

Current Status and Countermeasures of Sustainable Development in Green Finance

Chengye Jiang

Monash University, Melbourne, Australia

jiangchengye11@163.com

Abstract. With the global economy accelerating toward a low-carbon and green transformation, the Environmental, Social, and Governance (ESG) framework has gradually become a core standard for measuring sustainable development. Green finance, as a bridge connecting capital and sustainable projects, aims to promote resource allocation toward environmentally friendly projects to achieve balanced development in the economy, environment, and society. This paper analyzes the current status of sustainable development in green finance under the ESG framework, explores trends in the development of the green finance market, the extent of the adoption of ESG investment concepts, policy implementation, and challenges faced in financial product innovation, and proposes relevant countermeasures and recommendations.

Keywords: ESG framework, green finance, sustainable development, low-carbon economy.

1. Introduction

Against the backdrop of the global economy transitioning to a green and low-carbon model, the ESG framework has become a key driving force for promoting sustainable development. Green finance, as an important vehicle for achieving ESG objectives, has gradually developed into a crucial component of the global financial market. Green finance not only helps guide capital towards environmentally and socially responsible projects, but also plays a significant role in optimizing resource allocation and promoting environmental protection and social welfare. However, the sustainable development of green finance still faces numerous challenges, such as insufficient innovation in green financial products, an imperfect ESG information disclosure system, and weak mechanisms for transnational green financial cooperation. How to optimize the green financial system under the ESG framework, promote policy implementation, and enhance market participation is an important issue for achieving sustainable development. This paper will conduct an in-depth analysis of the current state of green finance, explore its development bottlenecks, and propose corresponding countermeasures.

2. Overview of the ESG Framework

The concept of ESG (Environmental, Social Responsibility, and Corporate Governance) was formally proposed by the United Nations in 2004, aiming to encourage companies, when conducting business activities, to consider not only economic benefits but also multi-dimensional factors such as environmental protection, social responsibility, and governance structures, thereby forming a comprehensive and sustainable development strategy. The environmental dimension focuses on the impact of business activities on natural resources and ecosystems, advocating sustainable production methods such as low-carbon, green, energy-saving, and emission-reducing practices; the social dimension emphasizes how companies fulfill their social responsibilities, ensuring employee welfare, consumer rights, and positive community interactions; the governance dimension centers on improving the internal governance structures of companies, focusing on transparency, board independence, and the protection of shareholder rights [1]. The proposal of the ESG concept reflects a profound reevaluation of the traditional economic development model, requiring companies to assume their due environmental and social responsibilities while pursuing economic benefits, thus promoting overall sustainable societal development. With the advancement of globalization, the ESG

concept has gradually become an important standard for investment decisions in the international capital market. In the field of green finance, the ESG framework provides a more diversified value orientation for capital flow, promoting the allocation of funds to environmentally friendly and socially responsible projects.

3. Current Status of Sustainable Development of Green Finance

3.1. Development Status of the Green Finance Market

Under the ESG framework, the green finance market continues to develop and is receiving increasing attention globally. With the rise in global demand for green investment, the scale of the green finance market is continuously expanding, and market activity in areas such as green bonds and green credit is increasing year by year. Governments and international institutions around the world are promoting the popularization and application of green finance tools through policy guidance and market standardization efforts. For example, Europe, the United States, and other regions have gradually improved green finance standards and evaluation systems, significantly increasing the issuance of green bonds and promoting capital market financing support for green projects [2].

However, China's green finance market still faces considerable development challenges. Although the proportion of renewable energy consumption and renewable electricity output has been increasing year by year, reflecting the continuous development of the green energy industry, overall, the share of green energy in total energy consumption and electricity production is still relatively low, indicating that the speed of the green transition has not yet reached expectations. Meanwhile, although per capita water resources and carbon dioxide emissions have improved to some extent, the pressure from resource consumption and pollution emissions remains high, which increases the demand for green financial support. In this context, financing green projects is difficult, and the lack of unified project selection standards has led to doubts in the market regarding the comparability and transparency of green projects, further restricting capital liquidity and affecting investor confidence.

