



## The Impact of ESG Performance on Financing Costs with the Moderating Role of Green Financing

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### Abstract

In recent years, Environmental, Social, and Corporate Governance (ESG) indicators have gained a significant position in company risk analysis and credit rating, and they can affect their cost of financing. Given the scarcity of empirical evidence in the Iranian economy, the present study aims to provide a data-driven and scientific examination of the impact of ESG performance on the cost of financing for companies listed on the Tehran Stock Exchange from 2015 to 2023, considering the moderating role of green financing. This research is applied and correlational in nature. Data related to ESG indicators, green financing, and financing costs were collected from financial statements and company reports and analyzed using panel data regression and the test of the moderating effect of green financing. The results showed that better ESG performance is significantly associated with a reduction in companies' cost of financing. Furthermore, the moderating role of green financing significantly strengthens this relationship; specifically, when companies utilize green financing tools, the positive impact of ESG on reducing the cost of financing becomes more pronounced. Among the different dimensions, corporate governance and social responsibility played the greatest roles in reducing the cost of equity and enhancing the trust of financial institutions. Control variables such as profitability and company size had a decreasing effect, while financial leverage had an increasing effect on the cost of financing. The panel model's R<sup>2</sup> value (0.48) also indicates an adequate explanatory power of the model. Based on statistical evidence and empirical analysis, improving ESG indicators—especially corporate governance and information transparency—alongside the targeted use of green financing, can create significant benefits for Iranian companies.

**Keywords:** ESG performance, cost of financing, green financing, corporate responsibility, Tehran Stock Exchange, corporate governance.

JEL Classification: G32, G38, Q56.

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## INTRODUCTION

In the current landscape of corporate finance and sustainable development, Environmental, Social, and Corporate Governance (ESG) indicators have transitioned from optional benchmarks to fundamental criteria for assessing company risk, reputation, and creditworthiness. Growing global awareness of environmental risks, social inequalities, and governance failures—accentuated by climate crises, regulatory changes, and the demands of socially conscious investors—have fostered a paradigm shift in the importance of non-financial metrics. Consequently, ESG factors now play a pivotal role not only in evaluating a company's intrinsic value but also in determining its access to external financing and the cost at which such financing can be secured. While robust international evidence supports these linkages, empirical research in emerging markets, and specifically within the Iranian economy, remains limited. Given this gap, the present study offers a comprehensive, data-driven exploration of how ESG performance influences the cost of financing for companies listed on the Tehran Stock Exchange, with a particular focus on the moderating role of green financing mechanisms. Traditional financing decisions in Iran, similar to many developing economies, have historically centered on classical financial indicators—such as profitability, leverage, and size—within a predominantly bank-centric lending environment. However, recent years have witnessed increased regulatory emphasis on transparency, the entry of more institutional investors, and the slow but steady expansion of capital markets. Concurrently, heightened expectations for corporate responsibility and sustainability are challenging companies to move beyond mere compliance, prompting more strategic engagement with ESG principles. Despite these positive trends, the Iranian market faces considerable obstacles: the absence of unified ESG disclosure frameworks, limited availability of high-quality ESG data, a lack of independent rating systems, and persistent symbolic adoption of sustainability without substantive integration. Considering these structural limitations and the evolving demands from both domestic and international stakeholders, it is imperative to understand the real, quantifiable effects of ESG performance on corporate financing, and to explore how targeted financial innovations—such as green financing—can catalyze this relationship. The main objective of this research is to empirically examine the influence of ESG performance on the cost of financing—defined as the aggregate of interest expenses and the expected return on equity—among publicly listed companies in Iran over the period 2015–2023, while also analyzing the moderating impact of green financing. The study tests a primary hypothesis: There exists a significant negative relationship between ESG performance and the cost of financing, with green financing strengthening this relationship. Three subsidiary hypotheses dissect the composite ESG score into its environmental (E), social (S), and governance (G) dimensions, positing that each subdimension negatively correlates with financing costs, and that the application of green financing tools amplifies these effects.

## METHODOLOGY

This study adopts an applied and correlational research design. The population covers all companies listed on the Tehran Stock Exchange between 2015 and 2023. Employing a systematic elimination sampling approach, the selection criteria included consistent activity across the study period, a uniform fiscal year ending in March, and the availability of complete ESG and financing data without industry or fiscal year changes throughout the period. This rendered a final sample of 95 firms.

