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Analysis of the Chinese Literature on the ESG and Financial Performance

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Abstract: Based on 230 Chinese articles published on the CNKI platform from 2016 to 2024 on the research of ESG and corporate financial performance, this paper clarifies the research direction of ESG and financial performance and discusses the main points of the research with the help of CiteSpace, an information visualization software. The studies on the relationship between ESG and financial performance are all based on listed companies. The empirical analysis of listed companies shows that ESG performance has a significant positive impact on the financial performance of listed companies. The impact of ESG on financial performance varies in different industries, regions, and stages of economic development. The short-term and long-term effects are also different. In addition, media attention on ESG performance also affects financial performance. However, existing studies are analyzed from a micro perspective and lack macro background analysis and policy impact analysis.

Keywords: ESG, financial performance, CiteSpace

1. Introduction

ESG stands for environmental, social, and governance and refers to a set of standards used to measure a firm's environmental and social impact. It's typically used in the context of investing. With the increasing global emphasis on sustainable development, Chinese companies gradually recognize the importance of ESG performance to their financial performance and corporate value. First, good ESG performance can win the trust of consumers, investors, and other stakeholders, and enhance the company's social image and reputation; second, good ESG performance can help attract more investors and ensure long-term financial support; third, focusing on ESG improvements often requires companies to innovate, and these innovations can bring new development opportunities and improve their competitiveness. Besides, ESG is also highly aligned with China's "carbon peak and carbon neutrality" goals and has become an important reference frame for measuring sustainable and high-quality corporate development.

The ESG performance measures a company against a set of ESG criteria to facilitate investment decisions, an ESG score is an objective measurement or evaluation of a given company's ESG performance. Financial performance is a broad term that describes a company's overall fiscal health, financial statements used in evaluating overall financial performance include the balance sheet, the income statement, and the statement of cash flows. This paper uses CNKI and CiteSpace software to analyze the research literature in the field of ESG and financial performance, and comprehensively

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assess the relationship between ESG and the financial performance of Chinese companies, using literature resources and data. This paper aims to provide Chinese companies, investors, government regulators, and academics with an in-depth understanding of the relationship between ESG and financial performance, and to provide theoretical references for promoting the sustainable development of Chinese companies and ESG practices.

2. Statistical analysis of research literature

2.1. Data sources

The Chinese journal data in this paper are derived from the CNKI academic journal database. The search conditions are the keywords 'ESG' and 'financial performance'. The journal source categories are selected from Peking University Core and CSSCI. The journal time is limited to January 1, 2016, to February 29, 2024. A total of 230 related Chinese literature were retrieved, and all the papers were valid.

2.2. Number and Trend of Literature Published

According to the visualization analysis of CNKI, the research on the relationship between ESG and financial performance has increased significantly after 2021. An important reason for the increase in research reports on this topic is the rapid development and expansion of ESG investment in China, influenced by the concept of sustainable investment in Europe and the United States. According to UNPRI (United Nations Principles for Responsible Investment), since 2012, when Chinese financial institutions began to participate in UNPRI, the number of sign-ups was only 2, and the number of sign-ups was still in the single digits until 2017. From 2018 to 2021, the number of sign-ups surged, and the number of sign-ups reached 33 in 2021. By September 2022, 112 organizations in the Chinese market have signed UNPRI [1]. In other words, ESG investing developed rapidly after 2021. This has led to increased investor demand for related research. The Chinese literature published in 2022 is 1.5 times as much as that in 2021 and continues to increase in 2022. A total of 12 Chinese literature were published from January to February 2024, and CNKI expects a total of 60 articles on this topic to be published this year.

Figure 1: Number of Publications in Chinese

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3. Research topic and content review

3.1. Keyword co-occurrence

Keywords are the high generalization of the research content of the article. The connection of keywords reflects the theme of the article. The keyword co-occurrence map generated by CiteSpace software can reflect the research subject in this research field. It can be noticed that all the keywords are concentrated in the 2022-2023 reports, which is because, as mentioned above, ESG research will not increase significantly until after 2021. Excluding weakly related words such as ' party building ', ' ethical culture ', ' fiduciary duty ', etc., excluding search keywords, valuable high-frequency keywords are selected according to the LLR algorithm. The top five keywords are ' financing constraints ', ' green innovation ', ' enterprise value ', ' listed company ', and ' environment '. Among them, ' financing constraints ' is the word with the highest centrality and frequency.