3.2. The Popularity of the ESG Investment Concept

With the advancement of global sustainable development goals, the ESG investment concept has gradually gained widespread attention in capital markets. Increasingly, investors are beginning to value companies' performance in non-financial indicators such as environmental impact, social responsibility, and corporate governance, driving green finance to gradually become a mainstream investment direction. Financial markets in many countries and regions have already incorporated ESG as an important basis for investment decisions, promoting investment demand related to environmental protection, social responsibility, and governance. However, the global popularity of the ESG investment concept still varies significantly. In some emerging markets and developing countries, the application of related concepts has not reached the expected level. In the domestic market, although policies for green finance and related financial products are increasing, the lack of unified ESG rating standards, imperfect information disclosure mechanisms, and an incomplete regulatory framework result in relatively low investor participation in ESG investments. The transparency of ESG information disclosure is also a key factor limiting further promotion. Financial institutions and investors face challenges in applying ESG performance due to the absence of effective quantitative tools to measure companies' overall ESG performance. Therefore, to achieve comprehensive popularization and application of the ESG investment concept, efforts are needed to enhance information disclosure transparency and improve investors' ESG awareness, thereby promoting the sustainable development of green finance [3].

3.3. Implementation of Green Finance Policies

The progress of implementing green finance policies is influenced by multiple factors, including policy coordination, participation of market players, and the enforcement of relevant regulations. At the government level, a series of policy documents have been issued to promote green finance, such

as green credit policies and green bond policies, aiming to encourage financial institutions to increase financing support for green projects. However, the effectiveness of policy implementation varies across regions, with some local governments failing to fully implement national policies due to local protectionism or short-term interests. Financial institutions commonly face issues during policy implementation, such as inconsistent evaluation standards for green projects and incomplete risk assessment models, resulting in discrepancies between the actual issuance of green financial products and the expected targets. Moreover, the external market environment for green finance is not yet fully developed, lacking sufficient green investors and specialized green financial service institutions, which limits the promotion and adoption of policies. Nevertheless, green finance policies have already shown some market response in practice, with their guiding role initially reflected in the growth of green bonds and green credit.

3.4. Challenges in the Innovation of Green Financial Products

Under the ESG framework, the innovation of green financial products faces a series of challenges, primarily in areas such as technological barriers, market acceptance, and the construction of standardized systems. Firstly, in fields such as green energy, carbon trading, and carbon finance, the innovation of green financial products generally relies on advancements in green technology. However, the development of green technology often lags behind market demand, which restricts the design and implementation of green financial products, making it difficult for innovation to keep pace with the needs of market changes. Secondly, the market's awareness of green financial products is relatively low. Investors still have significant concerns about the risks and uncertainties of green investment returns. Compared with traditional financial products, the uniqueness of green financial products makes it difficult for some investors to accept them, thereby limiting market demand for green financial products and affecting the inflow of innovation capital. Thirdly, the standardization system for green financial products is not yet fully developed. The lack of unified industry norms and evaluation standards creates doubts among investors and regulatory authorities regarding transparency, authenticity, and sustainability. This absence of standardization restricts the market's recognition of innovative green financial products, impacting the development of the green financial market and the promotion of innovation.

4. Strategies for the Sustainable Development of Green Finance

4.1. Improving the ESG Information Disclosure Mechanism

With the rapid development of green finance, investors and other stakeholders have increasingly high demands for enterprises' performance in ESG areas. However, there are still significant gaps in the information disclosure of enterprises in these fields. Therefore, improving the ESG information disclosure mechanism helps enhance market transparency, reduce investment decision risks, and effectively promote the sustainable development of enterprises.

Firstly, standardize information disclosure standards. Currently, standards and requirements for ESG information disclosure vary globally, resulting in poor comparability among different regions and enterprises. Legislation and policy guidance should be used to formulate unified ESG information disclosure standards, specifying disclosure content, frequency, and format to ensure information accuracy. For instance, the China Securities Regulatory Commission can refer to mature experiences from international capital markets and implement unified disclosure standards domestically to promote transparency in green investments.

