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The impact of ESG factors on A-shares

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Abstract:

As stakeholder demand for corporate social responsibility grows, environmental, social and corporate governance (ESG) has become an important non-economic dimension in measuring corporate value. This article explores in-depth the mechanism by which ESG factors influence the value of A-share companies based on Steckler's theory, resource dependency theory, stakeholder theory, and other related theories. By creating an empirical model and selecting data from A-share companies, using the Tobin Q-Value (TBQ) to measure the value of a company, and combining the ESG assessment system with regulatory variables such as asset size and debt repayment capacity, four research hypotheses were proposed and tested. Empirical results show that good ESG performance can have a positive impact on a company's value. There is a U-shaped relationship between environmental performance and company value. When environmental performance reaches a turning point, improving environmental performance can significantly increase the value of the enterprise; Positive social responsibility behavior correlates positively with the value of the company; Optimizing corporate governance can effectively improve the value of businesses. The replacement of the enterprise's valuation indicator with the return on equity (ROE) and the replacement of the environmental performance explanatory variable with the Huazheng rating confirmed the reliability of the above conclusions. The conclusion of the study provides important references for companies to formulate ESG strategies, deploy policy makers and make investor decisions, highlighting the key role of ESG factors in adding value to a company in the A-share market.

Keywords: ESG, Enterprise value, Social responsibility, corporate governance

1. Introduction

Due to the growing demands of different stakeholders on corporate social responsibility, building corporate value has no longer focused solely on financial performance but has begun to incorporate a wider

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range of non-economic factors, including in particular the three dimensions of environmental, social and governance (ESG). According to Stekler's theory, a company's long-term success depends on its financial, legal, ethical and voluntary responsibilities. This implies that companies not only need to maximize their financial benefits, but also actively take social responsibility based on compliance with the law and go beyond the normal on a voluntary basis to strive to maximize environmental and social value.

The resource dependency theory emphasizes that the survival and development of companies depend on the efficient acquisition and use of key resources, and companies with good ESG performance are more likely to receive financial capital, talent resources and market opportunities. Therefore, a good ESG performance of private companies can help create a positive public image, improve risk management, attract more investment and partners, and improve market competitiveness. Therefore, deepening the impact of ESG dimensions on Chinese private enterprises based on current research is of great importance for guiding companies to develop corresponding strategies, enabling policy makers to adopt favorable policies, and enabling investors to make the right decisions [1].

2. Theoretical mechanism and research hypotheses

2.1 ESG Performance and Corporate Value

By referring to its stakeholder theory, due to the nature of the enterprise as a "social ecological economic person", it is naturally in a central "structural gap" in the social relationships that form with internal and external stakeholders such as creditors, suppliers, consumers, governments and the natural environment. This means that the value of the company itself must be realized based on the profitability and satisfaction of stakeholder expectations. Principal agent theory suggests that stakeholder requirements must be met by a representative, i.e. the operator of the company. The importance of an agent's ESG performance in a company's operations and the degree of responsible behaviour associated with it have a major impact on the company's value. Firstly, corporate ESG-responsible behaviour contributes to improving the effectiveness of communication between the company and its stakeholders, forming a positive model of interaction and thus creating stable long-term relationships. In this process, increasing the manager's trust and the manager's sense of contract responsibility will help to reduce agency and communication costs, effectively convey good ESG performance to stakeholders, so as to form a virtuous circle avoiding excessive short-sightedness and actively seeking long-term value, and promote enterprise value creation [2].

In recent years, there has been extensive research on the relationship between corporate ESG performance and corporate value, both domestically and internationally, which is mainly divided into three aspects: insignificant, negatively correlated and positively correlated. However, with the continuous development of the economy, many researchers believe that there is a positive correlation between the ESG performance of companies and the value of the company. From a stakeholder perspective, companies seek greater economic benefits while pursuing environmental protection, social responsibility and internal governance, not just for the sake of corporate reputation. From the Agency's point of view, the relationship between the company and its various stakeholders is the relationship of the main agent with asymmetry of data. Disclosing the company's ESG data helps investors to comprehensively understand the operating conditions of the company, which in turn encourages the company to take social responsibility and attract high-quality foreign investment to increase its value. Based on the above analysis, this article presents your first research hypothesis:

H1: Good ESG performance can have a positive impact on corporate value.

