Research on ESG Investment Strategy Based on Climate Change

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Abstract: As climate change becomes a pressing global issue, environmental, social, and governance (ESG) investment philosophies have become essential in investments and decision-making to address the challenges of climate change. The main content of this paper is to examine ESG investment strategies in light of climate change. By comprehensively considering environmental, social, and governance factors and the impacts of climate change, we proposed investment suggestions to promote sustainable development of the investment industry. In addition, this paper introduces three strategies, mutual investment, investment sharing, and investment return, to address the problems in developing the industry under the influence of climate change. In conclusion, ESG investment strategies based on climate change have important theoretical and practical implications. They can effectively manage the risks caused by climate change and promote the high-quality development of the investment industry.

1. Introduction

Addressing climate change is one of the most significant issues facing people today, and it is also a global investment issue. With the rise of the ESG philosophy, climate change is gradually integrated into investment decision-making and has become a key factor affecting investment [1]. This paper aims to examine the ESG investment strategy based on climate change to cope with the problems caused by climate change and promote the sustainable development of the investment industry.

First, integrating climate change subject is at the core of any ESG investment strategy. Climate change has significant environmental, social, and economic impacts. Investors should pay attention to the impact of climate change on investment risks and returns to adapt their investment decisions. Second, there is a close relationship between ESG, climate change, and investment decisions. Investors should consider environmental, social, and governance factors to develop sound investment strategies [2].

However, climate change and ESG investment have brought many challenges. First, climate change uncertainty leads to an increase in investment risk, and over-investment may cause system imbalance. Second, an investment dilemma appears, and investment operations are limited because of climate change. In addition, climate change also brings derivative risks, such as market risks.

Affected by climate change, the development process of the investment industry has changed. This paper proposes three strategies: mutual investment, investment sharing, and investment return. Mutual investment aims to improve the high-quality migration of investment, which is an investment upgrade. Investment sharing emphasizes climate change regulation and investment governance, investment decision-making and climate change cultivation, and promoting investment and climate improvement [3]. Investment return refers to correcting investment and reducing the negative impact of climate change.

In conclusion, the research on ESG investment strategy based on climate change has important theoretical and practical significance. By comprehensively considering environmental, social, and governance factors, as well as climate change, investors can make scientific and reasonable investment decisions, promoting the sustainable development of the investment industry. At the same time, some challenges and shortcomings need to be further analyzed and resolved. Therefore,

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the research in this paper has significant reference value in promoting the development of climate change response and the development of the investment industry.

2. The Integration of Climate Change and ESG Investment: Achieving New Changes in Investment

2.1 Changes in the Content of Climate Change

The integration of climate change and ESG investment is a concept associated with global sustainable development [4]. It reflects the philosophy of green and low-carbon, highlights the orientation of environmental protection, and reflects the strategy of global climate governance in the Paris Agreement. However, it is difficult to achieve a unified understanding when using traditional financial standards to frame the definition and nature of ESG investing and climate change integration.

2.2 ESG, Climate Change, and Investment Decisions

ESG is a criterion for evaluating corporate social responsibility performance that embodies corporate sustainability [5]. Researchers analyzed multiple levels of corporate responsibility from three aspects: environment, society, and governance. In addition, some scholars believe that ESG embodies enterprise management quality or long-term value. Because ESG is more forward-looking to some extent, it belongs to the management science aimed at sustainable development. The history of ESG can even be traced back to the origin of the concept of corporate social responsibility, and its main activities include environmental protection, social responsibility, and governance structure optimization. At the same time, the concept and practice of ESG are closely related to the long-term development of enterprises. Through ESG assessment, investors and stakeholders can comprehensively understand the potential risks in the enterprise. The main contribution of modern enterprise theory is that enterprises should not only pursue financial performance but also consider its impact on the environment and society. Therefore, ESG initially focused on performance measurement based on corporate social responsibility. It has become an indispensable part of investment decision-making, especially when considering climate change. Figure 1 shows the ESG, climate change, and investment decision-making patterns.

