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Divergences among ESG rating systems: Evidence from financial indexes

Conghao Zhu [a], Cunyi Yang [b, *]

[a] *International Business School, Tianjin Foreign Studies University, Tianjin, China*

[b] *Lingnan College, Sun Yat-Sen University, Guangzhou, China*

ABSTRACT

This paper specifically underscores the disparities among various ESG rating systems in China, highlighting their varied interpretations and emphasis on corporate financial factors. Analyzing data on Chinese listed firms from 2009-2022, we observe that while company size and leverage ratio uniformly correlate with ESG scores across rating agencies such as Bloomberg, Huazheng, Wind, and Hexun, the influence of factors like return on assets, cash flow, company age, and Tobin's Q is markedly inconsistent among these agencies. For instance, while operational cash flow and company age are positively associated with ESG ratings from Bloomberg, Huazheng, and Wind, they hold an inverse relationship with Hexun's ratings. This divergence underscores the unique data collection, weighting, and evaluation methodologies employed by each rating system. The study emphasizes the criticality of comprehending the nuances of each rating agency's approach when interpreting ESG scores and crafting ESG strategies. Moreover, it advocates for integrating insights from multiple rating systems to cater to the diverse expectations of stakeholders.

KEYWORDS

ESG rating systems; corporate financial factors; rating divergence; ESG strategy

* Corresponding author: Cunyi Yang
E-mail address: yangcy9@mail2.sysu.edu.cn

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1. Introduction

In recent years, the significance of Environmental, Social, and Governance (ESG) factors in gauging corporate performance has surged globally (Zhai et al., 2022). Societal focus on environmental conservation, social responsibility, and robust governance has prompted corporations to look beyond mere financial metrics as comprehensive indicators of their standing among stakeholders (Li and Pang, 2023). However, a critical observation arises from the varied ESG scores given by different rating agencies. Notably, the annual changes in scores from Bloomberg, Huazheng, Wind, and Hexun, depicted in Figure 1, underscore this variability.

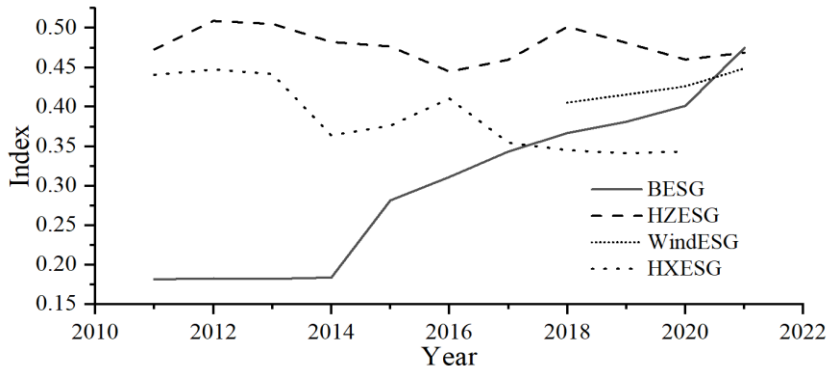

Figure 1. ESG Ratings by Different Institutions from 2010 to 2021.

In Figure 1, it is evident that there are significant differences in the ESG scores provided by various ESG rating agencies. For example, from 2014 to 2016, Bloomberg ESG Score (BESG) and Wind ESG Score showed a continuous upward trend, while Huazheng ESG Score (HZESG) consistently declined. Similarly, from 2018 to 2020, Bloomberg ESG Score and Wind ESG Score continued to rise, but Hexun ESG Score (HXESG) exhibited a continuous decline. These distinct trends in ESG scores from different agencies indicate that these organizations employ different criteria or methodologies when assessing companies' environmental, social, and governance performance. Therefore, this article aims to briefly analyze the relationship between fluctuations in ESG scores assigned by different systems and financial variables amidst the evolving business landscape.

2. Data Processing

2.1. Data Sources and Sample Processing

This study leverages data from Chinese publicly listed companies on the Shanghai and Shenzhen A-share markets from 2009 to 2022. Huazheng ESG data and Wind ESG data are sourced from the Wind Financial Terminal, Bloomberg ESG data originates from Bloomberg's Environmental, Social, and Corporate Governance database, and Hexun ESG data is drawn from the Hexun website. All other data is extracted from the CSMAR database. To ensure data accuracy, the selection adheres to the following criteria: (1) Exclusion of companies from the financial and real estate sectors. (2) Omission of firms that have been listed for less than a year and have either delisted or been suspended, the exclusion of companies listed on the Beijing Exchange, and the removal of ST categorized firms. (3) Removal of companies with negative revenues and total assets. (4) Exclusion of observations missing independent and dependent variables. (5) For variables with outliers, a trimming process is applied, narrowing down to the top and bottom 1% of values.