2.2 Environmental Performance and Corporate Value

In terms of the environmental performance of enterprises, the main focus is on the potential impacts that enterprises may have on the natural environment in their daily production and operating processes, and whether the enterprise has assumed corresponding protection responsibilities in the face of these impacts. In recent years, China has, together with other countries, deeply recognized the serious situation of ecological environmental protection and designed and implemented a series of policies and measures related to ecological protection. National regulatory policies also require companies to always pay attention to environmental issues and integrate sustainable development concepts into business requirements. The financial markets are well aware of the enormous potential benefits of green consumption, so different companies in different sectors are actively launching "green environment" related products and changing production processes. The good environmental protection of enterprises can have a positive contributory effect on the value of the enterprise as follows: First, from the perspective of stakeholder theory, by fulfilling environmental responsibility, enterprises can increase the external attention to the enterprise, which contributes to improving the positive image of the enterprise's active and responsible behavior and has a good-bye effect on the voice of the enterprise. In addition, from the perspective of internal management, good corporate environmental behavior drives internal employ-

ees, improves work efficiency, regulates work behavior, and maintains long-term development and enhances enterprise value.

Secondly, by investing in environmental protection, companies have improved and replaced their production processes and energy consumption targets, achieving resource savings. This can help improve product processes to some extent and reduce material costs. Waste reuse can also increase additional profits, reduce the cost of pollution for businesses and increase operating profits. As an example of Baosteel, the Baosteel Group is an important base for the steel industry and the largest rare earth production and research center in China [3]. It is also the largest industrial enterprise in the Inner Mongolia Autonomous Region. In recent years, Baosteel has always adhered to green and clean production, introducing a variety of cleaning processes, including "weak magnetic strong magnetic reverse flotation", "gas dry dust removal process" and "TISCO DDS method". Thanks to the implementation of green design practices, the Group's electricity consumption and new water consumption per tonne of steel have been reduced by approximately 4 per cent and 19 per cent respectively, and smoke, dust and sulfur dioxide emissions have been reduced by approximately 14 per cent and 74 per cent respectively. Annual coal consumption has been saved 700,000 tons, and annual costs have been reduced by about 1.3 billion yuan. The direct economic benefits of the gas conversion project exceed 8 million yuan per year. It can be seen from this that, without the high costs caused by the transformation of production processes and the introduction of self-developed equipment, the implementation of green policies and transformation methods related to the purpose of green production can bring significant economic benefits to enterprises, further facilitate the maintenance of long-term operations and promote enterprise value.

Third, according to the theory of competition strategy, improving the environmental protection of enterprises can win the favor of green consumers. At present, the country is vigorously promoting "green consumption", and consumers are gradually increasing their sensitivity to "green products" under the guidance of the government and the market. Companies are actively fulfilling their green environmental responsibilities, helping to build trust with consumers and helping to form their own competitive advantages. At the same time, it can also help businesses meet national environmental contribution fees and tax rebates requirements and further reduce operating costs. Such potential benefits are long-term and sustainable, and good environmental protection can give companies a competitive advantage and have a long-term impact on their value. Based on the above analysis, this article presents hypothesis 2. In summary, this study presents hypothesis 2.

H2: Improving environmental performance can significantly enhance corporate value.

2.3 Social Responsibility and Corporate Value

According to Starkman and Freeman's stakeholder theory, companies are not only responsible to their shareholders but also to the groups that influence their business decisions, including employees, customers, suppliers, communities and the environment. This theory suggests that companies can create long-term mutually beneficial relationships with a wide variety of stakeholders by meeting their needs and thus contributing to the growth of company value. The CSR pyramid model divides CSR into four levels: economic, legal, ethical and voluntary (charitable). This model also suggests that while businesses create economic value, they should also comply with legal regulations, engage in ethical behaviour and participate in voluntary activities such as community building. From the investor's point of view, companies with good social responsibility are often considered to be low-risk investments because they perform better in social relationships and operational stability. Therefore, this study presents hypothesis 3 as follows [4].

H3: Positive social responsibility behavior is positively correlated with corporate value.

