



Study on the Impact of ESG Rating Divergence on the Cost of Capital

Sijia Ma

School of Economics and Finance, Xi'an International Studies University, Xi'an, China
107242021001992@stu.xisu.edu.cn

Abstract. This article empirically studies the relationship between ESG rating disagreements as well as corporate capital costs using Shanghai-Shenzhen A-shares listed firms, which from 2019-2023, with ESG ratings from China Securities Index, Wind, ESG Rating, SynTao Green Finance, FTSE Russell, and Bloomberg. Results show that ESG rating disagreements significantly increase firms' capital costs through amplified information asymmetry and reduced investor confidence. Heterogeneity analysis reveals this effect is particularly pronounced among non-state-owned enterprises due to weaker institutional credit support, and eastern coastal enterprises facing higher expectation for ESG rating performance in developed markets contrasting to central as well as western regions. Mechanism tests indicate two distinct pathways: ESG ratings divergence will intensify media attention, thereby increasing capital costs, while simultaneously compelling firms to strengthen internal controls, which reduces capital costs through improved risk governance credibility. Based on these conclusions, the study proposes targeted recommendations for enterprises, regulatory authorities, and financial institutions to address the implications of ESG rating divergences.

Keywords: ESG, ESG Rating Divergence, Cost of Capital.

1 Introduction

ESG, called environmental, social, and governance, has emerged as a critical framework for corporate sustainability, reflecting investor focus on long-term value creation and societal demands for environmental stewardship, social equity, and ethical governance. Rooted in mid-20th-century challenges like climate change and corporate scandals, the concept gained mainstream traction after the UN Global Compact integrated sustainability into investment systems in 2004. Global ESG investments surged to \$41 trillion by 2021 (38% of professionally managed assets), with over 80% of institutional investors now systematically considering ESG factors. While ESG ratings serve as vital evaluation tools that quantify corporate sustainability performance, significant disparities exist across rating methodologies due to varying criteria, data sources, and weighting systems, often resulting in divergent scores for the same entity. This fragmentation presents challenges despite ESG's growing market recognition and regulatory standardization efforts. The cost of capital, which is the minimum rate of return an

enterprise should pay to obtain funds, directly affects its investment and financing decisions and long-term value creation. In investment decisions, the cost of capital serves as the benchmark discount rate for project evaluation, determining the investment project's feasibility. In financing decisions, enterprises need to weigh the cost of debt capital against the cost of equity capital to optimize their capital structure.

ESG rating divergence can influence the cost of capital by shaping the market's judgment on a company's sustainable development capabilities. These rating differences may lead investors to have varying expectations for a company's future cash flow and risks, thereby demanding different rates of return, ultimately impacting the cost of capital. This inconsistency intensifies information asymmetry, increases investors' risk perception, and subsequently raises the equity capital cost and debt financing cost for the enterprise [1].

2 Research Hypothesis

ESG ratings are designed to assess a company's performance in terms of environmental, social, and governance factors. Although some investors dispute the view that the higher a company's ESG score, the better its financial performance, academic research tends to suggest that investments focused on sustainability can increase returns in the long term. Claude Lopez et al. proposed that a set of standard variables could partially address the inconsistencies among rating providers and the lack of unified standards, which often confuses investors [2]. Baker et al. pointed out in their research that environmental, social, and governance (ESG) goals, which are largely driven by the understanding of shareholders' interests by corporate executives and boards of directors, have risen to an important position on the agenda [3]. They quantified shareholders' emphasis on ESG through research. Rouen et al. studied the evolution of ESG reports of S&P 500 index companies from 2010 to 2021 and found that the proportion of companies issuing these voluntary disclosure reports increased from 35% to 86%, but the growth in report length was relatively small [4]. Some scholars believe that ESG is at a turning point, representing the broad and vague aspirations that enterprises should undertake beyond maximizing shareholder value. As ESG advocates are on the defensive, business leaders need a new roadmap to identify the factors to focus on [5]. Corporate capital cost is a central topic in corporate finance, with information asymmetry and risk levels serving as critical determinants. The capital structure theory proposed by Modigliani and Miller posits that capital structure remains irrelevant to capital costs under perfect market assumptions [6]. Extending this logic, Botosan empirically establishes that enhanced disclosure quality significantly lowers equity capital costs by mitigating information asymmetry and strengthening investor confidence [7]. Mio et al. further confirmed using a sample of 23,201 monthly observations of companies that when there is a significant divergence in ESG ratings, the reducing effect of the average ESG score on the cost of equity capital will be weakened, and investors will demand higher risk compensation due to rating contradictions [8]. While academic consensus on the formation mechanisms of ESG rating divergence remains elusive, its implications for in-

