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ESG Rating and Enterprise Market Value

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Abstract

This paper selects the financial data of A-share listed companies from 2015 to 2020 and the ESG rating index of Shangdao ronglv to empirically analyze the impact of ESG rating on enterprise market value. The results show that there is a significant negative correlation between ESG rating and enterprise market value. After the robustness test, the above results are still valid. In addition, through the analysis of enterprise heterogeneity, it is found that when the company is a non-state-owned enterprise or small-scale enterprise, the negative correlation between ESG rating performance and enterprise market value is stronger. The research on ESG rating from the perspective of enterprise market value evaluation in the capital market will not only help to more comprehensively understand and understand the multi-dimensional impact of enterprise ESG rating on social and economic development, but also provide some help for capital market investors in investment and decision-making.

Keywords

ESG Rating; Enterprise Market Value; Enterprise Heterogeneity.

1. Introduction

Enterprise market value is an important index of enterprise performance evaluation, which plays an important role in enterprise development. ESG performance is an important indicator to judge the development of enterprises. The topic of whether its single dimension will affect the enterprise value has been widely discussed. How will the ESG rating of listed companies based on the full dimension synthesis of ESG affect the enterprise value? This influence has strong theoretical and practical significance, which is worthy of further research. Using the financial data of A-share listed companies from 2015 to 2020, this paper empirically tests the relationship between ESG rating performance and enterprise market value, and draws the following main conclusions: (1) there is a significant negative correlation between ESG rating performance and enterprise value. (2) Enterprise heterogeneity analysis shows that when the company is a non-state-owned enterprise or small-scale enterprise, the negative correlation between ESG rating performance and enterprise value is stronger.

The main contributions of this paper are as follows: firstly, the existing research literature on the impact of ESG rating on enterprises mainly focuses on corporate behavior levels such as corporate governance and corporate investment efficiency. This paper changes the research perspective, which is helpful to a more comprehensive understanding of the important impact of enterprise ESG rating on economic and social development. Secondly, the data of this paper is based on Chinese A-share listed companies. Compared with the previous data research based on western countries, it enriches the space-time scope and theoretical system of relevant data. Finally, from the perspective of capital market investors, this paper practically verifies the negative correlation impact of enterprise ESG rating improvement on enterprise market value, draws a conclusion that is different from some existing studies, enriches and demonstrates the research literature of relevant theories, and provides a certain reference for capital investors in decision-making and analysis.

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2. Literature Review

After comprehensively combing the literature on ESG impact results, it is found that previous scholars mostly studied its impact on enterprise market value from a single aspect of environment, social responsibility and corporate governance; However, with the development of academic research theory in recent years, it can be found that ESG system is gradually used as a whole to explore its impact on enterprise market value. Based on the existing literature, it is found that the research on the relationship between the two mainly has the following viewpoints:

2.1. Positive Correlation

Aboud and diab (2018) found a positive correlation between ESG index and corporate value (Tobin Q). It can be found that most of the research on positive conclusions comes from the research on the sample data of developed countries and economically developed regions. This may be because the capital market of developed countries is relatively perfect and the relevant theoretical and practical basis is sufficient. When observing their own environment, social responsibility and corporate governance performance, their sample data pay more attention to the impact of the improvement or reduction of their subsequent results on enterprise value and emphasize the subsequent consequential impact.

2.2. Negative Correlation

Sassen et al. found a negative correlation between the two based on the empirical data of European enterprises. It can be found that the negative correlation research data are mostly based on developing countries such as Southeast Asia or countries with relatively slow economic development. In developing countries or countries and regions with slow economic development, the original basis of ESG performance is relatively weak. In order to improve ESG rating, enterprises need to invest more capital and human resources in environment, social responsibility and corporate governance, which will reduce enterprise development funds and reduce enterprise value to a certain extent.In addition, some scholars believe that there is no direct relationship between the two.

