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| RESEARCH ARTICLE

ESG Studies the Impact on Enterprise Investment and Financing Decisions

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| ABSTRACT

With the global concept of sustainable development gaining popularity, the three factors of environmental (E), social (S) and governance (G) are gradually increasing in the status of investment decisions. As an effective tool for evaluating the non-financial performance of a company, the ESG rating has been widely used in investment, risk management, corporate governance, and sustainable development. Investors, consumers, and regulators increasingly rely on ESG ratings to assess the sustainability of companies. Visualization techniques play a crucial role in showing ESG ratings and their differences more intuitively. With the help of visualization technology, investors can quickly grasp the ESG performance of companies, gain insight into the root causes of rating divergence, and make more informed investment decisions. At the same time, companies can use visualization technology to demonstrate their strengths and efforts in ESG and enhance public trust. Research shows that as data science and artificial intelligence technologies continue to advance, the visualization of ESG ratings will become more accurate, efficient, and personalized. This will help further promote the popularization and practice of the concept of sustainable development and contribute to the realization of global green development and corporate social responsibility.

| KEYWORDS

ESG rating divergence Investment and financing decision ESG Practice ESG investment.

| ARTICLE INFORMATION

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1. Introduction

ESG, short for Environmental, Social, and Corporate Governance, is a concrete projection of the concept of sustainable development in the financial market and at the micro enterprise level (Liu, 2024). The basic concept of ESG dates back to the 18th century in the United States and is known as "ethical investing." ESG ratings have been widely used in investment, risk management, corporate governance, and sustainable development. Investors, consumers, and regulators increasingly rely on ESG ratings to assess the sustainability of companies. However, due to the large differences among different rating agencies in underlying data sources, evaluation methods, and evaluation systems, there are significant differences in ESG rating results. This divergence brings great confusion to investors, consumers, and regulators, which is not conducive to the construction of ESG investment and financing systems and the sustainable development of enterprises. Then, what are the specific reasons for ESG rating divergence, and how should investors and enterprises deal with it? Based on this, can visual analytics be used to help resolve disagreements better? And if so, what does the future hold? The discussion on the above issues has important reference value for improving China's ESG rating system and promoting enterprises' investment and financing decisions and sustainable development.

Based on this, this paper focuses on the impact of ESG rating differences on enterprises and explores them from the perspective of investment and financing decisions. Compared with previous literature, the contributions of this paper are as follows: First, it expands the research Angle. The existing literature emphasizes the performance of ESG ratings more, but this paper studies the visualization of ESG ratings from the perspectives of risk management and investment return. Second, link ESG information disclosure with rating, make clear the complementary relationship between ESG information disclosure and rating information disclosure provides important data and information sources for rating, making rating results more accurate and comprehensive. At the same time, the rating results also provide a reference for investors to better understand the company's ESG performance and potential risks so as to make more informed investment decisions. Third, it enriches the research on the factors that influence investment and financing decisions. ESG rating disagreement is a "double-edged sword," and it is of great benefit to enterprises' investment and financing decisions and sustainable development to deal with it correctly and adopt appropriate measures.

2. Introduction of ESG rating agencies

With the rapid development of ESG in recent years, many companies around the world have incorporated ESG into their own sustainable development and, investment and financing decisions. According to the "ESG Information Disclosure Guidelines for smes" issued by the China Association of Small and Medium-sized Enterprises (officially implemented on March 1, 2024), group standards have been set for how smes should disclose information for a better rating, which is conducive to the development of ESG in China. In fact, according to the Global Sustainable Investment Review 2020 released by the Global Sustainable Investment Alliance (GSIA), as of the beginning of 2020, the total sustainable investment in the world's five largest markets has reached $35.3 trillion, and China's ESG investment scale accounts for only 2% of its total asset management, far below the level of developed markets (Wang & Zhang, 2022). Thus, the field of ESG rating has not changed in the development stage in China, and it is necessary to improve the rating standards and methodology further to improve the rating quality and credibility. In recent years, China has indeed accelerated the development of ESG construction. Up to now, China's main ESG rating agencies are China Securities, China Securities, Shangdao Ronglu, Social Value Investment Alliance, Harvest, Wind, Runling Global, and so on. At the same time, major international ESG rating agencies include MSCI ESG Research, Sustainalytics, Moody's ESG Solutions, ISS ESG, and CDP (Carbon Disclosure Project). Table 1, which is called "International ESG rating agency rating details and official website," lists the rating details and official websites of international ESG rating agencies. Table 2, which is called "Famous domestic ESG rating agencies and their official websites," lists famous domestic ESG rating agencies and their official websites, and Table 3, which is called "Major global ESG evaluation system," lists major global ESG evaluation systems.

Table 1 International ESG rating agency rating details and official website (From Financial headlines: Under the tide of ESG, where has China's ESG evaluation system come to?)

