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ESG Ratings and Financing Costs: The Mediating Effect of Market Competitiveness and the Moderating Role of Rating Divergence

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Abstract. With the growing emphasis on sustainable development, environmental, social, and governance (ESG) performance is increasingly being recognised as one of the factors influencing company's financing decisions. Some of the earlier studies suggest that higher ESG ratings tend to lower a firm's financing costs. However, the existing literature has not examined the underlying mechanisms of ESG rating divergence thoroughly. This study reviews the literature on ESG ratings, financing costs, market competitiveness, and rating divergence, and explains how ESG ratings affect financing costs. The analysis indicates that higher ESG ratings enhance market competitiveness by strengthening innovation capability and corporate reputation, which brings about lower information asymmetry between the firm and outside parties, encourages trust in general,thereby decreasing the cost of both debt and equity financing. If ESG ratings divergence arises, uncertainty increases externally and the ESG signal loses credibility, which weakens the favourable effect of higher rating. Nevertheless, such divergence may also motivate some firms to improve information disclosure and increase innovation. This study extends the literature by proposing market competitiveness as a mediator and ESG rating divergence as a moderator, providing both theoretical and practical implications for corporations, investors, and regulators.

Keywords: ESG rating, financing costs, market competitiveness, ESG rating divergence

1. Introduction

1.1. Research background

With the deepening of the concept of globalisation, environmental, social and corporate governance (ESG) factors have been gradually transforming from peripheral issues in corporate responsibilities into the dominant elements that affect long-term sustainability and strategic planning of companies. In 2024, China officially released its first national standard for supply-chain ESG risk management, which requires firms to establish systematic risk assessment systems and incorporate ESG factors into the entire process of management to address relative risks. Meanwhile, the "double carbon" goals, which refer to the "Dual Carbon" goals of carbon peaking by 2030 and carbon neutrality by 2060, have further accelerated the transition by putting emphasis on the environment, that is, ESG is

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increasingly becoming the most effective lever for high-quality growth of corporations. Consequently, ESG metrics tends to be a major tool in evaluating the sustainability and non-financial performance of enterprises in the capital market. Against this policy and market context, numerous scholars have investigated the economic outcomes of corporate ESG performance, among these research directions, the correlation between ESG ratings and corporate financing costs has attracted extensive scholarly attention.

One of the most intense debates concerning corporate financial performance centers on the cost of capital, while a substantial body of literature has verified a direct correlation between corporate ESG ratings and capital costs: Strong ESG performance is able to reduce the debt and equity costs significantly by lowering information asymmetry, improving investor trust and enhancing reputation of the company. Nevertheless, research on the mechanism through which ESG ratings affect financing costs by improving market competitiveness remains limited. Moreover, the impacts of ESG rating divergence on financing costs are also important but unexplored. The main objective of this study is to examine this question and fill these gaps.

1.2. Research questions and objectives

With regard to the research gaps mentioned above, the present paper is devoted mainly to a systematic survey of existing domestic and foreign studies. It brings together known results about ESG scores and about financing costs—both separately and jointly—and looks closely at the various ways in which market competitiveness may affect such costs. Two principal questions are now proposed for analysis:

(1) How does the increase in ESG ratings decrease debt and equity financing costs by enhancing market competitiveness of enterprises (in terms of its product market, of its innovations, and of its brand)?

(2) Is there a moderating role played by ESG rating difference with respect to the relation of ESG ratings to financing costs?

If the questions discussed here are clarified, the present paper both enlarges the study of economic results linked to the ESG score system and extends the theoretical treatment of ESG scores disagreements. From a practical standpoint, it gives advice—useful for firms—to interpret ESG ratings and to plan ESG resource allocations properly. Moreover, it proposes an exact method for investors or for regulators to assess risks due to disagreement and to act with scientific judgment.

2. Core concepts and theoretical basis

2.1. Concepts related to ESG rating

2.1.1. ESG composition

ESG is a comprehensive evaluation system that measures a company's performance in non-financial areas, including three dimensions: environment, social and internal corporate governance. This concept was first proposed by the United Nations in a report titled "Who Cares Wins" in 2004. The environment dimension covers a range of indicators from corporation carbon emission management, and energy efficiency to environment compliance. The social dimension mainly focuses on employee rights protection and community relations etc.; and the governance dimension concentrates on board structure, shareholder rights and information transparency. As a crucial source of non-financial information, ESG score provides investors with a dimension beyond traditional

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financial indicators to measure the long-term sustainability of companies. These three elements together form the core framework for investors and stakeholders to assess corporations, and are thus hailed as the company's 'second financial report' [1]. They are not merely a reflection of corporation responsibility, but also a key driver for regional economic growth and transformation [2].