To sum up, it can be determined that the enterprise ESG rating can have an impact on the economic value of the enterprise, but the impact remains to be determined through further research. It is speculated that the reason why the current literature has differences on the correlation between them may be that there are great differences in the types of main enterprises in different countries and regions due to different levels of economic development and marketization. At the same time, it is found that there is still a lack of relevant literature based on the comprehensive research and analysis of new economies and capital markets such as China, which are developing rapidly but belong to developing countries at the same time. Therefore, this paper attempts to further explore the impact of Chinese enterprise ESG performance on corporate value, demonstrate and enrich the research literature of relevant theories, promote enterprises to improve market value, and provide some reference for investors in investment analysis and market decision-making.

3. Research Hypothesis

ESG rating is the comprehensive ESG performance of listed companies obtained through comprehensive quantitative evaluation after systematically evaluating the ESG management data and ESG risk data of listed companies, which is a good wind direction guide and early warning device for listed companies. The negative impact of enterprise ESG rating on enterprise value is reflected in the following aspects:

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Firstly, based on the hypothesis of limited enterprise resources, the economic costs incurred by enterprises in ESG rating upgrading will come from the resources originally used to enhance shareholder value, and the operation of the company will produce additional economic costs, resulting in the loss of enterprise cash flow, the reduction of profit space and the reduction of enterprise value. To some extent, This explains to some extent that enterprises must invest in environmental, social and corporate governance in order to maintain a high ESG rating. These will consume and occupy more resources of the enterprise, increase the operation cost of the enterprise and compress the profit space.

Secondly, driven by profit seeking, managers are often motivated by short-term profit goals and tend to invest in environmental construction and social responsibility, so as to improve corporate social reputation and obtain short-term profits. Over investment in enterprise ESG will increase enterprise risk and current liabilities, affect the stability of enterprise operation, and may have a negative impact on enterprise value.Therefore, this paper puts forward the following main assumptions:

H0: the higher the ESG rating of a listed company, the lower its enterprise value.

4. Research Design

4.1. Data Sources

This paper selects the A-share listed companies in Shanghai and Shenzhen from 2015 to 2020 as the initial sample, and carries out relevant screening according to the following criteria: eliminate the companies with incomplete data during the sample data period; Companies with abnormal financial data (i.e. ST or * st) are eliminated, and 1410 valid data observations are finally sorted out. All sample data are from wind database and CSMAR database. Data screening and cleaning are mainly through Excel and Stata 15.1 completion. At the same time, in order to eliminate the interference of extreme values on the research results, the continuous variables were treated with 1% level Winsor.

4.2. Model Design

In order to test the research hypothesis, the following will use the data of A-share listed companies in Shanghai and Shenzhen stock markets from 2015 to 2020 for empirical test. Referring to relevant research, this paper uses OLS regression model to test the relationship between ESG risk events and enterprise value. The specific model is as follows:

$$TobinQ_{i,\xi} = \beta_0 + \beta_1 ESG_{i,\xi} + \beta_2 LEV_{i,\xi} + \beta_3 ROE_{i,\xi} + \beta_4 GROWTH_{i,\xi} + \beta_5 CF_{i,\xi} + \sum Indcd + \sum Year + \varepsilon$$

4.3. Variable Setting

(1) Explained variable: enterprise value (tobinq). Tobin Q is the ratio of stock market value to enterprise replacement assets.

(2) Explanatory variables: environmental, social and corporate governance risk event rating. This paper selects the ESG rating index in the commercial road ronglv star ESG database. The specific data comes from the wind database, and sets discrete variables according to the rating distribution: A + is 10, a is 9, and so on, D is 1.

(3) Control variables: control variables are a series of other variables that may affect the cost of corporate debt financing. According to the previous literature research and analysis, this paper selects lev (asset liability ratio), growth (operating income growth rate), size (enterprise scale), ROE (return on net assets), CF (cash flow) SOE (property right nature) as the control variables. In addition, this year also controlled the annual fixed effect (year) and industry fixed effect (industry).