	MSCI	**SUSTAINALYTICS**	**REPRISK**	**REFINITIV**	**SPGLOBAL**	**CDP**
Grade estimation	·AAA-CCC class ·Industry adjustment	·0-100 risk score ·Industry/Global	·AAA-Dlevel ·Industry weighting	A+to D-grade percentage mark	Total score 0-100	Grade A-D
Key ESG indicators	·10 topics, industry specific 37 ESG issues ·Disclosure and performance data	·220 indicators &450 areas, 138 sub-areas Corporate risk management data	28 ESG topics in 59 hot topics Company exposure to risk/sentiment data	28 ESG topics in 59 hot topics 450+ESG indicators 186 comparable initiatives Performance category data	Over 80 key topics Industry weighting Performance class established by the company data	Climate change · Forest · Water security
Data point	1000+ data points	undisclosed	undisclosed	450+ data points, ratios, and analysis	1000+ data per company point	undisclosed
Data sources	Government and NGO reports, companies Reports, Media	Government and NGO reports, companies Enterprise report, regulatory declaration NGO reports, media	Publicly available data and industries data	Corporate, publicly reported data, Global media resources	Company documents supported online Survey questionnaire	Company documents supported online Survey questionnaire
Use	·Individual companies	For security screening and investment	Company ESG risk score	For portfolio monitoring,	Financial analysis into asset	Corporate reputation analysis, aligned

	MSCI	SUSTAINALYTICS	REPRISK	REFINITIV	SPGLOBAL	CDP
	and funds ESG points Sum report ·MSCI ESG Index	Portfolio building company ESG Risk score	Supervise portfolio management and quantity Analysis, post-inspection	Quantitative analysis, backtesting Corporate ESG risk assessment points	management products	with TCFD, identifies ESG risks and opportunities.
Insight	·Widely applicable · The world's largest ESG index party	· Risk Center ·ESG specific products	An outside-in strategy to evaluate the actual performance of the company	·Transparent and auditable data ·Various scoring methods	Industry-specific data collection	Industry-specific data such as climate change, forests and water
Website	msci.com	sustainalytics.com	reprisk.com	refinitiv.com	spglobal.com	cdp.net

Table 2 Famous domestic ESG rating agencies and their official websites

Rating agency	**Brief introduction**	**Official website address**
Business road melts green	A leading professional service institution for green finance and responsible investment in China, focusing on providing customers with responsible investment and ESG evaluation and information services, green bond evaluation and certification, green finance consulting and research, and other professional services	http://www.syntaogf.com/index_CN.asp
Social Investment alliance	The first new international public welfare platform in China focusing on promoting sustainable development finance	https://www.casvi.org/
Harvest Fund	One of the earliest ten fund management companies established in China, it is also the earliest public fund invested in ESG research and practice of ESG investment in China	https://www.jsfund.cn/
Zhongcai Big Green Gold Institute	The first open and international research institute in China with the goal of promoting the development of green finance	http://iigf.cufe.edu.cn/
Certificate of China	An independent third party professional service organization for all kinds of asset management institutions, specializing in index and index investment comprehensive services	http://www.chindices.com/
RKS	China's authoritative third-party corporate social responsibility rating agency is committed to providing objective and scientific corporate responsibility rating information for responsible investors, responsible consumers, and the public	http://www.rksratings.cn/
China Securities Investment Fund Association	Securities investment fund industry self-regulatory organization	https://www.amac.org.cn/

Table 3 Major global ESG evaluation system

Abroad	MSCI S&P Global Rating S&P Dow Jones Indices Moody's FTSE Russell	Sustainaly tics Thomson Reuters ISS ESG CDP
Home	Business road melts green Social Investment alliance (Incubate and advocate ESG investment)	Certificate of China (ESG index compilation and related data services) RKS (ESG assessment and consulting services)

	Harvest Fund Zhongcai Green Gold Institute (Green finance and ESG risk management)	China Securities Investment Fund Association

3. ESG Ratings Diverge

3.1 Reasons for Differences

3.1.1 Differences in Rating Standards and Methods

At its core, ESG ratings assess a company's environmental, social, and governance performance. However, different rating agencies or investors may adopt different evaluation criteria and methods. These criteria and methods may be based on different theoretical frameworks, values, or preferences, leading to differences in the evaluation results of the same enterprise. For example, some rating agencies may focus more on corporate performance in terms of environmental protection, while others may focus more on corporate performance in terms of social responsibility and governance. In addition, different rating agencies may also adopt different data collection and analysis methods, thus affecting the consistency of rating results.

3.1.2 Differences in Data Sources and Quality

ESG rating requires a large amount of data and information as support, which may come from self-disclosed reports, third-party data, and research reports (Yao & Yu, 2023). However, there may be differences in the quality and reliability of these data. On the one hand, the information independently disclosed by enterprises may be incomplete, inaccurate, or misleading. On the other hand, third-party data and research reports may also have differences in data collection and analysis methods, thus affecting the accuracy and reliability of the data. These differences may lead to different ESG rating results from different rating agencies or investors.

