 1.45×10^{-12} indicate a high level of statistical significance. The 95% confidence interval ranges from 0.0259 to 0.0455, suggesting that social performance is significantly associated with stock price movements.

Table 4. Correlation between Social Score Changes and Stock Price Changes

Variable	Stock Price Changes
Social Score Changes	0.0357*** (7.125)
Observations	1,982
R-squared	0.025
Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1	

Interestingly, the coefficient for the Social component exceeds that of the Environmental component, indicating that the Social dimension may exert a greater influence on stock performance. This finding underscores the importance of corporate initiatives aimed at improving labor policies, ensuring social responsibility, and fostering trust between firms and stakeholders. Beyond ethical considerations, such practices may enhance firms' resilience and risk management capabilities.

Table 5. Correlation between Governance Score Changes and Stock Price Changes Variable

Variable	Stock Price Changes
Governance Score Changes	0.0507*** (11.047)
Observations	2,005
R-squared	0.057
Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1	

Table 5 reports the results of the relationship between changes in Governance scores and annual stock price returns. The estimated coefficient for the Governance (G) component is 0.0507, indicating that a one-point increase in the Governance score is associated with a 5.07% increase in annual stock price. The t-statistic of 11.047 and a p-value of 1.39×10^{-27} provide strong evidence of statistical significance. The 95% confidence interval, spanning from 0.0417 to 0.0597,

further substantiates the effect of Governance on stock price. Among the three ESG subcomponents, Governance demonstrates the largest estimated coefficient, consistent with its relatively heavier weight (approximately 45–60%) in ESG scoring methodologies.

These findings highlight the pivotal role of Governance in shaping investor perceptions and firm valuation. Transparent corporate decision-making, effective board oversight, and the mitigation of agency risks are critical factors that can enhance firm credibility and long-term sustainability. While Governance is not the sole determinant of stock price performance, the results confirm that robust corporate governance practices significantly influence investment decisions and contribute to sustainable value creation.

4. Discussion

The empirical findings presented in the previous section support the proposition that ESG factors can significantly influence a firm's stock price. Several mechanisms may underlie this relationship.

First, firms with stronger ESG performance are likely to attract increased investor demand. Such firms are often perceived as lower-risk, more transparent, and better positioned for long-term sustainability. These perceptions can enhance investor confidence, thereby increasing demand for the firm's equity and driving up its market valuation.

Second, robust ESG practices may improve a firm's relationships with key stakeholders including customers, employees, and the broader public. Positive stakeholder engagement can lead to stronger brand loyalty, higher employee satisfaction and retention, and enhanced reputational capital. These outcomes can contribute to more stable and potentially higher long-term cash flows, while also mitigating various operational and regulatory risks. Collectively, such improvements can positively influence the firm's stock performance.

Finally, the results indicate that ESG performance has a quantifiable impact on financial market outcomes. By disaggregating ESG into its three pillars, Environmental, Social, and Governance, the analysis identifies which components exhibit the strongest associations with stock price movements. Notably, the Governance dimension

demonstrated particularly strong and statistically significant relationships with stock performance, suggesting that the governance aspect of ESG plays a critical role in shaping investor evaluations and market behavior.

5. Conclusion

This study examined the association between ESG ratings and stock returns among South Korean publicly listed firms from 2012 to 2024, identifying a statistically significant positive correlation between higher ESG assessments and stronger market performance. While these results align with patterns reported in international markets (e.g., Alareeni and Hamdan, 2020; Ademi and Klungseth, 2022), the findings should be interpreted within the limits of a correlational design: the analysis does not establish that ESG improvements *cause* higher returns, nor does it account for potential omitted variables such as firm-specific risk management practices or macro-sector dynamics. Rather, the evidence suggests that ESG evaluations may function as one of several informational signals that investors incorporate into pricing.

Future research could benefit from exploring (i) causal identification research design, such as event-study designs around disclosure regulations or exogenous ESG shocks, (ii) heterogeneity across industry groups, firm size, or ownership concentration, and (iii) micro-level channels linking ESG communication, analyst coverage, and liquidity. Further work may also examine how Korea-specific institutional features such as stewardship codes, pension fund mandates, and fair-trade governance moderate the observed relationships.

For practice, the results offer several implications. Korean investors may treat ESG ratings as a complementary screening tool, particularly when differentiating among large firms with similar financial profiles. Asset owners could incorporate ESG metrics into due diligence frameworks not as stand-alone predictors of return, but as indicators of disclosure quality, reputational management, and risk transparency. For corporations, the findings reinforce the value of consistent reporting through sustainability disclosures and verifiable governance data, which may help reduce information asymmetries in the Korean market. Ultimately, while ESG factors cannot substitute for firm fundamentals, they appear to represent an increasingly relevant dimension of evaluation within Korea's evolving investment environment.

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