2.2. Model Specification and Variable Definition

To investigate the influence of corporate financial variables on ESG scores assigned by various agencies, the following model is established:

$$ESG_{i,t+1} = \alpha_0 + \gamma X_{i,t} + \sum_t Year_t + \sum_i Individual_i + \varepsilon_{i,t} \quad (1)$$

Where the subscripts i and t represent the sample entity and year respectively. (1) Dependent Variable ($ESG_{i,t+1}$). $ESG_{i,t+1}$ denotes the ESG score for company i in year $t+1$. This encompasses scores from: Bloomberg ESG, Huazheng ESG, Wind ESG, and Hexun ESG. (2) Independent Variable ($X_{i,t}$). $X_{i,t}$ includes a series of financial factors that might influence a company's ESG rating. Specifically, for company i in year t, these comprise: Size (Size), Leverage ratio (Lev), Return on Assets (ROA), Sales Growth Rate (Growth), Ratio of Long-Term Assets (PPE), Net Operating Cash Flow Rate (CFO), Company Age (Age), Largest Shareholder's Ownership Ratio (Top1), Tobin's Q (TobinQ), and Staff Scale (STAFF). (3) Other Control Variables. This study accounts for individual (Individual) and yearly (Year) fixed effects, with ε representing the random error term. Table 1 delineates the primary variables' definitions and calculations.

Table 1. Primary Variables and Definitions.

Abbr.	Variable Name	Definition
BESG	Bloomberg ESG Score	ESG score provided by Bloomberg for the respective year.
HZESG	Huazheng ESG Score	ESG score provided by Huazheng for the respective year.
WindESG	Wind ESG Score	ESG score provided by Wind for the respective year.
HXESG	Hexun ESG Score	ESG score provided by Hexun for the respective year.
Size	Company Size	Natural logarithm of the book value of assets at the end of the year.
Lev	Company Leverage Ratio	Ratio of total liabilities to total assets at the end of the year.
ROA	Company Return on Assets (ROA)	After-tax net profit at year-end divided by total assets.
Growth	Company Sales Growth Rate	Ratio of sales revenue at year-end to the sales revenue of the previous year.
PPE	Company Long-term Asset Ratio	Ratio of fixed assets to total assets at the end of the year.
CFO	Company Net Operating Cash Flow Rate	Ratio of net cash flow from operations to total assets at the end of the year.
Age	Company Age	Logarithm value of the number of years since establishment plus one.
Top1	Largest Shareholder's Ownership Ratio	Ratio of shares held by the largest shareholder to the circulating shares at the end of the year.
TobinQ	Tobin's Q for the Company	Stock market value at the end of the year divided by total assets.
STAFF	Staff Scale of the Company	Natural logarithm of the number of employees at the end of the year.

3. Empirical Findings and Discussion

Table 2 presents the benchmark regression results detailing the effects of ESG scores from various institutions on corporate financial variables. Firstly, examining the correlation between institutional ESG scores and financial metrics, we find that six financial variables are significantly correlated with Bloomberg's ESG scores; likewise, six with Huazheng's, four with Wande's, and eight with Hexun's. Notably, Hexun's ESG scores show the most significant correlations with financial variables, whereas Wande's scores exhibit the least. Furthermore, when observing the correlation from the perspective of financial metrics, the coefficients for both company size and leverage ratio remain consistently significant across the ESG scores from all institutions. Return on assets, operational net cash rate, company age, and Tobin's Q all significantly correlate with three institutional scores. However, it's pivotal to acknowledge the divergent signs in coefficients for operational net cash rate and company age: Huazheng's and Wande's scores negatively correlate with operational net cash rate, while Bloomberg's and Hexun's show a positive correlation. Meanwhile, company age positively correlates with scores from Bloomberg, Huazheng, and Wande, but negatively with Hexun's. The company's employee size, interestingly, doesn't show a significant correlation with any institutional ESG score. Lastly, in terms of R^2, Bloomberg's ESG score interpretation strength is the most robust at

69.57%, while Wande's is the weakest at merely 4.29%.

In summary, corporate financial variables undeniably influence the ESG scores across different institutions, affirming that such financial metrics play a pivotal role in determining ESG ratings. Both company size and leverage ratio consistently show significant correlation with all institutional ESG scores, reinforcing their undeniable impact on ESG ratings. Discrepancies in coefficient signs for operational net cash rate and company age among different institutions' ESG scores suggest divergent views on their correlation with ESG ratings. The vast variation in explanatory power among institutions further indicates significant disparities in their ESG scoring methods.