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Table 1. List of variable definitions and calculations

Variable Type	Variable Name	Variable symbol	Variable definition
Explained variables	enterprise value	TobinQ	Stock market value / enterprise replacement assets
		BEV	Market value / total assets
Explanatory variables	ESG-Rating	ESG	Business Road Rong Green ESG Rating Metrics
		ESG-Rating	The rating of B + and above is quantified as 1,indicating the enterprises with good ESG performance; The rest is 0
Control variables	enterprise scale	Size	Natural logarithm of average total assets
	Financial leverage	Lev	Total liabilities/total average assets
	return on net assets	ROE	Net profit / average shareholders' equity
	operating income growth rate	Growth	Growth rate of operating income
	property right nature	Soe	0: non-state-owned enterprises, 1: state-owned enterprises. Judge according to the actual control nature
	cash flow	CF	Net cash flow from operations/total average assets

Source: Compiled from this article

5. Empirical Results and Analysis

5.1. Descriptive Statistics

Table 2 presents the descriptive statistical results of the main variables. It can be seen that (1The maximum value of enterprise value is 30.394, the minimum value is 0.698, and the standard deviation is 2.667, indicating that there are great differences in enterprise value between different companies. (2) The average and median of the ESG rating indicators of shangdaorong green are 5.123 and 5, indicating that the ESG rating of listed companies is at a medium level. (3) In the statistical results of other variables: the average enterprise scale is 24.536, and the sample enterprise scale has little difference;The average property right is 0.643, which indicates that almost half of the sample data comes from state-owned enterprises and half from non-state-owned enterprises.

5.2. Correlation Analysis

This paper analyzes the correlation between the main variables, and the results show that there is a significant negative correlation between ESG rating and enterprise value. To some extent, it supports and verifies the analysis and assumptions of this paper, and provides basic information for the following empirical test.

5.3. Multiple Regression Results

5.3.1. Regression Result Analysis

Group A in Table 2 shows the basic regression results of ESG rating on enterprise value. Among them, column (1) only controls the year and industry fixed effects, and column (2) adds relevant control variables as the hypothetical regression result, which is also the main regression of this paper. Under the assumption that there is a significant correlation between the external factors and ESG, which is consistent with the results of the regression analysis of the external factors.

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This shows that when the necessary cost of ESG investment increases, it will affect the enterprise value, and the main assumptions of this paper are verified.

Table 2. Multiple regression

variable	Panel A:Basic nalysis		Panel B: Robustness Tests		
	TobinQ	TobinQ	BEV	TobinQ	BEV
	(1)	(2)	(1)	(2)	(3)
ESG	-0.317***	-0.168**	-0.158**		
	(-4.72)	(-3.15)	(-2.98)		
ESG-Rating				-0.316**	-0.296**
				(-2.94)	(-2.76)
LEV	uncontrolled	-4.156***	-5.223***	-4.174***	-5.240***
		(-8.86)	(-11.19)	(-8.83)	(-11.16)
ROE	uncontrolled	2.919***	2.958***	2.884***	2.925***
		(3.45)	(3.46)	(3.14)	(3.43)
GROWTH	uncontrolled	0.464***	0.463***	0.467***	0.466***
		(7.15)	(7.23)	(7.26)	(7.33)
CF	uncontrolled	5.514***	5.583***	5.551***	5.618***
		(4.89)	(4.95)	(4.92)	(4.98)
constant term (math.)	5.786***	5.527***	5.422***	4.766***	4.707***
	(15.54)	(11.76)	(11.66)	(11.38)	(11.35)
Year fixed effects	controlled	controlled	controlled	controlled	controlled
Industry fixed effects	controlled	controlled	controlled	controlled	controlled
N	1410	1410	1410	1410	1410
R^2	0.1105	0.3315	0.3781	0.392	0.3761

Note: Values in parentheses are T-statistics; ***, ** and * represent significant at the 1%, 5% and 10% levels, respectively

Source: Compiled from this article

5.3.2. Robustness Test

In order to study whether the impact of ESG risk rating on enterprise value is affected by variable measurement, this paper makes the following robustness test. Firstly, the market value divided by total assets (Bev) is used to measure the enterprise value, tobinq is replaced by variables, and the original model is used for regression. The substitution results are shown in column (1) of the second scheme in the panel of Table 3. The ESG coefficient in the regression results is still significantly negative, indicating that the significant negative correlation between ESG rating and enterprise value remains unchanged. Secondly, the explanatory variable ESG rating is replaced by a new scoring method. Quantifying the rating of B + and above of business channel financial green as 1, which indicates that the enterprise with good ESG performance; The rest is 0, indicating the enterprises with poor ESG performance. The replaced ESG rate is regressed with the original model and the explained variable replacement model. The results are shown in columns (2) and (3) of the second scheme in the panel of Table 3. The ESG coefficient in the regression result is still significantly negative, and the regression result is stable.