Secondly, strengthen mandatory information disclosure requirements. In addition to voluntary disclosure, for listed companies and financial institutions' green financial products, the government should promote mandatory ESG information disclosure. Relevant laws and regulations should require enterprises and financial institutions to disclose specific data related to environmental, social, and governance aspects according to certain standards, clarify quantitative requirements for sustainable development indicators, and ensure regular updates of information. For example, for listed companies,

securities regulatory authorities may require regular disclosure of data on environmental pollution control, carbon emission levels, and labor rights, and impose punitive measures on companies with non-compliant disclosures to enhance their responsibility in disclosing ESG information.

Thirdly, promote technological innovation in information disclosure. With the development of big data, blockchain, and other technologies, technological tools should be applied to ESG information disclosure to improve data traceability. For example, blockchain technology can be used to ensure that ESG data disclosed by enterprises is immutable throughout the chain, thereby increasing the credibility of enterprise information disclosure [4].

4.2. Promoting the Diversification of Green Financial Products

Under the ESG framework, diversifying green financial products can meet the needs of different investors, thereby effectively supporting sustainable development strategic goals.

Firstly, developing the green bond market. In the current global capital market, green bonds are gradually being favored by investors as a financing tool. China can use policy guidance to strengthen the formulation and standardization of green bonds, ensuring that green bond funds are truly used for environmental protection projects. For example, tax incentives for green bonds can be introduced at the policy level, alongside the improvement of green bond certification systems, to enhance investors' trust in green bonds and promote the continuous maturity of the green bond market.

Secondly, expanding the types and scope of green funds. Green funds, as a source of capital supporting environmental protection enterprises and projects, have become an important component of green financial products. However, the current number and variety of green funds are still insufficient to fully cover the needs of the environmental protection sector. Therefore, it is necessary to strengthen the innovation of green funds, introducing specialized funds such as green agricultural funds and green infrastructure funds according to the characteristics of different industries, to attract capital from various fields to participate in the green industry. The diversification of green funds can enhance capital allocation efficiency, increase financial support for enterprises' green transformation, and promote the rapid development of a green economy.

Thirdly, innovating green insurance products. Green insurance is an important tool to address environmental risks and plays a key role in risk-sharing and environmental protection. At present, green insurance products in China are still in their early stages, lacking innovative insurance products with market competitiveness. Therefore, under policy incentives, insurance companies should develop more attractive green insurance products, such as climate change risk insurance and carbon emission insurance, to provide enterprises and individuals with more comprehensive green risk protection.

4.3. Strengthening International Cooperation in Green Finance

To effectively address global climate change and resource scarcity, the international community should strengthen cross-border cooperation in the field of green finance, promoting the global coordinated development of the green financial system through policy coordination, capital flows, technological innovation, and other aspects.

Firstly, relying on the coordination of multilateral financial institutions and international organizations, a unified green finance standard should be established to reduce barriers for cross-border green projects and facilitate effective integration of global capital markets. For example, the global unified green bond certification standards proposed by the International Green Finance Standardization Committee help ensure connectivity among green bond markets in different countries and regions, reducing information asymmetry for investors regarding green investments.

Secondly, cross-border green investment cooperation should be strengthened, utilizing international platforms such as the Belt and Road Initiative to facilitate the flow of funds and technology transfer for green projects. Green finance not only optimizes resource allocation and promotes the growth of green industries in developing countries but also enhances their ability to

respond to climate change. In areas such as renewable energy and environmental protection, guidance from international capital can accelerate the adoption of green technologies [5].

Thirdly, the exchange of international green finance information and data should be enhanced to promote transparency of green finance data. For example, the global green finance information platform provides information on green projects and investment opportunities to different countries and regions, fostering interaction and cooperation among green investors.