vestment decisions have garnered increasing attention. Research indicates that assessment differences will interfere with the resource allocation function of the capital market [9]. Through analysis that more ESG disclosures not only did not reduce the differences, but might instead intensify the disparities among rating agencies. Such differences would lead to an increase in the volatility of corporate returns and an enhanced perception of risks among investors [10]. Divergent evaluations may impair market efficiency through dual channels: First, they potentially distort resource allocation by prolonging investor decision-making processes and disrupting capital pricing mechanisms [11,12]. Second, the impact on equity pricing remains contested, with Dimson et al. finding no significant correlation between rating divergence and security returns [13]. Other research identify that ESG rating divergence amplifies investor uncertainty in risk assessment, thereby elevating corporate capital costs [14]. This conclusion aligns with Chatterji et al.'s argument that rating discrepancies undermine assessment credibility, complicating investors' ability to evaluate sustainable development potential [15]. Building on this theoretical and empirical foundation, propose the core hypothesis:

H1: Greater ESG rating divergence correlates with higher corporate capital costs.

When investors encounter ESG rating divergences, they face challenges in discerning firms' authentic ESG performance, exacerbating information asymmetry and distorting investment decision-making processes. Building on the information asymmetry theory, Barley posits that disparities in information access among market participants may precipitate resource misallocation [16]. The resultant uncertainty amplifies market volatility, as investor misestimation of expected returns under incomplete information regimes directly propagates into asset price fluctuations [17]. Functioning as an "information amplifier" in capital markets, media outlets align closely with the agenda-setting theory in their reporting strategies. ESG rating divergences, inherently contentious and newsworthy, naturally attract heightened media attention. Synthesizing these theoretical foundations, this study advances the following core hypothesis:

H2: ESG rating divergence amplifies media scrutiny, which in turn elevates capital costs.

The relationship between ESG rating divergence and corporate internal control mechanisms exhibits intrinsic endogeneity, as the efficacy of internal control systems directly governs the quality of ESG disclosures and risk management capabilities. Deficiencies in internal control frameworks may precipitate inconsistent ESG data collection protocols, resulting in material misstatements and information asymmetry. Heightened ESG rating divergence compels firms to strengthen internal control systems in an effort to reduce future discrepancies and improve rating consistency. Such proactive governance enhancements are interpreted by external stakeholders as evidence of superior self-corrective capabilities and risk governance, thereby reducing financing constraints through improved investor confidence. Synthesizing these mechanisms, this study proposes the following hypothesis:

H3: ESG rating divergence incentivizes firms to optimize internal control mechanisms, consequently reducing capital costs.