3.1.3 The Evaluator's Subjective Judgment

ESG ratings involve many subjective judgments and the personal preferences of evaluators. For example, different raters may assign different weights and scores to the same ESG issue. This subjectivity can lead to ESG rating divergence. In addition, the professional background, experience, and position of the evaluator may also affect the ESG rating results. For example, some evaluators may focus more on a firm's performance in environmental protection, while others may focus more on a firm's performance in social responsibility and governance.

3.1.4 Industry Differences and Regional Differences

Different industries face different environmental, social, and governance challenges, so companies in different industries will differ in their ESG ratings. In addition, different countries and regions also differ in terms of policies, culture, and social expectations, which may lead rating agencies or investors to give different assessment results on the ESG performance of the same enterprise in different regions.

3.1.5 Conflicts of Interest and Transparency Issues

ESG rating agencies or investors may have conflicts of interest with companies; for example, rating agencies may receive revenue or sponsorship from rated companies. This can lead to a potential impact on the rating results and, thus, disagreement. In addition, the issue of transparency in ESG ratings may also lead to disagreement, as the lack of transparency in the rating process and results may make it difficult for investors to understand and compare the assessment results of different rating agencies or investors. (II)The impact of ESG rating divergence on corporate investment and financing decisions. This issue can be discussed from different subjects.

The first is from the perspective of enterprises' investors. As one of the most important subjects of enterprise investment and financing decisions, ESG rating is an important reference for investors when evaluating enterprise value and risk. When different ESG rating agencies give inconsistent evaluations of the same enterprise, investors will face great troubles when making investment decisions. They need to spend more time and effort to analyze and understand the reasons for these rating differences and how these differences affect the long-term value and risk of the enterprise. Second, ESG rating disagreements may increase decision-making risk for investors. If an investor relies on the ESG rating of an institution to make investment decisions, and the rating of the institution is significantly different from that of other institutions, the investor's decision may be misled, thus increasing the investment risk. In addition, if investors do not have a deep understanding and application of ESG ratings, they may not be able to accurately judge the ESG performance of enterprises and then make wrong investment decisions.

Moreover, ESG rating disagreements can affect investor confidence and sentiment. When there is a large divergence among rating agencies, investors may have doubts about the enterprise's ESG performance and even worry about the overall operating conditions and future development prospects of the enterprise. Such fluctuations in sentiment and confidence may affect investors' willingness to invest and their decision-making behavior. Finally, ESG rating disagreements can also affect investors' portfolios and strategies. Investors may construct and adjust portfolios based on ESG ratings to achieve specific investment objectives and risk-return balance. However, when ESG ratings diverge, investors may need to reevaluate and adjust their portfolios and strategies to accommodate this uncertainty.

The second is from the perspective of financial institutions. ESG rating divergence increases the difficulty of risk assessment for financial institutions. When financial institutions provide financing services for enterprises, they need to conduct a comprehensive risk assessment of enterprises, including the assessment of ESG risks. However, when different ESG rating agencies give inconsistent evaluations on the ESG performance of the same enterprise, financial institutions need to spend more time and energy analyzing and comparing these rating results so as to more accurately evaluate the ESG risk of enterprises. This not only increases the workload of financial institutions but also may affect the accuracy and objectivity of their risk assessment of enterprises. Second, ESG rating disagreements may affect the credit decisions of financial institutions. When deciding whether to provide credit support to an enterprise, financial institutions will take into account factors such as the enterprise's financial status, operating ability, market prospect, and ESG performance. When ESG ratings are divergent, financial institutions may have doubts about the ESG performance of enterprises, which in turn affects the propensity and amount of their credit decisions. This may lead to some enterprises with good ESG performance but large rating divergence finding it difficult to obtain sufficient financing support, thus limiting their business development and market competitiveness. In addition, ESG rating disagreements can also affect the reputation and risk management ability of financial institutions. As an important institution of financing and risk management, financial institutions' ESG investment philosophy and risk management ability are of great significance in maintaining their reputation and attracting investors. When ESG ratings disagree, it may raise questions from the public and stakeholders about the risk management ability of financial institutions, which in turn affects their reputation and business development.

3.1.6 Measures to Resolve Differences in ESG Ratings

How to solve the impact of ESG rating disagreement on corporate investment and financing decisions can also be deeply studied from the perspective of investors and financial institutions.

(1) Investors' perspective

Firstly, to have an in-depth understanding of the ESG rating system, investors should take the initiative to understand the rating standards, methods, and processes of different ESG rating agencies so as to have a more comprehensive understanding of the nature and differences in ESG rating. By deeply studying the indicator system of ESG rating, investors can more accurately judge the ESG performance of enterprises and avoid being misled by single rating results.

Secondly, the ESG performance of enterprises should be evaluated from multiple perspectives. In the face of ESG rating disagreements, investors should not only rely on the views of a single rating agency but should combine multiple rating results, corporate ESG reports, social responsibility reports, and third-party data to evaluate the ESG performance of enterprises from multiple perspectives and comprehensively. This helps investors gain a more comprehensive understanding of the company's ESG practices and make more accurate investment decisions.