The research employs secondary, audited financial data and publicly disclosed ESG information curated from financial statements and recognized system portals. The principal independent variable is the ESG performance score, constructed through a blend of content analysis and ranking disclosure quality across environmental, social, and governance activities. The dependent variable—the cost of financing—is measured as the ratio of aggregate interest and equity costs to total debt or assets. Control variables include firm size (natural logarithm of assets), profitability (ROA), financial leverage (debt-to-assets ratio), and growth opportunities (Tobin's Q or sales growth rate)

Panel data regression models were utilized, with type selection (pooled vs. panel) informed by the F-Limer test and fixed or random effects determined by the Hausman test. To address potential heteroscedasticity, models were estimated using Generalized Least Squares (GLS) in Stata 16, maintaining a significance level of 5%. The moderation analysis incorporated both main and interaction effects between ESG and green financing.

## RESULTS

### Descriptive Statistics and Correlation Analysis:

Descriptive statistics reveal considerable dispersion across key variables, with the mean cost of financing at 0.086, and mean ESG score at 4.27 (of 7). Correlation analyses demonstrate a significant negative relationship between the aggregate ESG score and financing costs ( $r = -0.39$ ). All ESG subdimensions—environmental, social, and governance—show similar negative and significant correlations, as does green financing ( $r = -0.26$ ) with financing costs.

### Regression and Moderation Analysis:

Regression results confirm the main hypothesis: higher ESG scores predict lower financing costs ( $\beta = -0.017$ ,  $p = 0.004$ ). Green financing itself exerts a significant independent negative effect ( $\beta = -0.013$ ,  $p = 0.026$ ). Critically, the interaction between ESG and green financing is significant and negative ( $\beta = -0.010$ ,  $p = 0.036$ ), verifying a robust moderating effect. Subdimensional regressions show the strongest moderating effect for environmental performance—the interaction term for  $E \times$  Green Financing stands at  $\beta = -0.013$  ( $p = 0.015$ ).

### Control Variables:

Consistent with financial theory, larger size and higher profitability reduce financing costs, whereas greater leverage increases them. The panel  $R^2$  (0.48–0.49) indicates solid explanatory power.

The findings empirically validate that superior ESG performance, across all subdimensions, is significantly associated with reductions in the cost of financing—a result aligning with both stakeholder and signaling theory. Crucially, the study substantiates that green financing tools (such as green loans or green bonds) significantly strengthen this beneficial linkage, particularly in the environmental dimension, suggesting a catalytic effect for firms actively leveraging sustainable finance instruments. This synergistic effect underscores the value of developing integrated ESG and green finance frameworks, positioning them not only as ethical imperatives but as strategic levers for competitive advantage and sustainable growth. The result that corporate governance and social aspects most strongly influence financing costs highlights the importance of transparency, board quality, and stakeholder engagement in enhancing firm creditworthiness. Compared to similar studies in developed markets, these findings echo international best practice while highlighting unique local challenges—such as data limitations and regulatory ambiguities. For policy-makers, the study suggests the need for an official ESG rating system, standardized disclosure requirements, and expanded green finance options. For firm managers, investing in ESG capability and utilizing available green finance tools can directly reduce financing costs and improve access to capital. Green finance incentives, such as tax benefits or preferential loan terms for sustainable project financing, may further accelerate ESG adoption and its benefits. Despite robust results, the research is constrained by the limited availability and non-standardized nature of ESG data, the aggregation of green finance as a composite variable (without breakdown by specific instrument), the focus solely on listed companies, and the uncontrollable impact of macroeconomic and political fluctuations during the study period.

Recommended avenues for future research include establishing a national ESG database and framework, performing comparative studies on the effects of individual green finance instruments, expanding analyses to private and smaller firms, and assessing the impact of regulatory innovation and multidisciplinary approaches on sustainable corporate finance.

**CONCLUSION**

This study, as one of the first comprehensive empirical investigations in Iran, demonstrates that improving ESG performance, particularly when paired with strategic use of green finance, can substantially reduce the cost of company financing, deepen investor trust, and drive sustainable economic growth. The evidence advocates for concerted policy, managerial, and regulatory actions toward mainstreaming ESG principles and green financing within Iran's evolving financial system, thus laying a foundation for competitive resilience and long-term value creation. the digital era.

**Contribution of Authors**

The authors jointly contribute to the preparation and publication of the article.

**Ethical Approval**

Informed written consent was obtained from individuals for the publication of their anonymous information in this study.

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This study had no sponsor.

**Conflict of Interest**

The authors of this article declared no conflict of interest regarding the authorship or publication of this article.

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