2.4 Corporate Governance and Enterprise Value

The corporate governance structure plays a crucial role in formulating corporate strategy and improving operational efficiency. According to agency theory, there is a problem of information asymmetry between owners and managers, and a good governance mechanism is key to ensuring that management behavior is consistent with the interests of shareholders. Optimizing the management structure can reduce a company's agency costs, improve operational transparency and efficiency, and ultimately improve the overall value of the company. The resource dependency theory suggests that high governance standards can improve a company's ability to use key resources, including capital, talent, and knowledge. A strong governance framework can improve investor confidence, reduce capital costs and improve the quality of corporate decision-making. Based on the above discussion, this article presents hypothesis 4 as follows.

H4: Optimizing corporate governance can effectively enhance enterprise value.

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3. Empirical model, variable selection, and data explanation

3.1 Benchmark Model

$$TBQ_{i,t} = \alpha_i + \beta \times Independent_{i,t} + \gamma \times X_{i,t-1} + Year + Industry + \varepsilon_{i,t} \quad (1)$$

$TBQ_{i,t}$ As a dependent variable, an unobservable random variable α_i Representing individual heterogeneity, Independent is the independent variable; $X_{i,t-1}$ Refers to a series of control variables mentioned earlier; $\varepsilon_{i,t}$ For disturbance terms that change with individuals and time, β、γ The coefficient of the variable. In addition, dummy variables Year and Imindustry were added to control for the impact of year and industry factors on the results.

3.2 Variable selection

This article uses the TBO value to measure the value of a company and the ESG assessment system to measure the ESG performance of a company. In addition, SIZE, LEV, growth potential, BALANCE, DIR and CF were selected as control variables.

4. Empirical analysis

4.1 Research on the Role of ESG Performance in Corporate Value

The regression results of the impact of corporate ESG performance on corporate value are shown in Table 1.

Table 1 Regression Results of the Impact of Corporate ESG Performance on Corporate Value

variable	(1) TBQ	(2) TBQ	(3) TBQ	(4) TBQ
ESG	0.073*** (4.07)	—	—	—
ENS	—	-0.041** (-2.18)	—	—
ENS²	—	0.007*** (2.61)	—	—
SOS	—	—	0.016* (1.80)	—
GOS	—	—	—	0.049*** (3.01)
Constant	7.656*** (15.80)	7.840*** (15.65)	7.831*** (16.27)	7.685*** (15.67)
N	11073	11073	11073	11073
Adj.R²	0.178	0.177	0.177	0.177

Note: * * *, * *, * represent significant values at the 1%, 5%, and 10% levels, respectively, with t-values in parentheses (the same below).

According to Table 1, ESG has a significant positive correlation with TBQ at the level of 1%, indicating a significant positive impact of a company's ESG performance on the company's value.

From columns 3 and 4 of Table 1, it can be seen that the regression coefficients of social responsibility performance (SOS) and management performance (GOS) have a significant positive effect on the value of an enterprise. Therefore, H1, H3 and H4 are valid. To test the "U-shaped" relationship between environmental performance and enterprise value, regression results were analyzed using a method proposed by Lind and Melem to test the "U-shaped" curve for the relationship. The results are shown in column (2) of Table 1. For the U-shaped ratio, the following three conditions must be met: firstly, the first-degree coefficient of the enterprise's environmental performance (ENS) is negative and the second-degree coefficient is significantly positive; Secondly, the image of the curve at both ends should be significantly sharp; Third, the turning point of the U-shaped curve should be in the range of ENS values. In terms 1, the ENS coefficient is significantly negative, significant at the 5% level. ENS^2

The regression coefficient is positive and significant at the 1% level. In the second condition, the slope of the curve is negative (TBQ'=-0.042) when the ENS reaches its minimum value of 0, and positive (TBQ'=0.076) when the ENS reaches its maximum value that meets the second condition. In the third condition, the value of the symmetry axis of the U-curve is within the ENS range of environmental performance values. The turning point of the curve is the ENS value when the slope of the curve TBQ' is 0. With TBQ' equal to 0, it can be calculated that ENS is 3, which satisfies the third condition in the range of values. Therefore, the relationship between the environmental performance of the enterprise and the value of the enterprise follows the "U-shaped" curve, and H2 is established [5].