Thirdly, pay attention to the dynamic changes in ESG rating. ESG rating is not static but dynamically adjusted with the development of enterprises and changes in the environment. Investors should pay attention to the dynamic changes in ESG ratings and understand the ESG progress or problems of enterprises in a timely manner so as to adjust their investment strategies. At the same time, investors can also pay attention to the tracking evaluation and prediction of ESG performance by rating agencies to obtain more valuable information.

Fourth, improve their ESG investment capabilities. Investors should strengthen their study of ESG investment concepts and methods and improve their professional quality and investment ability in the field of ESG. By participating in ESG investment training, seminars, and other activities, investors can continuously broaden their horizons and enhance their understanding and grasp of ESG investment.

Finally, actively participate in ESG investment practices. Investors should actively participate in ESG investment practices, accumulate experience, and improve capabilities through actual investment operations. In the investment process, investors should pay attention to the ESG performance of enterprises and consider it an important basis for investment decisions. At the same time, investors can also exchange experiences with other ESG investors to jointly promote the development of ESG investment.

(2) The perspective of financial institutions

First of all, to strengthen communication and cooperation with ESG rating agencies, financial institutions should actively establish long-term and stable cooperative relations with ESG rating agencies and regularly exchange and share the concepts, methods, and standards of ESG rating. By deeply understanding the rating logic and key indicators of different rating agencies, financial institutions can more accurately grasp the core meaning of ESG rating and reduce decision-making errors caused by understanding bias.

Second, a comprehensive ESG evaluation system must be established. Financial institutions can establish a comprehensive ESG evaluation system based on their own business characteristics and risk preferences. The system should comprehensively consider the results of multiple ESG rating agencies and combine the internal risk control requirements and investment objectives of enterprises to form a more comprehensive and objective ESG assessment result. This helps financial institutions more accurately assess the ESG risk and value of enterprises in their investment and financing decisions.

Third, to improve ESG professional ability and talent training, financial institutions should strengthen research and investment in the ESG field and improve the ESG professional ability and quality of internal personnel. Organize training, seminars, and other ways to enable employees to better understand and apply ESG concepts and methods. At the same time, financial institutions can also actively introduce professionals with ESG backgrounds to enhance the professionalism and competitiveness of the team.

Fourth, pay attention to the ESG practices and development trends of enterprises. Financial institutions should also pay attention to the ESG practices and development trends of enterprises while paying attention to ESG ratings. By having an in-depth understanding of the ESG strategies, policies, and practices of enterprises, financial institutions can more accurately judge the ESG performance and development potential of enterprises. In addition, financial institutions should pay attention to the latest developments and policy changes in the ESG field so as to adjust investment strategies and risk management measures in a timely manner.

Finally, to strengthen information disclosure and transparency, financial institutions should actively promote enterprises to strengthen ESG information disclosure and transparency. By requiring enterprises to regularly issue ESG reports and participate in ESG ratings, financial institutions can obtain more and more accurate ESG information and provide stronger support for investment and financing decisions. At the same time, it will also help enhance the ESG awareness and responsibility of enterprises and promote enterprises and financial institutions to jointly achieve sustainable development goals.

4. ESG Invest

ESG is a specific presentation of Environmental (environment), Social (society), and Governance (governance), mainly including “ESG practice” and “ESG investment.” ESG practices incorporate the ESG concept into the specific matters of operation management; ESG investment focuses on financial performance and ESG governance in investment decisions.

In 2004, the United Nations Environment Programme first proposed the concept of ESG investment, advocating for environmental, social, and governance issues in investment. In 2006, the United Nations issued the Principles for Responsible Investment (UN PRI), which aims to help understand the impact of ESG on investment and support the signatories to integrate ESG into the investment decision process, which has played a vital role in the development of ESG. In the same year, Goldman Sachs Group integrated the concept of ESG and published research reports related to ESG. With the continuous deepening of ESG by international organizations, investment institutions, and other multiple market players, the concept and products of ESG are constantly being enriched and improved. According to PRI's website, by the end of 2021, UN PRI had 3,826 contracted agencies, with total assets under management of $121.3 trillion. The data show that ESG investment will become an important trend of future investment attention.

In recent years, ESG (environment, society, and governance) has become an indispensable consideration for investment decisions. In 2023, China's overall ESG investment scale continued the trend of rapid growth, and the total scale increased by 34.4% compared with 2022, hitting a record high. In this context, through the study of ESG investment policies and data and through the literature analysis, this paper analyzes the new characteristics of ESG investment, the problems it faces, and future development trends, providing a reference for enterprise investment and financing decisions.

4.1 Four Characteristics

Due to the influence of some macro adverse factors, some regions have shown signs of sustainable investment capital outflow and slowing issuance of new products in recent years, but the market supporting the “base” of ESG investment has not wavered. In general, the ESG investment in 2023 mainly presents the following characteristics:

First, the transparency and standardization of ESG investment are significantly improved. For example, the United States, Europe, Hong Kong, and China have introduced stricter regulations on ESG disclosure.