3 Data and Model

3.1 Sample Selection

To guarantee data validity, this study chooses listed companies in the Shanghai and Shenzhen A-share markets from 2019 to 2023 that have ESG ratings from six rating agencies, namely Huazheng, Wind, Sustainalytics (Menglang), SynTao Green Finance, FTSE Russell, and Bloomberg. Specifically, the ESG ratings of Huazheng, Wind, Sustainalytics, SynTao Green Finance, and FTSE Russell are retrieved from the Wind Database, whereas the Bloomberg ESG ratings are acquired from Bloomberg Index Services Limited. Other financial data are collected from the Wind Database and the CSMAR Database. The media attention indicators are obtained from the CNRDS database, and the internal control index indicators are sourced from the DIB Internal Control and Risk Management database. To reduce the impact of outliers on the empirical results, the data are winsorized at the 1st and 99th percentiles. The sample undergoes the following refinements: (1) exclusion of ST and *ST designated firms; (2) removal of financial sector enterprises; (3) elimination of observations with missing values in key explanatory variables or control variables. The final analytical sample comprises 15,700 observations.

3.2 Variable Selection and Model Construction

Explained Variable. The paper uses Weighed Average Cost of Capital (WACC) as the explained variable. The cost of equity capital and the cost of debt capital were comprehensively considered. The formula 1 can be seen as follows.

$$WACC = \left(\frac{E}{E+D} \times r_e \right) + \left(\frac{D}{E+D} \times r_d \times (1 - T_c) \right) \quad (1)$$

E refers to Market Value of Equity, D refers to Market Value of Debt, r_e refers to the Cost of Equity Capital, r_d refers to Cost of Debt Capital, and T_c refers to the Corporate Income Tax Rate.

Core Explanatory Variable. The explanatory variable is the ESG rating divergence (ESGdif). This study quantifies ESG rating disagreement by aggregating and standardizing ESG ratings from six agencies: Wind, Huazheng, SynTao Green Finance, Sustainalytics, FTSE Russell, and Bloomberg. The methodology proceeds as follows: First, convert ordinal ratings into numerical values across all providers. Ratings from Huazheng, Wind, and Sustainalytics follow a nine-tier grading system (AAA to C). Assign these categories numerical equivalents from 9 (AAA) to 1 (C), maintaining ordinal consistency where higher ratings correspond to greater numerical values. SynTao Green Finance employs a ten-tier system (A+ to D), which normalize by mapping D=0, C=1, C=2, C=3, ..., up to A+=9. For Bloomberg and FTSE Russell, which report continuous scores, apply linear transformations: Bloomberg's 0-100 scale is converted via multiplication by 9/100, while FTSE Russell's 0-5 scale uses 9/5 as the conversion factor, with both series rounded to integers post-scaling. These adjustments align all rating systems to comparable 0-9 numerical ranges.

Control Variable. As shown in Table 1, the control variable is Size, TOP1, ListAge, and TobinQ. The mediating variable is and IC.

Table 1. Main variable custom table

Variable	Sym- bol	Formula Mode
Cost of Capital	WACC	The weighted average of the weights of various types of capital in the total capital sources.
ESG Rating Divergence	ESGdif	The ESG rating data of six rating agencies were adopted, assigned values and the standard deviation was calculated.
Company Size	Size	Logarithm with natural applied to aggregate corporate assets.
Ownership Concentration	TOP1	Percentage of shares held by the largest shareholder.
The Age of the Enterprise Going Public	ListAge	Natural logarithm of the difference between the statistical year and the firm's founding year plus one.
Enterprise Value	To- binQ	$\frac{\text{Value of Stock Market}}{\text{Corporate net worth}}$
Media Attention	Media	The number of times a listed company is reported by online media each year.
Internal Control Index	IC	Comprehensively evaluate the five core dimensions of enterprise governance structure, determine the weights of each indicator by principal component analysis and synthesize them by weighting.

Model Building. The paper selects the fixed-effect model and establishes the following benchmark regression model (formula 2):

$$WACC_{it} = \beta_0 + \beta_1 ESGdif_{it} + \beta_2 Size_{it} + \beta_3 Top1_{it} + \beta_4 ListAge_{it} + \beta_5 TobinQ_{it} + u_i + \gamma_t + \varepsilon_{it} \quad (2)$$

i represents a business entity and t represents the year, represents the cost of capital, refers to the ESG rating divergence. Size, Top1, ListAge, and represent the relevant control variables, represent the time-fixed effect, represent individual fixed effects. is the estimated coefficient, and for the random error term.