2.1.2. Current mainstream ESG rating systems

In the international market, major influential rating agencies include MSCI, Sustainalytics, Bloomberg, Refinitiv (formerly Thomson Reuters), etc. These agencies exhibit significant differences in indicator selection, weight setting, and scoring models. Berg et al. found that the pairwise correlation between ESG ratings is only 0.38-0.71, showing huge differences among credit rating agencies [3]. Domestically, institutions such as Sino-Securities Index Information Service (Shanghai) Co.Ltd, Wind, SynTao Green Finance, FTSE Russell and Bloomberg L.P. etc. have formed a sizable ESG rating market, but the correlation between their ratings is also low, and rating divergence is a common phenomenon [4, 5].

2.2. The concept and composition of corporate financing costs

Financing costs are the sum of various expenses incurred by a firm in obtaining external funds, and are generally divided into two categories: debt and equity financing costs. There are multiple methods for measuring debt financing costs. In the academic literature, common proxies include the financial expenses scaled by total period-end liabilities and the interest expenses to the average of long-term and short-term debt [4-6]. Equity financing costs are often estimated using models such as the PEG model and the CAPM. Among these, the PEG model is widely used because of its simplicity and good applicability to the Chinese market [7]. It is worth noting that in China's bank dominated financing system, debt financing has long accounted for more than 70% of external corporate financing, rendering research on debt financing costs particularly valuable from a practical standpoint [4].

2.3. The impact of ESG ratings on financing costs

2.3.1. Impact on debt financing costs

A large portion of literature indicates that higher ESG ratings help reduce debt financing costs. The core rationale is that good ESG performance conveys positive signals to creditors regarding a firm's risk management capabilities, operational stability, and ethical standards, thereby lowering creditors' perceived risk and reducing the risk premium they demand [8]. Fan Yanping et al. using a sample of A share listed companies (2017-2022), empirically find that firms with higher ESG scores have lower debt financing costs, and this effect is more significant among private enterprises located in eastern regions [9]. In terms of mechanisms, strong ESG performance alleviates information asymmetry between banks and firms, improves credit ratings, helps firms access more bank loans, and issue bonds at lower interest spreads [10, 11].

Existing scholars consistently confirm high ESG ratings cut debt financing costs. However, most studies regard ESG rating as a single unified indicator, ignore wide rating divergence across agencies, and rarely discuss whether market competitiveness acts as an indirect medium between ESG ratings and debt financing costs. These research gaps form core analysis contents in the following section.

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2.3.2. Impact on equity financing costs

With respect to equity financing, improved ESG performance has also been shown to effectively reduce the cost of equity capital. El Ghoul et al. in a cross-country sample, find that firms actively fulfilling social responsibilities can attract more value-oriented investors by improving employee relations, reducing policy risks, and adopting sustainable strategies, thereby lowering equity financing costs [12]. Qiu Muyuan and Yin Hong using a sample of Chinese listed firms, also confirm a negative relationship between ESG performance and equity financing costs [8]. Yang Zhihao and Wang Maobin further point out that ESG rating divergence increases both debt and equity financing costs, with a stronger effect on the later [7].

Nonetheless, the literature on equity financing costs still leaves several questions open. Existing studies largely focus on the average level of ESG ratings and pay comparatively little attention to how rating divergence interacts with the market-competitiveness-based transmission path identified below; Yang Zhihao and Wang Maobin provide preliminary evidence that divergence raises equity financing costs, but the underlying mechanism through which such divergence might weaken or strengthen this indirect path has not been systematically tested [7].

Current research verifies ESG performance reduces equity financing costs, but few studies explore how ESG rating divergence changes the transmission path through market competitiveness. Most papers only test the direct relation between ESG scores and equity cost, and do not build a complete moderated mediation analysis framework. This blank requires systematic sorting in the following sections.

2.3.3. Transmission mechanism: the mediating role of market competitiveness

From a theoretical perspective, the relationship between ESG scores and costs of capital is not directly but functions via multiple intermediate channels. Among these, the enhancement of market competitiveness is an important pathway that awaits systematic examination.

Information asymmetry theory suggests that ESG ratings, as an information production mechanism, provide external stakeholders with incremental non-financial information, thereby reducing information asymmetry and lowering financing frictions [5]. When ESG ratings bring about greater transparency, the firm's product market reputation is strengthened, which helps expand its customer base and market share – that is, financing costs are indirectly reduced through improved product market competitiveness.