The EU Corporate Sustainable Development Reporting Directive (CSRD) requires that, from 5 January 2023, EU companies (including eligible EU subsidiaries of non-EU companies) are required to report the environmental and social impact of their business activities and the impact of their environmental, social and governance (ESG) work and initiatives on their business. CRSD goal is to provide transparency to help investors, analysts, consumers, and other stakeholders better assess the sustainability performance of EU companies and associated business impacts and risks. Since then, the number of companies reporting sustainability issues has increased from 11,000 to nearly 50,000. All CRSD disclosures must be disclosed, and the CSRD requires a third-party audit of all disclosures to ensure their accuracy and completeness.

The CSRD was introduced to improve the disclosure process and provide investors and consumers with more concise and consistent ways to understand and compare the impact of organizational activities on the environment, society, and governance (ESG) and to make more informed decisions based on sustainability data.

On March 6, 2024, the CSRC passed new rules requiring for the first time to strengthen and regulate the climate-related disclosure of listed companies, including significant climate-related risks that may affect the company's business strategy, financial position, and operating performance, as well as in some cases their greenhouse gas emissions.
After the SEC climate disclosure rules are implemented, almost all American companies and companies listed in the US will be subject to supervision requirements. As the world's largest capital market, the release of the new SEC rules will have an important impact on organizations, investors, and listed companies around the world.

On April 14, 2023, HKEx published a consultation document entitled "Climate-related Information Disclosure under the Optimizing the Environment, Society and Governance Framework," suggesting that all issuers disclose climate-related information in their ESG reports as of January 1, 2024. In April 2024, hKEx issued a Summary of the Consultation on the Climate Disclosure Market under the Environment, Society, and Governance (ESG) Framework. The revised Listing Rules will take effect as of January 1, 2025, adding Part D to the ESG Code in Appendix C2 to disclose climate information.

The Chinese government is also steadily promoting the disclosure of ESG reports by listed companies. In July 2023, the General Office of the State-owned Assets Supervision and Administration Commission of the State Council forwarded the research results of the Preparation of ESG Special Report for Listed Companies of Central Enterprises in the form of notice, providing technical guidance for the preparation of reports by central enterprises and central enterprises. To further implement the central financial work conference spirit and the State Council on strengthening supervision risks to promote the development of capital market quality, several opinions, the implementation of the CSRC the opinions on strengthening the supervision of listed companies (try out) "and other policy document requirements, promote the development of listed companies quality and investment value, standardize the sustainable development of listed companies related information disclosure, on April 12, Shenzhen north three officially issued the sustainable development of listed companies report guidelines (hereinafter referred to as" the "guidelines"), and since May 1, 2024.

The introduction and implementation of these regulations and standards will enhance the transparency and standardization of ESG investment, improve investors' confidence and recognition of ESG investment, and promote sustainable development.

Second, the number of institutions that recognize the ESG concept has hit a record high. By the end of 2023, more than 5,370 institutions had signed PRI, with total assets under management of more than $121 trillion. In recent years, ESG investment has developed rapidly in China. According to Wind statistics, as of June 30, 2023, there were 464 ESG public funds in the whole market, and the total scale of fund management reached 576.584 billion yuan (excluding unestablished and expired). The number of Chinese mainland institutions joining UN PRI has reached 140,21 more than in 2022, all hitting a record high.

Third, the ESG investment scale maintains a rapid growth trend. In 2023, the ESG field is still constantly hot and hot. In terms of investment, according to the data of Shangdaoronglu, by the end of the third quarter of 2023, China's ESG investment scale reached 33.06 trillion yuan, a record high, an increase of 34.4% compared with 2022, with a compound growth rate of 34.02% in the past three years. Among them, green credit accounts for the vast majority, 86.5%; ESG securities investment, and the ESG equity investment scale is still low (See Figure 1, which is called the "Domestic ESG Investment Scale").