3.3 Descriptive Statistics

As shown in Table 2, the weighted average cost of capital (WACC) exhibits considerable variance across sample firms, with a standard deviation of 1.9990. This dispersion likely reflects inter-firm differences in sector-specific risk profiles, capital structure compositions, and heterogeneous financing environments. Notably, ESG rating divergence (ESGdif) demonstrates significant variation as well with a standard deviation of

0.6843. Such pronounced divergence may stem from methodological disparities across rating agencies, variations in corporate disclosure quality.

Table 2. Descriptive statistics

VarName	Mean	SD	Min	Median	Max
WACC	4.8312	1.9992	1.4000	5.1700	9.0350
ESGdif	1.2949	0.6843	0.0181	1.3083	2.8689
Size	22.5368	1.3216	20.1824	22.3348	26.5664
Top1	0.3221	0.1460	0.0782	0.2990	0.7272
ListAge	2.3996	0.6902	0.6931	2.4849	3.4340
TobinQ	1.9641	1.2399	0.8011	1.5797	7.9894
Media	4.7399	0.9040	2.8904	4.6444	7.7745
IC	6.3725	0.7581	0.0000	6.4832	6.7040

4 Analysis of Empirical Results

4.1 Benchmark Regression Analysis

Table 3. Benchmark regression result

	(1) WACC	(2) WACC
ESGdif	0.0852*** (6.4086)	0.0853*** (6.4109)
Size		-0.1333*** (-3.9758)
Top1		-0.4570** (-2.2646)
ListAge		0.2041*** (3.1225)
TobinQ		-0.0362*** (-3.2352)
_cons	5.1869*** (232.6111)	7.9419*** (10.8669)
Unit	Fixed	Fixed
Year	Fixed	Fixed
N	15700	15700
adj. R2	0.827	0.827
F	15587.11	8682.77

Note: *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. The t-value is presented in parentheses.

The correlation coefficients of key variables demonstrate statistical significance at the 5% level for most pairwise comparisons, indicating no significant multicollinearity

among the variables. Table 3 presents the regression outcomes of ESG rating divergence (ESGdif) on corporate cost of capital (WACC). Column (1) displays the regression results without incorporating control variables, while column (2) shows the results when control variables are included. As can be observed from Table 3, regardless of the inclusion of control variables, the influence of ESG rating divergence on corporate cost of capital is positively correlated at the 1% significance level, which aligns with Hypothesis H1.

4.2 Endogeneity and Robustness Tests

Table 4. Endogeneity test

	(1) ESGdif	(2) WACC
ESG_iv	1.0917*** (53.3475)	
ESGdif		0.1163*** (4.2748)
Size	0.0840*** (18.7656)	0.2047*** (27.7535)
Top1	0.0010 (0.0307)	-0.4153*** (-8.3989)
ListAge	0.1276*** (15.8773)	0.0025 (0.2094)
TobinQ	0.0540*** (12.8348)	-0.1023*** (-16.0003)
_cons	-2.9011*** (-30.7064)	0.8926*** (6.0666)
adj. R2	501.97	501.97

Note: *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. The t value is presented in parentheses.

Endogeneity Test. To tackle endogeneity issues and verify the robustness of the empirical results, this research employs an instrumental variable method. The observed association between ESG rating dispersion and corporate cost of capital might be affected by reverse causality - it is possible that higher financing costs lead to ESG rating divergence instead of the other way around. The industry average ESG rating dispersion (ESG_iv) is used as the instrumental variable in the two - stage least squares (2SLS) estimation. As presented in Columns (1) and (2) of Table 4, the coefficient of ESG rating dispersion is still positive and statistically significant at the common levels, which is in line with the results of the baseline regression. These results confirm the causal relationship: even after controlling for endogeneity using instrumental variable techniques, ESG rating dispersion significantly increases the firms' cost of capital.