The reputation effect theory posits that good ESG performance is conducive to enterprises accumulating reputation capital, enhancing trust among various stakeholders, and reducing the risk premium demanded by investors and creditors [9]. Companies with high reputation are more likely to have stable business relationships and cash flow expectations, directly reducing the credit risk premium borne by creditors.

The stakeholder theory suggests that enterprises with higher ESG ratings can better coordinate the interests of all parties, thereby improving the efficiency of resource acquisition and long-term financing capabilities of the enterprise. Fang Xianming and Hu Ding found that ESG performance significantly promotes R&D innovation investment, and the improvement of innovation competitiveness can not only enhance the long-term profit expectations of the enterprise but also open up innovative financing channels such as green credit, directly reducing the financing costs of the enterprise [13].

However, the aforementioned studies are all based on a single ESG rating. In reality, there are often significant differences in scores given by different rating agencies for the same company, and the direction of this divergence's impact on financing costs remains controversial: some literature suggests that divergence increases information uncertainty, thereby driving up financing costs, while other studies find that divergence forces companies to "self-rescue" and thus reduce costs [3, 4, 14]. However, existing discussions have mostly focused on the direct effect of divergence, with little examination of how it affects the effectiveness of the mediating path of "ESG rating --market competitiveness --financing costs" as a moderating variable.

Information asymmetry theory, reputation effect theory and stakeholder theory explain the mediating logic of market competitiveness, but existing literature does not discuss how ESG rating divergence moderates this mediating path. Academics put forward two opposite views about divergence's influence, but no study systematically sorts how divergence strengthens or weakens this whole transmission chain. Full discussion of this conflict is arranged in Section 3.

3. Controversies and coping strategies

3.1. Effect of ESG rating divergence on financing costs

With the proliferation of ESG rating agencies, ESG rating divergence has become increasingly important, and its impact on financing costs has sparked considerable debate in the academic community. Chen Pengcheng et al. further find that ESG rating divergence weakens market competitiveness by inhibiting green innovation, indirectly raising financing costs, while some other scholars reach a contrary conclusion [14].

3.1.1. The effect of ESG rating divergence on debt financing costs

The mainstream view holds that rating divergence raises debt costs. Zhang Yunqi et al. using data extracted from A-share listed companies (2015-2021), were the first to systematically analyse the effect of ESG score divergence on the cost of capital of debt [4]. They found that firms with greater rating divergence bear higher debt capital costs, and this conclusion remains robust after employing the HKEX ESG disclosure reform shock as an instrumental variable. The underlying mechanism is that ESG rating divergence leads the market to perceive that a firm's ESG information disclosure is insufficiently standardised and transparent; information providers rely more on private information, and the market's perception of risk increases regarding the firm's true ESG performance deviating from the mean rating, thereby demanding an additional risk premium. Fan Yanping et al. similarly found that ESG rating divergence increases debt financing costs significantly by amplifying perceived debt default risk [9]. This effect is more pronounced among private firms and those without bank–firm relationships. Yang Zhihao and Wang Maobin from a firm value perspective, further confirmed that rating divergence undermines firm value by raising both debt and equity financing costs, producing a notable "value impairment effect" through the transmission channels of worsening the information environment, increasing financing costs, and reducing R&D investment [7].

However, some studies find that rating divergence can reduce debt costs. Chen Pengcheng et al. offer a different perspective from the angle of corporate "self-rescue behaviour": when facing greater ESG rating divergence, firms proactively improve the quality of ESG information disclosure, increase green innovation investment, and attract more analyst coverage [14]. These self-rescue actions, in turn, reduce information asymmetry between firms and creditors, thereby lowering debt financing costs, with this effect being more significant in highly polluting industries and regions with poorer financial ecosystems. Li Fengyu and Zhai Xinyue drawing on information production

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theory, find that inconsistent multiple ESG ratings convey multi-dimensional increasing information to the market; the greater the divergence in coverage scope, the stronger the information production effect, which actually helps reduce firms' debt financing costs [5].

3.1.2. The effect of ESG rating divergence on equity financing costs

Gibson Brandon et al. and Avramov et al. both found that in the field of equity financing, the greater the difference in ESG ratings among listed companies, the higher the risk premium [15, 16]. Manifested as higher excess stock returns, this ultimately reflects an increase in a firm's cost of equity capital. Building on this line of research, Avramov et al. incorporated ESG rating divergence into the capital asset pricing model and argued that inconsistent ESG ratings increase uncertainty regarding a firm's ESG performance [16]. As uncertainty rises, both the alpha and beta coefficients of stocks tend to increase, exposing investors to greater sustainable investment risk and reducing their willingness to participate in the market. From this perspective, firms facing higher equity financing costs may rely more heavily on debt financing than equity financing, which, in turn, can lead to a higher leverage ratio [4].