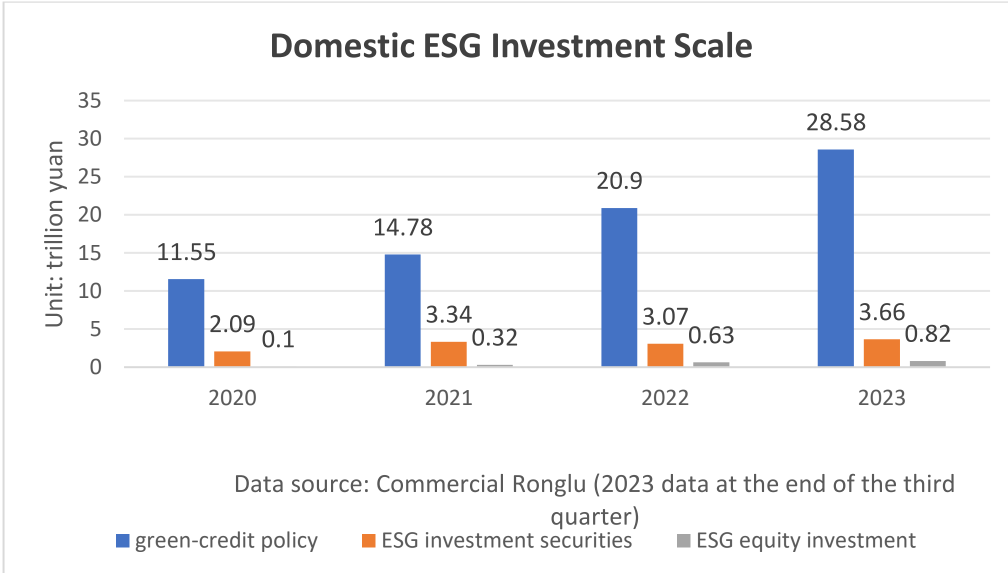

Figure 1 Domestic ESG Investment Scale

Fourth, ESG-related financial products are becoming more and more abundant, and the number continues to grow. According to Wind data, by the end of 2022, there were 642 ESG products on the market (similar funds A and C were not combined), with assets under management of 562.344 billion. Among the five types of funds, environmental protection theme funds have the most mature development, with 295 existing products and a fund scale of more than 288.014 billion yuan, accounting for 45.95% of the number and 51.22% of the scale. ESG strategy fund followed closely, with 178 existing products with a scale of more than 148.595 billion yuan, accounting for nearly 27.73% and the scale accounting for more than 26.42% (See Table 4, which is called "Overall situation of ESG themed fund issuance").

Table 4: Overall situation of ESG themed fund issuance

theme	Issue number	Fund size (RMB 100 million yuan)
The ESG Strategy Fund	178	1485.95
pure ESG	72	417. 37
Public word governance	23	412. 85
environmental protection	295	2880. 14
social responsibility	74	427. 13
amount to	642	5623. 44
Source: Wind (as of the end of 2022), Guosen Securities Economic Research Institute		

As the investment concept is gradually widely recognized and accepted, ESG-related financial products are gradually enriched, covering bonds, public funds, private funds, bank wealth management, and ESG-related indexes. According to Wind data, from 2019 to 2023, the number of pure ESG funds in China increased from 16 to 135; the number of pure ESG themed bank financial products issued by banks and finance subsidiaries increased from 9 to 357; the ESG stock index also increased from 66 to 370, all achieving rapid growth.

4.2 Three Major Results

ESG investment has reshaped corporate development, promoting macroeconomic growth by improving environmental, social, and governance sustainability while also reducing investment risks, as follows:

First, we need to promote economic growth.

TGM-ESGI: The country ranking shows the scoring results of 44 countries. Denmark and Switzerland scored the highest (9.2), while Venezuela scored the lowest (2.2). No country gets full marks; countries that do well on corporate governance and environmental indicators do not necessarily achieve high scores in some other social subcategories (i. e., labour, and demographics).

As expected, the results showed higher ESG scores in developed markets and developed countries; out of 10, the average score in developed markets was 8.2, compared with 4.9 in emerging markets. Similarly, we found that ESG was highly consistent with per capita GDP levels. These two indicators appear to be exponential; as scores rise, stronger ESG performance increases the return on income.

Environmental, social, and social governance scores across countries (TGM-ESGI). With a full score of 10, the average score was 8.2 in developed markets and 4.9 in emerging markets.

It should be noted that, especially when per capita GDP reaches a high level, the relationship with ESG scores becomes mutually reinforcing rather than a simple one-way causality. As mentioned above, a strong governance system, social cohesion, and sustainable environmental policies support economic growth and increase income levels. At the same time, as the country gets richer, it can invest more in state-of-the-art infrastructure (IGF) (OBOR), prioritize environmental sustainability, and grow a well-educated middle class that needs better social and political systems.

Oxford University of the results of a country's enterprise ESG performance and the country's per capita GDP, environmental, social, and governance factors score each rise 1 unit, will promote per capita GDP rose 0.06%, 0.1% and 0.19% respectively, including in the developed and emerging economies, corporate social performance on per capita GDP growth has significant positive impact, and environment and corporate governance factors only positive influence on emerging economies, the impact on the developed countries is not significant (Wu et al., 2023).

Second, to promote the high-quality development of listed companies.
On the one hand, the implementation of ESG can help listed securities companies grasp the global ESG investment trend and "two-carbon" strategic opportunities. According to the Global Sustainable Investment Alliance (GSIA) report 2020 Global Sustainable Investment Review, total ESG investment in major global markets such as Europe, the United States, and Canada has continued to grow since 2016. According to Wind data, as of September 2021, the total scale of ESG funds in The Chinese market has exceeded 195.7 billion yuan, and the annual compound growth rate during the 13th Five-Year Plan period has reached 21%. It is expected that the scale of ESG funds in China is expected to exceed 1.2 trillion yuan by 2030.

In the overseas market, the short-term effect of ESG related index is not obvious, but the medium-and long-term yield is generally higher than that of the benchmark index. According to the calculation of China National Climate Strategy Center, in order to achieve the carbon peak and carbon neutral goal, China's new investment demand in the climate field will reach 139 trillion yuan by 2060, which will provide important opportunities for domestic ESG investment and development. Therefore, ESG investment will provide securities companies with a "new blue ocean" to boost high-quality development.