Robustness Test. In the basic regression, this paper gauges the divergence among the Huazheng ESG rating index, Wind ESG rating index, Menglang FIN - ESG rating index, Shangdao Ronglv ESG rating index, FTSE Russell ESG rating score, and Bloomberg ESG rating score by computing the standard deviation, thus defining the core explanatory variable ESGdif. This paper also calculates the range of the assigned values (ESGrange). The explanatory variables are replaced to measure the degree of ESG rating divergence and then substituted into the regression model. The results are presented in Table 5. As can be observed from column 6 of Table 5, after replacing the explanatory variable, the regression coefficient of ESG rating divergence (ESGrange) is 0.0460. There exists a significant positive correlation at the 1% level between ESG rating divergence (ESGrange) and the corporate cost of capital (WACC), which is in line with hypothesis H1, validating the robustness of the model.

Table 5. Robustness test

	Replace the Explanatory Variable WACC
ESGrange	0.0460*** (6.7567)
Size	-0.1379*** (-4.1135)
Top1	-0.4569** (-2.2647)
ListAge	0.1993*** (3.0481)
TobinQ	-0.0365*** (-3.2671)
_cons	8.0595*** (11.0256)
unit	fixed
year	fixed
N	15700
adj. R2	0.827
F	8686.41

Note: *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. The t value is presented in parentheses.

4.3 Heterogeneity Analysis

Analysis of Heterogeneity of Property Rights. The ownership nature of enterprises exerts a notable influence on the disparities in ESG ratings. Varying property rights attributes will result in differences in their respective ESG ratings. Consequently, this paper categorizes the sample enterprises into two groups: state-owned enterprises and non-state-owned enterprises, aiming to explore the impact of ESG rating differences on the capital costs of enterprises with different property rights. The regression results are presented in Table 6. As can be discerned from Column (2) of Table 6, the influence of

ESG rating divergence on the capital cost of non-state - owned enterprises is significantly and positively correlated at the 1% significance level. This implies that, in comparison with state-owned enterprises, ESG rating divergence has a more pronounced effect on elevating the capital cost of non-state-owned enterprises.

Table 6. Analysis of heterogeneity of property rights

	(1) state-owned business	(2) non-state-owned enterprises
	WACC	WACC
ESGdif	0.0005 (0.0226)	0.1057*** (6.7716)
Size	-0.1014* (-1.6929)	-0.1227*** (-3.0844)
Top1	-0.5400* (-1.7647)	-0.1739 (-0.6561)
ListAge	0.1556 (1.0083)	0.0457 (0.5813)
TobinQ	-0.0348 (-1.3507)	-0.0301** (-2.4803)
_cons	7.6234*** (5.3997)	7.8119*** (9.1815)
Unit	Fixed	Fixed
Year	Fixed	Fixed
N	5340	10360
adj. R2	0.789	0.850
F	2343.65	6747.40

Note: *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. The t value is presented in parentheses.

The observed effects may be attributed to the buffering role of policy support and implicit guarantees inherent in state-owned enterprises (SOEs). Specifically, this institutional advantage manifests through two channels: resource allocation preferences and credit endorsement. SOEs' intrinsic ties to governmental entities grant prioritized access to fiscal subsidies, tax incentives, and policy-directed financing. These implicit guarantees reduce investor sensitivity to ESG rating divergences, as market participants generally anticipate governmental bailouts to ensure debt servicing capacity regardless of rating controversies, thereby weakening the transmission mechanism from rating discrepancies to capital costs.

The divergence also stems from fundamental differences in information environments and investor perceptions. Building on Botosan's theoretical framework, which identifies information asymmetry as a primary driver of capital costs, SOEs' mandatory public service obligations subject them to stricter ESG disclosure requirements, resulting in higher transparency that constrains the interpretive scope of rating divergences.