Table 2. Regression of the Impact of Corporate Financial Variables on ESG Ratings Across Different Institutions.

Items	(1) F.BESG	(2) F.HZESG	(3) F. WindESG	(4) F.HXESG
Size	1.5550***	0.2088***	0.2051***	2.5604***
	(0.2649)	(0.0229)	(0.0397)	(0.4222)
Lev	-1.8798*	-0.7713***	-0.2703**	-3.7808**
	(1.0303)	(0.0819)	(0.1197)	(1.4745)
ROA	5.2765***	1.7197***	0.0133	16.9764***
	(1.5196)	(0.1366)	(0.0924)	(2.7548)
Growth	-0.2350	0.1023***	-0.0343	2.4867***
	(0.2223)	(0.0196)	(0.0233)	(0.3746)
PPE	1.3572	-0.0202	0.0885	-5.3171***
	(1.2869)	(0.0973)	(0.1713)	(1.7700)
CFO	2.0228*	-0.2007**	-0.0125	7.3370***
	(1.1829)	(0.0978)	(0.1149)	(1.8537)
Top1	0.0094	0.0030**	0.0020	0.0163
	(0.0158)	(0.0015)	(0.0022)	(0.0247)
Age	1.6235***	0.0011	0.0390***	-1.2159***
	(0.0500)	(0.0036)	(0.0069)	(0.0796)
STAFF	0.0394	0.0039	-0.0000	-0.2853
	(0.1042)	(0.0090)	(0.0140)	(0.1740)
TobinQ	0.2432***	0.0043	0.0239**	0.8865***
	(0.0766)	(0.0070)	(0.0103)	(0.1259)
Individual FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	6,306	20,708	8,104	15,714
R-squared	0.6957	0.0769	0.0429	0.1701

*Note: Standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. "F." indicates the ESG rating for year t+1.*

This study emphasizes the impact of company size and leverage ratio on ESG ratings. Current literature on the influence of company size on ESG ratings is abundant and aligns with our proposition that company size correlates with varying institutional ESG scores. Stakeholder theory posits that firms maintain their "license to operate" by disclosing information to stakeholders (Gangi & D'Angelo, 2016). In this context, larger companies face heightened public scrutiny (Udayasankar, 2008), leveraging ESG reports as a testament to their broader commitment. Numerous factors dictate the influence of company size on ESG ratings, ranging from disclosure quantity, where larger entities disclose more information (Adams et al., 1998), to the tools they employ for ethical and sustainable behavior analysis (Graafland et al., 2003). Smaller firms grapple with higher competitive and cost pressures, making sustainable data provision costlier relative to their larger counterparts. Larger firms, with their abundant human and financial resources, possess greater knowledge of sustainability management tools, such as environmental management systems or sustainability balanced scorecards (Hörisch et al., 2015). They also tend to have more formalized reporting structures, with smaller firms often resorting to informal communication related to CSR activities (Hörisch et al., 2015). As company size increases, the production of intricate sustainability reports, aligned

with rating agencies' multifaceted ESG data requirements, also proliferates, with rating agencies employing multidimensional data tools (Gallo & Christensen, 2011). Greater visibility and prominence lead to amplified public pressure and intensified CSR initiatives (Baldini et al., 2018). Regarding leverage, a higher leverage ratio can impact a company's risk profile. Financial leverage amplifies interest expenses, negatively affecting earnings per share and heightening financial risk for shareholders (Benlemlih & Girerd-Potin, 2017).

4. Conclusion

Drawing upon data from publicly listed companies in the Shanghai and Shenzhen A-shares markets, spanning from 2009 to 2022, this study reveals how corporate financial variables influence the ESG ratings of Chinese listed companies across various rating agencies. The research indicates that financial variables impact ESG scores differently across various rating agencies. These disparities may be attributed to differences in data collection, weight allocation, and evaluation methodologies among agencies, which in turn influence the results of how corporate financial factors affect ESG ratings. This observation underscores the importance of a comprehensive understanding of the methodologies and focal points of rating agencies to ensure accurate and holistic insights when studying ESG scores. Additionally, it emphasizes that, in formulating ESG strategies and refining ESG ratings, companies should consider perspectives from multiple rating bodies to meet the expectations of various stakeholders. These insights offer guidance for corporate managers, investors, and regulatory authorities.

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Conflict of interest

All the authors claim that the manuscript is completely original. The authors also declare no conflict of interest.

Author contributions

Conceptualization: Yang, C.; Investigation: Zhu, C.; Writing – original draft: Zhu, C.; Writing – review & editing: Yang, C.

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