On the other hand, theoretical studies at home and abroad show that ESG helps to improve the financial performance level and corporate value. ESG can continuously optimize the management of securities companies. Although it will increase the complexity of the work and a certain enterprise cost in the short term, it can improve the enterprise value and return on equity in the medium and long term and reduce the long-term operation risks of enterprises. In the long-term investment process, the factors related to ESG will gradually become the competitive advantage of enterprises. CICC research shows that the importance of ESG has a long positive impact on the growth of market value (1-3 years). According to the "A-share ESG Rating Analysis Report 2021" released by Shangdao Ronglu, the ESG performance of A-share listed companies has A positive correlation with their stock prices. Domestic listed securities companies can strategically layout ESG so as to establish their own competitive advantages in the two-way opening of the capital market.

According to Shangdaoronglu Research, ESG companies with good performance have certain advantages in a number of high-quality development indicators, such as R & D expenditure, technical personnel proportion, human development investment, carbon emission intensity reduction, and the proportion of green income. For example, the high ESG rated listed company group has an average of 12% higher green revenue, 10% higher carbon intensity decline, and 15% higher R & D spending than the low ESG rated group. This reflects that ESG investment partly helps listed companies to achieve high-quality development.

Third, we need to reduce investment risks. The first goal of investment is risk control. In terms of ESG performance, existing studies have shown that good ESG performance can significantly improve the reputation and image of enterprises and enhance the trust of consumers, thus helping enterprises to gain market advantage. At the same time, ESG's top performers tend to attract more investors and reduce their financing costs. ESG performance is also closely related to enterprise internal governance and risk management and is critical to the sound operation and long-term development of the enterprise.

The related risks of enterprises with good ESG performance have been well managed and controlled. Investors can use ESG rating, reporting, index, and other tools to make more targeted investment decisions so as to reduce risks. According to Wind data, the average score of the top 30% of enterprises in 2021 Wind ESG and the next year is 2.88 and 2.86, which is higher than the average score of the bottom 30% of enterprises in the corresponding years. In addition, the average annual volatility of the stock price of the top 30% of Wind ESG in 2021 and the next year is 6.12% and 5.96%, which are lower than the average annual volatility of the top 30% of ESG score.

It can be seen that companies with high ESG scores face low risk. The reason is that the high ESG scoring companies perform better in information disclosure, reducing the information asymmetry of investors thus reducing the risk caused by friction with stakeholders. The good ESG concept also helps the company accumulate moral and reputation capital, and the public is more tolerant of the companies with higher social credibility or brings an "insurance effect" to the company's stock price and has less volatility when responding to external negative impact.

5. Future Trend

Trend 1: ESG investment scale is growing.
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Ma zongming believes that the ESG investment scale will continue to grow, especially in emerging and developing economies. According to the International Energy Agency, the world's population is expected to increase by about 1.7 billion by 2050, with Asia and Africa as the main growth regions, and India will be the largest contributor to global energy demand growth. On the one hand, emerging economies experience growing energy demand, and the Paris Agreement aims to keep global average temperatures within 2 degrees Celsius above pre-industrial levels. To achieve the goal of net zero emissions by 2050, many emerging and developing economies outside China must increase investment in the energy transition more than fivefold by 2030.

Guo Jingpu, executive general manager of Guolian Securities Research Institute, said in an interview with the Securities Times that UN PRI's global asset management scale grew from $6.5 trillion when it was founded in 2006 to $121.3 trillion in 2021. As expectations of a Fed rate cut continue to rise, investors' appetite for ESG assets with long-term sustainability and low potential risk is also increasing, and expectations of loose monetary policy may further boost ESG investment.

Li Wen said that ESG investment in China is undoubtedly the general trend. With the proposal of strategies such as common prosperity, double-carbon goals, high-quality development, and the implementation of relevant systems, taking sustainable development factors into investment consideration is not only highlighting the "moral sense" of investment institutions but also a strategy to effectively improve the financial return of investment and reduce the potential risks of investment. As several difficulties in ESG investment are gradually overcome, ESG investment will usher in greater development opportunities and growth space.

Zhang Rui, CEO of Commercial company, said in an interview with the Securities Times, Firmly optimistic about the future development of ESG investment in China. First, under the overall trend of high-quality development, Investment in line with the concept of high-quality development will continue to be encouraged at the policy level; Secondly, the preference of the asset owners represented by the social security fund and the insurance fund for ESG Will bring more demand for the market; last, According to the company's research on the public's ESG investment attitude, With the development of the economy, market advocacy, and media publicity, The perception and acceptance of ESG investment by public investors continues to improve, These are the cornerstones of the rapid and sustainable development of the ESG investment market.

Trend 2: The ESG reporting disclosure standards will be gradually unified.