Conversely, non-SOEs' voluntary disclosure mechanisms often yield fragmented or inconsistent ESG data, amplifying investor uncertainty about true risk exposures when rating divergences occur.

Lastly, financing channel stratification reinforces this disparity. SOEs leverage low-cost funding avenues through policy-oriented banks and bond markets, reducing reliance on equity financing. Consequently, potential equity cost increases induced by ESG rating divergences are diluted through debt financing advantages. In contrast, non-SOEs' dependence on market-driven financing exposes them directly to full pricing impacts of rating divergences across both equity and debt instruments.

Analysis of Regional Heterogeneity. This paper divides the sample enterprises into three groups: eastern, central, and western. The regression results are shown in Table 7 below. It can be seen that the impact of ESG rating divergence on the capital cost of enterprises in the eastern region is significantly positively correlated at the 1% level. It is indicated that, compared with enterprises in the central and western regions, the ESG rating divergence has a more significant effect on increasing the capital cost of enterprises in the eastern region.

Table 7. Heterogeneity analysis in different regions

	(1) Eastern Re- gion WACC	(2) Middle Re- gion WACC	(3) Western Region WACC
ESGdif	0.0987*** (6.4847)	0.0325 (0.9271)	0.0297 (0.6731)
Size	-0.1573*** (-4.0419)	-0.0817 (-0.8620)	0.0242 (0.2397)
Top1	-0.1331 (-0.5623)	-1.4552*** (-2.6923)	-1.4664** (-2.4874)
ListAge	0.2881*** (3.8131)	-0.0709 (-0.3749)	-0.2368 (-1.1534)
TobinQ	-0.0401*** (-3.0493)	-0.0452 (-1.5751)	0.0013 (0.0425)
_cons	8.1741*** (9.6428)	7.8555*** (3.7686)	5.8793*** (2.6866)
Unit	Fixed	Fixed	Fixed
Year	Fixed	Fixed	Fixed
N	11570	2405	1725
adj. R2	0.830	0.823	0.815
F	6527.32	1298.51	881.52

Note: *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. The t value is presented in parentheses.

The regional disparities that observed in the impact of ESG rating divergences on cost of capital between Eastern and Central-Western China may stem from systemic variations in market maturity, information efficiency, investor composition, and policy reliance. In Eastern China, higher marketization levels and advanced financial infrastructure facilitate the rapid dissemination of ESG information, enabling investors to promptly integrate rating discrepancies into pricing models. The prevalence of institutional investors and widespread adoption of ESG-oriented investment strategies amplify sensitivity to rating divergences, triggering risk-averse portfolio adjustments that directly elevate capital costs. Conversely, Central-Western China's less developed capital markets exhibit fragmented information flows and behavioral inertia among retail-dominated investor bases, where short-term financial metrics overshadow ESG considerations, dampening the salience of rating inconsistencies. Divergent policy dependencies further reinforce this regional dichotomy. Eastern private enterprises, operating within market-driven financing ecosystems, face direct exposure to ESG-related pricing penalties, as reduced fiscal subsidies necessitate internalization of sustainability risks. In contrast, state-backed firms in Central-Western regions benefit from policy buffers such as low-interest loans and government credit guarantees, which substitute for ESG credibility and dilute rating divergence effects.

4.4 Mechanism Analysis

Building upon the empirical foundation established by prior research on the impact of ESG rating divergence on corporate capital costs, this section introduces two mediating variables—media attention and internal control index—to systematically examine their intermediary roles in the causal pathway. To delineate the mechanistic linkages through which ESG rating divergence influences capital costs, employ a stepwise regression analysis to rigorously test the mediating effects. This approach enables the decomposition of direct and indirect effects while controlling for potential confounding factors, thereby elucidating the operational channels of rating divergence within capital market pricing mechanisms.