These keywords suggest that financial constraints are a major obstacle to improving ESG performance, especially for listed firms that are required to disclose information regularly. Among the three components of ESG, environmental factors (keywords "green innovation" and "environment") are the main aspects to be considered.

3.2. Keyword clustering

Based on keyword co-occurrence, cluster analysis of keywords is carried out, and some keywords with similar concepts are combined to form a concept-independent cluster, which is conducive to the combing of the research subject framework. The clustering Q value is 0.6705 and the S value is 0.7717. The results show that the clustering structure is reasonable and effective. A total of 6 groups of clustering labels are obtained. In the mapping, each cluster name represents a relevant research aspect of ESG and financial performance, and the ordinal number of each cluster represents the number of studies in that aspect.

From the summary table of keyword clusters, we can see that 1) research on ESG and financial performance is based on listed companies as the object of research, as shown in cluster #5; 2) information disclosure is important in the study of ESG and financial performance, and high ESG ratings are associated with their performance in the capital market, as shown in cluster #0; 3) Surprisingly, as shown in cluster #4, media attention is also a separate cluster, suggesting that media scrutiny, as well as analysts' attention to ESG performance, is also related to firm performance; 4) Research on financial performance and firm value mainly focuses on financial constraints, environmental investments, dual-carbon goals, and innovation capabilities, as shown in clusters #2, #3; 5) Corporate governance, as part of ESG, is also highly related the corporate financial performance, the research mainly focuses on internal controls and corporate reputation, as shown in clusters #1. There is little research on the social component of ESG.

Table 1: Keyword clustering summary table of the Chinese literature

	Citing articles keywords by LLR
#0. Disclosure	Disclosure(17.4, 1.0E-4); Rating (8.55, 0.005); Credit spreads (8.55, 0.005); Environmental performance (4.24, 0.05); Capital markets(4.24, 0.05)
#1. Corporate governance	Corporate governance (9.77, 0.005); Corporate reputation (6.47, 0.05); Internet controls (6.47, 0.05); Green innovation (5.7, 0.05)
#2. Corporate value	Corporate value (20.65, 1.0E-4); Media monitoring (4.99, 0.05); Dual carbon goals (4.99, 0.05); ESG practices (4.99, 0.05); ESG disclosure (4.99, 0.05)
#3. Financial performance	Financial performance (19.83, 1.0E-4); Environmental investments (6.2, 0.05); ESG practices (4.99, 0.05); ESG disclosure (4.99, 0.05); Commercial banks (6.2,

Table 1: (continued).

	0.05); Green transition (6.2, 0.05); Nature of property rights (3.08, 0.1) Enterprise performance (16.16, 1.0E-4); Financial constraints (9.06, 0.005); Innovation capacity (3.95, 0.05); Enterprise efficiency (3.95, 0.05). "Dual Carbon Targets (3.95, 0.05)
#4. Media attention	Media attention (15.69, 1.0E-4); Agency costs (10.34, 0.005); Analyst attention (5.11, 0.05); Stakeholders (5.11, 0.05). M&A performance commitments (5.11, 0.05)
#5. Listed companies	Listed companies (10.59, 0.005); Compliance (10.59, 0.005); Conformal institutional pressures (5.23, 0.05); Dominant CEO (5.23, 0.05); Environmental social corporate governance (ESG) (5.23, 0.05)

Sources: CNKI, CiteSpace.

3.3. Content review

Based on the literature, the relationship between ESG and financial performance is summarized as follows:

Positive correlation: A paper conducted an empirical study on a sample of 3,685 listed companies in the Shanghai and Shenzhen Stock Exchange from 2008 to 2020, and the results show that corporate ESG performance has a positive relation with their financial performance [2].

Another paper shares the same view. This literature empirically analyzes the impact of ESG ratings on the financial performance of listed companies by taking China's A-share listed companies as the research sample from 2011 to 2021. It is found that corporate ESG performance has a significant positive contribution to the financial performance of listed companies. Meanwhile, there is significant heterogeneity in the impact of ESG performance on the financial performance of state-owned and non-state-owned enterprises, large and small and medium-sized enterprises, and manufacturing and non-manufacturing enterprises, with non-state-owned enterprises, small and medium-sized enterprises, and manufacturing enterprises having a stronger positive promotion effect [3].

The positive correlation of net effect: A paper examined the bilateral effect of ESG performance on financial performance and measured the compensation effect, offset effect, and net effect of ESG performance on financial performance based on the data of Shanghai and Shenzhen A-share listed companies from 2011 to 2022. The research shows that the net effect of ESG performance on corporate financial performance is positive in different years and regions [4].