Finally, international cooperation should focus on building mechanisms for innovation in green finance, promoting financial instruments such as green derivatives and green securities, thereby offering investors more diversified green investment options. In this process, international cooperation in green finance must emphasize risk prevention, establishing appropriate risk management frameworks for potential environmental, social, and governance risks in cross-border green projects to ensure the sustainability of the green financial system.

4.4. Strengthening Professional Training in Green Finance

In promoting the sustainable development of green finance, professional training is a key step in enhancing the service capabilities of financial institutions. Strengthening professional training in green finance should be approached from multiple aspects, aiming to cultivate financial talents with professional knowledge, skills, and comprehensive abilities in green finance.

Firstly, establish a green finance talent training system. Financial institutions and higher education institutions should work closely together to develop green finance-related curricula, regularly organize training classes, academic forums, and industry seminars to promote the dissemination and exchange of professional knowledge. At the same time, financial regulatory authorities should play a guiding role by establishing clear standards and guidelines for green finance talent cultivation to ensure that training institutions at all levels align with the needs of green finance development.

Secondly, enhance the theoretical literacy and practical operational skills of practitioners in green finance. Currently, the green finance industry faces rapidly evolving and continuously upgrading market demands, requiring financial practitioners to possess a solid foundation in financial theory as well as professional practical skills in green investment assessment, green risk management, and green debt instruments. Therefore, training courses should focus on improving practitioners' operational skills in green finance policies, green financial product innovation, green asset pricing, and green credit evaluation, enabling them to proficiently handle the design of green finance products, optimization of financing structures, and risk control of green projects.

Thirdly, encourage the integration of cross-industry knowledge and comprehensive training. Green finance, as an interdisciplinary field, involves knowledge systems from environmental science, economics, management, and other disciplines. Therefore, professional training for financial practitioners should break through the traditional single-discipline framework and promote the integration of knowledge from areas such as environment, law, policy, and finance. For example, interdisciplinary joint training courses could be offered to guide participants in understanding how to assess the market potential of green projects from multiple dimensions and how to use financial tools to promote the achievement of sustainable development goals [6].

5. Summary

In summary, under the ESG framework, green finance serves as a key driver for achieving sustainable development, and its effectiveness is closely linked to the market environment. As global capital markets place increasing importance on ESG factors, green finance faces the significant responsibility of further improving resource allocation efficiency and supporting the transformation of green industries. Although policy systems are gradually being perfected and financial products and investment concepts continue to innovate, green finance still has notable shortcomings in areas such as information transparency, market mechanism development, and international cooperation. Therefore, improving the infrastructure of the green finance market, enhancing the quality of

corporate ESG information disclosure, promoting innovation in green investment return mechanisms, and deepening international cooperation networks have become key pathways to drive the sustainable development of green finance. In this process, green finance facilitates the low-carbon transformation of capital markets and provides solid financial support for high-quality global economic development.

References

- [1] Jing Jin. Green Investment Strategies and Risk Management of Financial Institutions under the ESG Framework [J]. *China Collective Economy*, 2025 (6): 98-101.
- [2] Lu Minfeng. The Empowerment of Green Finance and Green Consumption by Blockchain Technology: Research on Collaborative Development Models [J]. *Journal of Agricultural Bank Studies*, 2025 (1): 49-52.
- [3] Gan Lulu. Research on Green Finance Empowering High-Quality Economic Development in the Yangtze River Delta Region [J]. *Modern Marketing (Late Month Issue)*, 2025 (1): 96-98.
- [4] Hu Zhiyu. Institutional Review and Legal Responses of Competition Law under the ESG Concept [J]. *Journal of East China University of Political Science and Law*, 2025, 28 (1): 125-134.
- [5] He Xiaoyi. Research on the Impact of Green Finance Reform on Corporate Sustainable Development Performance [J]. *Modern Marketing (Early Month Issue)*, 2024 (12): 67-69.
- [6] Zhang Changjing. Foreign Capital Inflow and Regional Economic Sustainable Development under the ESG Framework [J]. *China Foreign Investment*, 2024 (20): 35-37.