Test of Media Attention Mechanism. Table 8 presents regression results examining the relationships among ESG rating divergence, media attention, and corporate capital costs. Column (1) reports the regression of media attention (Media) on ESG rating divergence (ESGdif), while Column (2) demonstrates the regression of weighted average cost of capital (WACC) on both ESGdif and Media. As shown in Column (1), ESG rating divergence exhibits a correlation with media attention, which is statistically significant positive at the 1% level. Column (2) reveals that both ESGdif and Media are positively associated with WACC at the 1% significance level. These findings collectively suggest that heightened ESG rating divergence corresponds to elevated capital costs, mediated through increased media scrutiny. The statistically robust mediation effect of media attention confirms the validity of Hypothesis H2, as evidenced by the Sobel test and bootstrapped confidence intervals excluding zero.

Table 8. Test results of the mechanism effect of media attention

	(1)	(2)
	Media	WACC
ESGdif	0.1653*** (20.7469)	0.0631*** (4.6781)
Media		0.1342*** (9.0386)
Size	0.3778*** (18.8118)	-0.1840*** (-5.4303)
Top1	-0.1300 (-1.0753)	-0.4396** (-2.1850)
ListAge	0.6045*** (15.4373)	0.1229* (1.8694)
TobinQ	0.1492*** (22.2797)	-0.0562*** (-4.9463)
_cons	-5.5295*** (-12.6284)	8.6841*** (11.8456)
Unit	Fixed	Fixed
Year	Fixed	Fixed
N	15700	15700
R2	0.177	0.863
F	299.91	7872.90

Note: *** indicates significance at the 1% level, ** at the 5% level, and * at the 10% level. The t value is presented in parentheses.

Internal Control mechanism inspection. Table 9 presents regression results examining the relationships among ESG rating divergence, internal control quality, and corporate capital costs. Column (1) reports the regression of internal control index (IC) on ESG rating divergence (ESGdif), while Column (2) demonstrates the regression of weighted average cost of capital (WACC) on both ESGdif and IC. As shown in Column (1), ESG rating divergence exhibits a correlation with internal control quality, which is statistically significant positive at 1% level. Column (2) reveals that ESGdif maintains a positive association with WACC, whereas internal control quality demonstrates a significant negative relationship with WACC at the 1% significance level. These results collectively indicate that heightened ESG rating divergence incentivizes firms to strengthen internal control systems, which subsequently reduces capital costs through enhanced operational transparency and risk mitigation. The mediation effect of internal control quality is statistically validated via Sobel test, thereby confirming Hypothesis H3.

Table 9. Test results of the mechanism effect of internal control

	(1)	(2)
	IC	WACC
ESGdif	0.0787*** (6.5350)	0.0876*** (6.5743)
IC		-0.0292*** (-2.9593)
Size	0.1232*** (4.0581)	-0.1297*** (-3.8673)
Top1	0.0547 (0.2995)	-0.4554** (-2.2573)
ListAge	0.0396 (0.6692)	0.2052*** (3.1411)
TobinQ	0.0061 (0.5993)	-0.0360*** (-3.2204)
_cons	3.4205*** (5.1678)	8.0416*** (10.9951)
Unit	Fixed	Fixed
Year	Fixed	Fixed
N	15700	15700
R2	0.019	0.862
F	26.67	7820.20

Note: ***, **, and * respectively indicate significance at the 1%, 5%, and 10% levels, with the t value in parentheses.

5 Conclusions

Through a systematic analysis of the impact of ESG rating divergence on the capital cost of enterprises, the study reveals the intrinsic connection and pattern between the two. Research has found that the higher the degree of ESG rating divergence, the higher the capital cost of enterprises tends to rise accordingly. Certain characteristics of enterprises, such as different property rights and different regions, will also affect the capital cost of enterprises to a certain extent. Specifically, the ESG rating divergence has a more significant impact on non-state-owned enterprises and enterprises in the eastern region. Also, the divergence in ESG ratings will intensify media attention, thereby increasing capital costs, while simultaneously compelling firms to strengthen internal controls, which reduces capital costs through improved risk governance credibility.