Mr Guo said ESG disclosure is crucial to driving the global Sustainable Development Goals and helping investors effectively assess corporate ESG performance. In 2023, a number of regulatory regions launched the ESG policy based on the climate-related Financial Information Disclosure Working Group (TCFD) framework, with major countries and regions basically agreeing on the ESG framework and climate issues. In the past two years, China has developed rapidly in the ESG field. The policy documents issued by government departments and capital market regulators have mostly focused on information disclosure and green development of enterprises. The three major exchanges, Shanghai, Hong Kong, and Shenzhen, have been constantly optimizing ESG rules to meet international policies and standards. In June 2023, the International Sustainable Development Standards Council (ISSB) issued the final draft of the first two drafts of the Guidelines for Sustainable Disclosure of International Financial Reports, which took effect on the annual reporting period starting on or after 1 January 2024, marking the gradual convergence of the sustainable reporting standards. In September 2023, Guo Jun, deputy director of the Listed Company Supervision Department of the China Securities Regulatory Commission, said at the China Forum on Sustainable Investment and Financing and Free Trade Port Construction that he is guiding the Shanghai and Shenzhen Stock Exchanges to study and draft disclosure guidelines for the sustainable development of listed companies. With these standards, regional regulators will try to incorporate standards into their rules.

Trend 3: Corporate participation and shareholder action strategies will become the mainstream of ESG investment.

According to the latest statistics of the Global Sustainable Investment Alliance (GSIA), the investment scale of enterprise participation and shareholder action strategy accounted for 39.3% in 2022, up about 20.7 percentage points compared with 2020, and gradually became the mainstream strategy of ESG investment. At the same time, the investment scale of the ESG integration strategy and negative screening strategy decreased by 17.3 and 7.8 percentage points, respectively, compared with 2020.

Ma Zongming judged that corporate participation and shareholder action strategy will occupy the mainstream in the future. Both ESG negative screening strategy and integration strategy make investment decisions based on the historical ESG performance of listed companies. However, if investors can participate in corporate governance, influence the ESG concept of the enterprise through post-investment management, and promote the improvement of its ESG level, the business performance of the enterprise will also rise, which is what investors want to see.

Trend 4: ESG investment supervision, audit, lawyers, consulting, laws and regulations, and other related supporting facilities will be continuously improved.
Ma said that in the future, countries would definitely strengthen the supervision of ESG investment, especially in the standardization of green financial products and the crackdown on "green washing" behavior. For example, the United States has tightened the identification of ESG investment assets and no longer includes institutions that only adopt ESG investment concepts and do not provide specific ESG application standards.

He also pointed out that there are still few audit, compliance, and legal-related services for ESG reports in China. At present, most listed companies do not conduct an external audit of their disclosed ESG reports to ensure the reliability of the information. In the future, with tighter regulation, compliance reviews of ESG reports will become the norm. At the same time, due to the increasing regulation and complexity of ESG investment regulations, the demand for ESG-related laws will also increase, which will help them abide by or understand relevant laws and regulations.

Trend 5: Methane emission reduction will become an important direction in tackling climate change risks.

After the reform and opening up, the rapid development of the national economy, followed by the increasingly serious environmental pollution problem, how to achieve sustainable development has become a topic of common concern. China should not blindly pursue economic growth without unlimited sacrifice of the environment, nor should it only attach importance to environmental protection while ignoring economic development (Zhang & Huang, 2022). In the ESG information disclosure and rating, corporate carbon emission disclosure and improvement measures occupy an important role, and methane is one of the most important greenhouse gases.

Guo Jingpu's analysis, the 28th UN Climate Conference, released the "Global Critical Point" report, which pointed out that under the global warming trend, five climate "critical points" may be triggered. Currently, methane produced by fossil fuel production, agriculture, and other sectors causes 30% of the global greenhouse effect, making it the world's second largest emissions of greenhouse gas. Although the actual amount of methane is much lower than carbon dioxide, the climate effect per unit emission is stronger, with 27.9 times higher at the scale and 81.2 times at the 20-year scale. Therefore, at the 28th Session of the UN Climate Change Conference, methane emission control has become a hot topic and may become an important direction to tackling climate change risks in the future.

He also noted that currently, traditional animal husbandry is one of the main sources of methane emissions. In order to alleviate climate change and reduce methane emissions, plant meat, as an environmentally friendly alternative to traditional livestock husbandry, is an effective way to achieve sustainable development, and its market demand is expected to increase.

6. Conclusion

In general, the impact of ESG research on enterprise investment and financing decisions is profound. It can not only help enterprises identify and deal with potential risks to improve investment efficiency but also promote enterprises to achieve sustainable development and enhance corporate reputation and brand image. Therefore, enterprises should actively strengthen ESG research and incorporate ESG factors into their investment and financing decisions to achieve long-term and steady development.

However, ESG research is not an overnight process, and enterprises need to invest a lot of time and resources to establish and improve the ESG management system. At the same time, companies also need to maintain close communication with investors, consumers, and other stakeholders to promote the ESG business jointly. Only in this way can enterprises stand out in the increasingly fierce competitive environment and achieve sustainable development.

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