4.2 Robustness test

This article uses another measure of a company's value - return on equity (ROE) - to conduct additional testing. The results of the support test are shown in columns 1 to 3 of Table 2.

Table 2 Results of robustness test

variable	(1) ROE	(2) ROE	(3) ROE	(4) ROE
ESG	0.789** (2.36)	—	—	—
SOS	—	0.120* (0.76)	—	—
GOS	—	—	0.739*** (3.11)	—
SENS	—	—	—	-0.091** (-2.54)
$SENS^2$	—	—	—	0.010* (1.75)
Constant	-78.854*** (-13.48)	-77.078*** (-14.13)	-79.120*** (-14.11)	7.520*** (15.04)
N	11141	11141	11141	10157
Adj.R^2	0.149	0.149	0.150	0.172

According to the regression test results of the relationship between the ESG performance of companies and the return on capital (ROE), in the bi-directional fixed impact model, the ESG regression coefficient is 0.789 and the t-value is 2.36, which is significant at the 5% level. This conclusion is consistent with the previous text and proves its credibility. The regression coefficients of corporate value for social responsibility performance and corporate governance performance are 0.120 and 0.739, which are significant at the 10% and 1% levels.

In addition, this article replaces the explanatory variable Environmental Performance (ENS) for the Huazheng Rating Related Environmental Performance Score (SENS) sustainability test. Adjust the values from 1-9 CCC to AAA, and the regression coefficient between the Huazheng E rating and the square state of TBQ (SENS2) is 0.010, which is significantly positive at the 10% level. The regression coefficient between SENS and TBQ is -0.091, which is significant at the 5% level. When Huazhong Securities E-Rating takes the minimum value, the TBQ is -0.071. When Huazheng E rating reaches its peak, TBQ is 0.089. When the cost of the curve TBQ' is 0, the value of Huazheng E rating is 4.55, which is in the range of values. All three conditions are met and the endurance test has been passed.

5. Conclusion and Implications

Against the backdrop of growing corporate social responsibility requirements from stakeholders, the impact of environmental, social and corporate governance (ESG) as a significant non-economic dimension on corporate value is gaining increasing attention. This article is based on Steckler's theory, resource dependency theory, stakeholder theory, and agency theory. Theoretical analysis is used to present research hypotheses and empirical research is carried out using data from A-share companies to examine the impact of ESG factors on the value of A-share companies [6].

The study built an empirical model using the Tobin Q-value (TBQ) as a measure of company value, the ESG assessment system as a key explanatory variable, and con-

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trol variables such as asset size and debt repayment capacity. The regression results analysis and the sustainability test draw the following key conclusions: firstly, good ESG performance can have a significant positive impact on the value of the company, due to improved ESG performance in the relationship between the company and its stakeholders, reduced agency costs and attractive investment; Secondly, there is a U-shaped relationship between environmental performance and company value. When environmental performance reaches a turning point (ENS value 3), improving environmental performance can significantly increase the value of a business. This suggests that companies may face cost pressures in the early stages of environmental management, but in the long-term green production, environmental investments, etc. This can lead to cost savings and improve competitiveness. Third, positive social responsibility behavior correlates positively with the value of the company. Fulfilling social responsibility helps companies build good social relationships, reduce business risks and increase investor confidence. Optimizing corporate governance can effectively improve enterprise value, and a sound governance mechanism can reduce agency costs, improve operational efficiency and decision-making quality, and enhance investor confidence [7].

The replacement of the enterprise's valuation indicator with the return on equity (ROE) and the replacement of the environmental performance explanatory variable with the Huazheng rating confirmed the reliability of the above conclusions and further demonstrated the stability of the research results.

The research has important practical implications: companies should pay attention to ESG governance, actively improve environmental protection, fulfill social responsibility, optimize corporate governance and integrate ESG strategies into long-term development plans to achieve sustainable growth of company value; For policy-makers, appropriate policies should be put in place to guide and support companies in strengthening ESG construction, improving ESG disclosure systems and creating a favourable policy environment for ESG practices by companies. For investors, the ESG performance of companies can be used as an important investment indicator to identify high-quality companies with long-term growth potential and reduce investment risks. In the future, the study may expand the scope of the sample or conduct an in-depth analysis of the differences in the effects of ESG factors across different sectors and different sizes of companies, providing targeted references for market operators.

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