Another issue that deserves attention is the quality of ESG information disclosure. Existing studies suggest that it can, to some extent, moderate the relationship between ESG rating divergence and equity financing costs. According to Zhang Yunqi et al. the adverse effect of rating divergence becomes much weaker when a firm's ESG disclosure is supported by third-party assurance or complies with GRI standards [4]. In practice, more transparent and standardised disclosure reduces uncertainty surrounding ESG information, making it easier for investors to interpret different ESG ratings. As a result, improving disclosure quality is generally regarded as an effective approach to mitigating the negative consequences associated with ESG rating divergence.

3.1.3. The moderating effect of rating divergence on the mediating pathways of market competitiveness

Section 2.3.3 discusses the relationship between ESG ratings and financing costs from the perspectives of information asymmetry theory, reputation effect theory, and stakeholder theory. Based on these theories, higher ESG ratings are considered to reduce financing costs through stronger market competitiveness, particularly by improving product market competitiveness, innovation capability, and brand reputation. Although this mediating mechanism has received increasing attention, the role of ESG rating divergence within this process has not been fully examined. Existing research has yet to reach a clear conclusion on whether rating divergence strengthens or weakens the effectiveness of this transmission pathway.

A widely accepted view is that ESG rating divergence tends to weaken the mediating effect of market competitiveness. The reason lies in the fact that substantial differences in ESG assessments across rating agencies may reduce the signaling value of ESG ratings. This transmission mechanism relies on ESG ratings providing reliable information about a firm's actual ESG performance to external stakeholders. Once different agencies produce inconsistent assessments, however, the information conveyed by ESG ratings becomes less clear. Investors and creditors may find it more difficult to evaluate a firm's real ESG performance or accurately assess its competitive position. As a result, even firms with strong ESG performance may not receive full market recognition, because inconsistent ratings can create cognitive bias regarding their competitiveness. Under these circumstances, the transmission pathway from ESG rating to market competitiveness and ultimately to financing costs is likely to become less effective. It can be seen that rating discrepancies are

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information interference factors in the intermediary path, which can interfere with the effective transmission of ESG rating competitiveness signals.

Two opposing paths align with the two core research questions. Rating divergence may weaken the mediating effect by raising information uncertainty, or strengthen it by pushing firms to improve ESG disclosure and green innovation. Conflicting results come from different theories, samples and corporate responses. Few studies integrate both paths into a unified moderated mediation framework, which is the core value of this review.

On the other hand, the "self-rescue behaviour" of corporations may strengthen the mediating path [14]. When confronted with significant ESG rating disparities, companies may be motivated to respond to market criticisms through self-rescue actions such as proactively enhancing ESG information disclosure transparency, increasing investment in green innovation, and improving stakeholder communication. These actions directly impact the core dimensions of market competitiveness - innovation capability and brand reputation - and may, in turn, strengthen the mediating path of "ESG rating → market competitiveness → financing cost". In this sense, rating disparities serve as a "catalyst", compelling companies to transform external pressure into an endogenous driving force for enhancing market competitiveness. Combining the two logics mentioned above, the direction of regulation of the mediating path of ESG rating disparities on market competitiveness may depend on the choice of corporate response strategies. Companies adopting passive response strategies are more likely to experience a weakening of the mediating path; whereas those actively transforming rating disparities into motivations for improvement may turn this challenge into an opportunity to strengthen the mediating path. The directionality of this regulatory effect remains to be empirically tested, and this will be further explored in subsequent sections of this paper.

3.1.4. Main reasons for the opposition

Overall, the impact of ESG ratings divergence on the financing costs has shown conflicting conclusions, which is primarily attributed to following reasons.

To begin with, the choice of fundamental thesis varies. Some scholars, from the perspective of information asymmetry and risk perception, argue that rating disagreements increase market uncertainty and risk premiums, thereby raising financing costs; while others, based on information production theory and corporate bailout theory, view rating disagreements as a driver of innovation, reducing risk premiums.

Another factor is that there are significant differences in the industry and regional samples selected in different studies: enterprises in highly polluting industries have stronger motivation for green innovation when facing rating divergences, and are more likely to achieve the effect of reducing financing costs [14].

3.2. Coping strategies

In response to the uncertainty caused by ESG rating divergence, the literature proposes multi-level coping strategies.