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5.4. Heterogeneity Analysis

Table 3. Multiple regression

variable	TobinQ			
	(1)	(2)	(3)	(4)
	Non state owned	state-owned	large-scale	small-scale
ESG	-0.24*	0.0266	0.0433	-0.275*
	(-1.85)	(0.48)	(1.60)	(-2.12)
Other control	controlled	controlled	controlled	controlled
Year fixed effects	controlled	controlled	controlled	controlled
Industry fixed effects	controlled	controlled	controlled	controlled
constant term	22.95***	11.70***	5.002***	51.59***
	(6.63)	(8.86)	(5.45)	(11.02)
N	504	906	705	705
R^2	0.3393	0.3087	0.3553	0.3294

Note: Values in parentheses are T-statistics; ***, ** and * represent significant at the 1%, 5% and 10% levels, respectively

Source: Compiled from this article

The previous research answered the question of "the impact of ESG risk rating on enterprise market value evaluation". The next research will focus on the impact of enterprises with different characteristics on their related relationships.

5.4.1. Nature of Property Rights

The property right nature of enterprises is an important factor affecting the ESG performance of enterprises. Enterprises with different property rights have great differences in the performance of corporate social responsibility. Therefore, it is inferred that the property right nature has an important impact on the relationship between it and the market value of enterprises. This paper divides the sample enterprises into state-owned enterprises and non-state-owned enterprises according to the nature of property rights, and further investigates the impact of ESG rating on enterprise value under different enterprise properties. The regression results are reflected in columns (1) and (2) of table 6. When the enterprise is a non-state-owned enterprise, the coefficient is negative, and the results support the hypothesis. First of all, because state-owned enterprises have the dual identity of state intervention and market participants, when their ESG rating is improved, the social impact scope is larger, which is easier to improve the enterprise reputation and enhance the enterprise value. Non state owned enterprises tend to pay more attention to economic interests in market activities. In order to improve ESG rating, it needs to spend more investment costs, resulting in the reduction of enterprise market value. Secondly, in the view of market investors, it is their duty for state-owned enterprises to bear and fulfill social responsibility. Therefore, they are relatively insensitive to improve their ESG performance, resulting in low market response.

5.4.2. Enterprise Scale

Due to the difference between capital strength and enterprise development strategic objectives, enterprises of different sizes also have great differences in ESG performance, which may have a great impact on the evaluation of enterprise market value. Therefore, according to the scale of listed enterprises, this paper divides the enterprises with a scale greater than or equal to the median 24.309 into large enterprises and others into small enterprises, and further investigates the impact of ESG rating of enterprises of different sizes on enterprise market value evaluation.

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The smaller the size of the enterprise (ESG) and the smaller the value of the enterprise (ESG), the more significant the performance of ESG in Table 4. The reason may be that small-scale enterprises need to invest more costs in environmental, social and corporate governance in order to achieve better ESG performance. At the same time, due to the small volume of enterprises, the enterprise value is reduced.

6. Conclusion

The impact of enterprise ESG rating performance on enterprise market value has strong theoretical and practical significance, which is worthy of further research and exploration. The main results of this paper are as follows: (1) there is a significant negative correlation between ESG rating of listed companies and enterprise value, which may be due to the increase of company cost caused by the investment in ESG rating construction, which leads to the reduction of enterprise profit space and the decline of value. (2) Further analysis and research shows that when the company is small and non-state-owned, there is a negative correlation between ESG rating and enterprise value, which provides new possibilities for enterprises with different sizes and different property rights to enhance enterprise value. This paper not only enriches the relevant research on the impact of ESG rating on enterprise value evaluation, contributes to a more comprehensive understanding and understanding of the multi-dimensional impact of enterprise ESG rating on social and economic development, and provides some help for capital market investors in investment and decision-making.

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