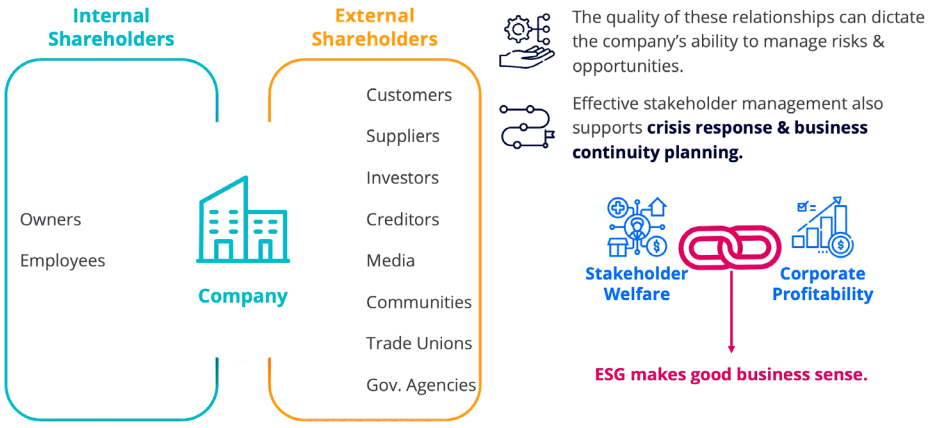

Figure 1 ESG, climate change, and investment decision-making patterns

3. Impacts of Climate Change

3.1 Uncertainty of Climate Change: Overinvestment Causes System Imbalance

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3.2 Investment Dilemma: Operation under Climate Change

Investment dilemma is a phenomenon of investment operation under climate change. Based on the investment dilemma and climate change, we discuss the challenges investors face from the perspective of risk management and market opportunities [7]. Furthermore, some scholars believe that investment dilemmas imply the degree of uncertainty or constraints investors face or the complexity of the investment field. The research topic is challenging to some extent and belongs to investment science to cope with climate change. Research on investment dilemmas dates back to when climate change significantly impacted investment. Key activities include risk management, opportunity identification, and adjustment of investment strategies. Investment dilemmas are closely related to the outcome of investors' decisions. In the investment environment, investors have become key actors in driving climate change adaptation and mitigation. Modern investment theory believes that investors need to re-examine and adjust their investment strategies when considering climate change. Therefore, it initially focused on measuring investment standard attributes based on the impact of climate change. Today, it has become a vital issue in the field of investment to address climate change.

3.3 Derivative Risks Brought by Climate Change

Compared with investment risk, the birth of derivative risk under the domination of climate change emphasizes the relationship between climate change and investment decision-making, which is dynamic and complex. Although some scholars have questioned that climate change has few derivative risks, most scholars argue that climate change can rationally evaluate investment risks. Emanuel Derman et al. proposed a classical model for pricing derivatives with multiple risk factors. Since then, this model has become the leading tool for assessing derivative risk, and the relevant theories and experiments have evolved. Experts advocate that climate change's derivative risk is uncertain and a risk amplifier. When the impact of climate change intensifies, the derivative risk will increase significantly. Therefore, the derived risk results from the impact of climate change [8]. In addition, scholars have summarized the derivative risks of climate change as a dual model: a physical risk model based on climate change and a transition risk model based on climate change. The former focuses on the direct impact of climate change on the physical environment, and the latter focuses on the impact of climate change on economic structure and policy. Climate change will cause risks like ecosystem damage and increased natural disasters. From the risk management perspective, the model provides researchers with an in-depth understanding of climate change. In conclusion, derivative risk management has gradually become the consensus of investment research and practice.

4. The Coping Strategies of the Investment Industry Development Process under the Challenge of Climate Change

4.1 Mutual Investment: Climate Change and Investment Strategies

4.1.1 Ameliorating the Effects of Climate Change and Delivering Quality Investment Migration

The essence of mutual investment is the impact of climate change on investment decisions.

Mutual investment is the application of climate change adaptive thinking in investment. To overcome the shortcomings of the traditional investment model, it has entered the research field as an alternative model. The basic ideas of the framework are as follows. First, the mutual investment should ensure that climate change adaptation is improved. Second, set the professional standards for the output. Third, professionals use technology to seize opportunities in climate change. Fourth, managers use ESG methods to assess performance. The mutual investment framework reconstructs the investment decision-making process, enhances climate change adaptability, improves the investment environment, and improves governance and transparency.

4.1.2 Investment under Climate Change Domestication

Investment upgrading is an excellent strategy to cope with the challenges of climate change, which focuses on the adaptation and transformation of the investment field. Investment strategies reflect climate change risk and management. Some constituent elements of investment upgrading are gradually taking shape, and investment methods and various evaluation systems have gradually received people's attention. However, in reality, some practices remain at the stage of theoretical discussion and need to be consistent with the logical framework and mechanism of climate change, resulting in a mismatch between investment strategies and climate change adaptability.

4.2 Investment Sharing: System Optimization and Investment Governance

4.2.1 Climate Change Regulation and Investment Governance

From the perspective of system optimization, investment governance is an essential part of climate change regulation, and it is the core embodiment of investment decision-making. Therefore, climate change regulation is the main generative logic of investment sharing. Climate change regulation is the primary purpose of investment sharing and the key to governance. At present, experts use regulation to strengthen control, and there are three primary forms: the first is to clarify the realization way between investment strategy and operation. The second is to formulate standards based on ESG (Environment, Society, and Governance) and carbon emission standards and disclose these standards to investors to realize standardized control of the investment process. The third is the internal reengineering of the process. In recent years, international organizations and leading corporations have used climate change regulation to improve investment quality and transparency. However, compared with the ideal state, the current practical level of investment sharing needs to be further improved.