3.2.1. Strategies for firms

Improving the quality of ESG information disclosure by corporations is the most common practice. Zhang Yunqi et al. believe that companies should proactively adopt third-party certification and

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disclose information in accordance with internationally recognised standards such as GRI, and actively convey signals of information standardisation to the market to mitigate the negative influence of rating differences on costs of financing [4]. Fan Yanping et al. proposed that companies should adopt multi-channel debt financing methods and not rely solely on one financing channel [9]. They should also expand alternative channels such as equity financing to improve their capital structure. Chen Pengcheng et al. believe that companies should view different ESG ratings as a positive pressure, actively engage in green innovation and voluntary ESG disclosure, and transform passive responses into active utilisation, thereby enhancing their market competitiveness [14].

3.2.2. Strategies for investors

From the perspective of the moderated mediation framework, investors need to take corresponding response measures. For institutional investors, Yang Junmin and Zuo Panrui believe that institutional ownership generally alleviates the upward pressure on financing costs caused by differences in ESG ratings [6]. However, the impact varies greatly among different types of institutional investors: non independent institutional investors, due to their close relationship with corporate interests, do not play a significant role, while independent institutional investors with stronger information acquisition and analysis capabilities can enhance market risk concerns about companies with ESG rating differences, thereby increasing the financing costs of such companies. From this, it can be concluded that institutional investors should choose their investment methods based on their own characteristics.

3.2.3. Strategies for regulators

To stabilise the complete transmission path of ESG rating-market competitiveness-financing cost, regulators need to carry out standardised management for ESG rating divergence. For regulators, establishing unified ESG disclosure standards is the main way to reduce the negative impact of rating discrepancies. Yang Zhihao and Wang Maobin believe that the government should improve ESG disclosure regulations, strengthen the review of corporate ESG reports, impose appropriate penalties for violations, and require rating agencies to disclose their evaluation methods and the weights of various indicators to enhance the consistency and credibility of evaluation results [7].

4. Conclusion

This literature review summarises three general limitations of existing studies. First, most research only examines the direct link between ESG ratings and financing costs without analysing market competitiveness as a mediator. Second, inconsistent results on ESG rating divergence rarely discuss its moderating impact on the mediating path. Third, existing countermeasures lack connection with the moderated mediation mechanism and cannot ease rating divergence's negative influence on corporate competitiveness.

The present paper looks at the relation between ESG ratings and corporate financing costs with an eye to the mediating influence of market competitiveness and to the moderating effect of ESG rating divergence. On the basis of an analysis (and synthesis) of prior work, it gives a complete treatment of the connection between ESG performance and corporate financing results and sets out possible causal or explanatory mechanisms for such a relationship.

The results seem to show that higher ESG ratings help to cut down—sometimes substantially—both debt and equity costs. This conclusion is grounded in the idea that good ESG performance

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promotes transparency of corporate information, minimises the asymmetry of knowledge between firms and outside parties, and fosters belief (on the part of investors or creditors) in the long-run viability of the firm and in its capacity to manage risks. Hence, ESG ratings do not merely offer non-financial indicators but also help shape decisions made by the capital markets.

In addition, the present paper treats market competitiveness as a mediator of the relationship between ESG scores and financing costs. More specifically, better performance with regard to ESG seems likely to help firms to gain a competitive edge—by means of improved product-market standing, of innovation, or of branding—without necessarily increasing risk. Each such improvement helps to establish predictable operations, to moderate uncertainty about the future, and to lower actual or perceived hazards, thus reducing risk premiums for lenders and investors. This view adds to prior work (which concentrated largely on direct signals) by underlining the strategic value of ESG performance for corporate competitiveness.

The influence of ESG rating divergence, however, is less straightforward. In practice, different ESG rating agencies often provide inconsistent assessments of the same firm, which may reduce the credibility of ESG ratings and increase uncertainty in the market. Under such circumstances, the favourable impact of ESG ratings on financing costs may become weaker. At the same time, some studies argue that rating divergence can also encourage firms to improve ESG information disclosure, increase green innovation investment, and respond more actively to stakeholder expectations. Whether the final outcome is positive or negative therefore depends, to some extent, on firms' response strategies as well as the quality of ESG information management.

Future research could combine large-scale panel data with more rigorous empirical methods to examine the mechanisms discussed in this paper. It would also be worthwhile to investigate whether industry characteristics, regional differences, and different institutional environments change the relationship between ESG ratings, divergence of that, and corporate financing costs, thus enabling a more complete picture of the economic effects of ESG evaluation systems.

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