The correlation between different industries, regions, and economic development levels is different: some researchers find that the relationship between ESG performance and financial performance varies across different industries, competitive strategies, and periods of ESG implementation. According to a research paper, there is a U-shaped relationship between industrial companies' ESG performance and financial performance. This relationship is more pronounced in companies that implement differentiated strategies [5]. An empirical analysis shows that the relationship between ESG performance and firm performance is affected by the degree of pollution, the nature of the firm, and the level of regional economic development and that ESG ratings of firms that are low-polluting, non-state-owned, and in eastern regions and non-provincial capitals are more likely to improve firm performance significantly[6].

The impact of ESG on financial performance is also different in the short and long term. There are different views on this issue. One view is that ESG is not yet able to increase corporate income growth in China because it is still in its infancy, hence, the cost of ESG is more noticeable than the positive effect in the short term [7]. Based on China's A-share non-financial listed companies' data from 2016-2019, another view is that ESG practices do not negatively affect the short-term

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financial performance of firms, and the overall and sub-dimension performance of ESG is not only positively correlated with the current financial performance of firms, but also promotes the financial performance of firms lagged by one period and lagged by two periods with different magnitudes [8].

ESG indirectly improves financial performance by reducing financing costs. An empirical study on the impact of ESG ratings on bond credit spreads finds that, first, good ESG performance can negatively affect corporate bond credit spreads and reduce corporate financing costs [9]. A similar study shows that ESG and its dimensions have a significant negative effect on corporate debt financing costs, and the effect of ESG performance on corporate debt financing cost reduction is mainly realized by enhancing corporate information transparency, reducing corporate business risks, and alleviating the degree of corporate financing constraints [10]. Another study finds that ESG responsibility fulfillment performance significantly reduces the financing cost and alleviates the financial burden of enterprises, which promotes the enhancement of the book value of enterprises [11].

Media attention to ESG performance also has an impact on financial performance. Media attention to ESG also plays an important role in mitigating the corporate cost of debt. For instance, Southern Weekly, the first nationally recognized media outlet to cover ESG topics, publishes annual lists of the 100 ‘‘best corporate social responsibility firms” according to ESG performance. According to the readability indicators of A-share listed companies from 2009 to 2020, ESG disclosure can significantly alleviate corporate financing constraints, media monitoring can further alleviate the relationship between ESG disclosure and corporate financing constraints [12]. Another research use 2011 as the starting point, select a sample of heavy polluters listed on the Shanghai and Shenzhen A-share exchanges, and through econometric analysis, find that there is a negative correlation between the ESG performance of Chinese heavy polluters and the cost of financing [13]. In other words, the better the ESG performance, the lower the financing cost, and the positive impact on the firm's financial performance.

4. Conclusion and outlook

In general, the empirical analysis of listed companies shows that ESG performance has a significant positive effect on the financial performance of listed companies. The impact of ESG on financial performance is also different in different industries, regions, and different stages of economic development. The short-term and long-term effects are also different. In addition, media attention to ESG performance also has a positive impact on financial performance.

Despite the large amount of literature on ESG and firms' financial performance, there is a lack of macro-contextual analysis and policy impact analysis. All reports are based on the assumption of macroeconomic stability. In fact, the macroeconomic situation is the main reason affecting the financial performance of firms, and in bad economic times, the financial performance of firms with good ESG performance may also deteriorate. China's policy support and guidance on sustainable development have had a significant impact on corporate ESG practices, but there are few relevant research papers. The Chinese government has implemented a series of policy measures, including environmental protection tax laws, renewable energy subsidy policies, and a carbon emissions trading market, which have facilitated companies to move towards greener, more socially responsible, and more standardized governance. These policies have guided companies, encouraging and promoting their active participation in ESG practices, which indirectly affects their financial performance.

Looking ahead, ESG performance in China may have a profound impact on corporate financial performance. First, standardized disclosure requirements will increase transparency and help attract more domestic and foreign investors, especially those who value sustainable development. Second, as companies gradually recognize the correlation between ESG performance and financial performance, they will be more proactive in adopting sustainable practices to improve their market

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competitiveness and attractiveness. Finally, as data quality and reporting standards improve, more financial products and investment strategies based on ESG performance are expected to emerge, further driving companies to improve their ESG performance.

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