4.2.2 Investment Decisions and Climate Change Mitigation Measures

The fundamental difference between investment decision-making and climate change mitigation measures lies in their sustainability. ESG standards and climate change guidelines aim at sustainable development, and climate change mitigation measures are mainly reflected in improving climate conditions and identifying opportunities. In this framework, the core values and highest development standards are accurate assessment, information disclosure, risk management, and adaptation strategies. The diversity and differences of current investment types lead to complex investment decisions. Although some climate change mitigation measures exist, investment decisions are imperfect, and climate change mitigation measures also lack efficient experimental mechanisms. As a result, it has been a short board of climate change response, which needs to improve the quality and effectiveness of investment decision-making.

4.2.3 Investment Sharing and Climate Change Co-governance

From the perspective of climate change co-governance, traditional investment models cannot give the comprehensive information needed to address climate change. Investors' evaluation of investment effectiveness is primarily done in the form of satisfaction, but detailed information and feedback mechanisms are needed regarding the impact of climate change. The core of this problem may lie in information asymmetry. In governance, investment sharing is typically described as joint participation by stakeholders, and climate change and its impacts reflect the level of investment

decision-making. However, most of the investment information is about indicators such as financial performance, and there needs to be more data on the impact of climate change. The long-term effects of climate change are difficult to find or assess. In summary, information asymmetry and imperfect feedback mechanisms directly hinder investment sharing and climate change co-governance.

4.3 Investment Return: Fix Investments and Pay Attention to Climate Change

From the perspective of climate change adaptation, the traditional investment model has long restricted the speed of response to climate change. Since the 21st century, the ESG investment concept, which is connected with sustainable development, has reshaped the investment decision-making process considering the impact of climate change. However, the drawbacks of the traditional investment model restrict the depth and breadth of optimization strategies. Due to the financial performance and insufficient understanding of the impact of climate change, ESG investment needs to be improved. Under the premise that climate change has become a reality, ESG investment is regarded as an efficient way to address climate change. The role of ESG-based climate change investment in actual economic transformation and social impact remains to be discussed. At the same time, difficulties in information disclosure and evaluation lead to investors' inability to obtain comprehensive climate information. Therefore, ESG-based investment has yet to achieve the expected high-quality development goals. To sum up, ESG investment needs to be improved in technology, and it also faces the challenge of investors' cognition and behavior.

5. Conclusion

Climate change response strategies have been integrated into the core of investment decisions, which poses new challenges and requirements for investors. ESG represents a pioneer in sustainable development and is an essential means of combating climate change. It aligns with the urgent need to promote economic transformation and maintain ecological balance and reflects the inherent requirements of the investment field to cope with climate change. ESG investment is a theoretical analysis framework and practical mechanism that integrates environmental, social, and governance factors under the guidance of the investment environment. In recent years, modern information technologies such as big data and artificial intelligence have promoted the in-depth development of ESG philosophy. Technology improves the accuracy of investment decisions and its value accords with the inherent logic of climate change. Therefore, ESG investment based on information technology provides investors with a new method. In conclusion, the sustainable improvement and development of ESG investment will help to better cope with climate change and promote high-quality development in the investment field.

References

[1] Christensen J H, Kanikicharla K K, Aldrian E, et al. Climate phenomena and their relevance for future regional climate change[M]//Climate change 2013 the physical science basis: Working group I contribution to the fifth assessment report of the intergovernmental panel on climate change. Cambridge University Press, 2013: 1217-1308.

[2] Chen H M, Kuo T C, Chen J L. Impacts on the ESG and financial performances of companies in the manufacturing industry based on the climate change related risks[J]. Journal of Cleaner Production, 2022, 380: 134951.

[3] Haritha P, Uchil R. Conceptual framework on market factors affecting investor’s sentiments and the effect of behavioral pitfalls on investment decision making[J]. IOSR Journal of Economics and Finance, 2016: 29-34.

[4] Stafford-Smith M, Griggs D, Gaffney O, et al. Integration: the key to implementing the Sustainable Development Goals[J]. Sustainability science, 2017, 12: 911-919.

[5] Cao J, Titman S, Zhan X, et al. ESG preference, institutional trading, and stock return patterns[J]. Journal of financial and quantitative analysis, 2023, 58(5): 1843-1877.

[6] Wang H, Tong L, Takeuchi R, et al. Corporate social responsibility: An overview and new research directions: Thematic issue on corporate social responsibility[J]. Academy of Management journal, 2016, 59(2): 534-544.

[7] Hopkin P. Fundamentals of risk management: understanding, evaluating and implementing effective risk management[M]. Kogan Page Publishers, 2018.

[8] Bernai R R. Managing the risks of extreme events and disasters to advance climate change adaptation[J]. Economics of Energy & Environmental Policy, 2013, 2(1): 101-113.