The results have important implications for investors, companies, rating agencies, and regulators. Enterprises should focus on improving the construction of ESG information disclosure mechanisms, enhance information transparency by formulating

standardized disclosure frameworks, regularly release special reports including core indicators such as E, S, G structure. Government regulatory authorities need to accelerate the unification of ESG disclosure norms, collaborate with departments such as the China Securities Regulatory Commission and the Ministry of Ecology and Environment to formulate mandatory information disclosure guidelines, clarify the measurement standards for key indicators such as carbon emissions and water resource utilization, use blockchain technology to build an ESG data reporting platform for enterprises. In terms of the supervision of rating agencies, the filing management system should be improved, requiring institutions to publicly disclose the weight Settings of rating models and the mechanism for preventing conflicts of interest. Financial institutions should accelerate the innovation of ESG financial products, develop standardized tools such as carbon neutrality bonds and ESG-themed ETFs, and establish quantification of cutting-edge indicators including biodiversity conservation and data security.

Reference

1. Diamond, D.W., Verrecchia, R.E.: Disclosure, liquidity, and the cost of capital. *The Journal of Finance* 46(4), 1325–1359 (1991)
2. Lopez, C., Contreras, O., Bendix, J.: ESG ratings: the road ahead. Available at SSRN 3706440 (2020)
3. Baker, M., Egan, M.L., Sarkar, S.K.: How do investors value ESG? National Bureau of Economic Research (2022)
4. Rouen, E., Sachdeva, K., Yoon, A.: The evolution of ESG reports and the role of voluntary standards. Available at SSRN 4227934 (2022)
5. Sætra, H.S.: The ESG backlash: politics, ideology, and the future of sustainable business. *Responsible Firms: CSR, ESG, and Global Sustainability*. Emerald Publishing Limited (2024)
6. Modigliani, F., Miller, M.H.: The cost of capital, corporation finance and the theory of investment. *American Economic Review* 48(3), 261–297 (1958)
7. Botosan, C.A.: Disclosure level and the cost of equity capital. *The Accounting Review* 72(3), 323–349 (1997)
8. Mio, C., Fasan, M., Scarpa, F., et al.: Unveiling the consequences of ESG rating disagreement: an empirical analysis of the impact on the cost of equity capital. *Accounting in Europe* 1–24 (2024)
9. Cortez, M.C., Silva, F., Areal, N.: Socially responsible investing in the global market: the performance of US and European funds. *International Journal of Finance & Economics* 17(3), 254–271 (2012)
10. Christensen, D.M., Serafeim, G., Sikochi, A.: Why is corporate virtue in the eye of the beholder? The case of ESG ratings. *The Accounting Review* 97(1), 147–175 (2022)
11. Avramov, D., Cheng, S., Lioui, A., et al.: Sustainable investing with ESG rating uncertainty. *Journal of Financial Economics* 145(2), 642–664 (2022)
12. Gibson, B.R., Krueger, P., Schmidt, P.S.: ESG rating disagreement and stock returns. *Financial Analysts Journal* 77(4), 104–127 (2021)
13. Dimson, E., Marsh, P., Staunton, M.: Divergent ESG ratings. *The Journal of Portfolio Management* 47(1), 75–87 (2020)
14. Berg, F., Koelbel, J.F., Rigobon, R.: Aggregate confusion: the divergence of ESG ratings. *Review of Finance* 26(6), 1315–1344 (2022)

15. Chatterji, A.K., Durand, R., Levine, D.I.: Do ratings of firms converge? Implications for managers, investors, and strategy researchers. *Strategic Management Journal* 37(8), 1597–1614 (2016)
16. Barley, S.R.: The pricing of options and corporate liabilities. *Journal of Political Economy* 81(3), 637–654 (1973)
17. Akerlof, G.A.: An economic theorist's book of tales. *The American Economic Review* 74(2), 166–170 (1984)

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

