

## Original Paper

# Research on Sustainable Development Path of Green Finance under the Background of “Double Carbon”

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Received: July 5, 2024

Accepted: July 25, 2024

Online Published: July 28, 2024

doi:10.22158/jbtp.v12n3p60

URL: <http://dx.doi.org/10.22158/jbtp.v12n3p60>

### **Abstract**

*With the increasingly serious problem of global climate change, countries have put forward the goal of carbon neutrality and carbon peak. In 2020, China proposed a “dual carbon” goal, which is to achieve carbon neutrality by 2060 and peak carbon by 2030. In this context, green finance plays an increasingly critical role as an important tool for promoting sustainable development. Green finance provides financial support for the green transformation of the economy by facilitating the flow of capital to environmental and renewable energy projects. This paper aims to discuss the sustainable development path of green finance under the background of “double carbon” goal, and analyze its current situation, challenges and future development direction. Through the analysis of policy environment, market status and cases, practical development paths are proposed in order to provide reference and reference for the development of green finance in China and even the world.*

### **Keyword**

*Dual carbon target, Green finance, Sustainable development, Development path*

## **1. Introduction**

### *1.1 Research Background*

In the context of global climate change, the issue of carbon emission has been paid more and more attention. Governments and international organizations have introduced policies to address climate change, and China has also proposed a “dual carbon” goal in this process. As an important tool to solve this problem, green finance has important policy and practical significance. Studying this area not only contributes to sustainable development, but also provides opportunities for innovation in financial markets.

### *1.2 Research Purpose and Significance*

This paper aims to analyze the sustainable development path of green finance under the dual-carbon goal and explore how to promote the green transformation of economy through green finance. The significance of the research is to provide theoretical basis and practical guidance for policy makers, financial institutions and enterprises to help achieve the dual objectives of environment and economy.

### *1.3 Research Methods and Framework*

Using literature analysis, case study and comparative study, combined with quantitative and qualitative analysis, this paper comprehensively discusses the theoretical basis and practical status of green finance. The structure of the paper is divided into seven chapters with clear logic and progressive layers.

## 2. Theoretical Basis

### 2.1 Concept and Connotation of Green Finance

Green finance is an innovative financial model that combines environmental protection with financial services, aiming to promote the green transformation of the economy by channeling funds to sustainable and environmentally friendly projects. Its connotation is not limited to providing green credit or investing in green projects, but also to establishing a set of evaluation and management mechanisms to ensure the environmental benefits of funds. The core of green finance is to identify and manage financial risks related to the environment, encourage financial institutions to take the initiative to assume social responsibilities, and promote the development of green industries. There are many kinds of green finance products, including green bonds, green funds and green credits, which can provide effective financial support for renewable energy, energy conservation and emission reduction, circular economy and other projects. At the same time, green finance also emphasizes transparency and information disclosure to increase trust and participation in the market. Through the promotion of green finance, social capital can be effectively guided to the field of environmental protection and promote the realization of sustainable development goals.

### 2.2 Theoretical Basis of Sustainable Development

Sustainable development is a comprehensive concept that emphasizes the harmony between economic development, social progress and ecological protection. Its theoretical basis stems from the rational use and distribution of resources, emphasizing that current human needs should be met without compromising the ability of future generations to meet their needs. Sustainable development involves three dimensions of economy, society and environment, in which economic development is the foundation, social justice is the goal, and environmental protection is the premise. Green finance is one of the important tools to achieve sustainable development, promoting the efficient use of resources and environmental improvement by promoting green investment and financing. Sustainable development theory emphasizes long-term benefits and systematic thinking. Under this framework, green finance is committed to injecting green impetus into the economy and helping the society develop in a more equitable and sustainable direction.

The development of carbon finance provides a powerful market-driven mechanism for global efforts to reduce emissions. From carbon trading to financial derivatives to carbon asset management services, innovative financial products and services not only help mitigate climate change, but also provide new opportunities for investors. As the global economy continues to move in a low-carbon, environmentally friendly direction, we can expect the carbon finance market to continue to grow in size and influence.

### 2.3 Relationship between Dual-Carbon Target and Green Finance

The dual-carbon target is an important strategy proposed by China to combat global climate change, aiming to achieve carbon peak by 2030 and carbon neutrality by 2060. To achieve this goal requires a huge amount of capital investment, and green finance is an important way to provide funding for this. Green finance contributes to the green transition by channeling social capital to low-carbon, environmentally friendly and renewable energy projects. Specifically, green finance can provide necessary financial support for carbon reduction projects through the issuance of green bonds and the provision of green credit. At the same time, green finance promotes the research and development and application of low-carbon technologies, and encourages enterprises to increase investment in environmentally friendly projects by reducing financing costs. In addition, through the establishment of standards and evaluation systems, green finance also enhances the transparency and credibility of

projects, and enhances the confidence of investors, so as to better serve the realization of dual-carbon goals.

### **3. The Development Status of Green Finance in China**

#### *3.1 Policy Environment Analysis*

China's green finance policy environment is becoming more and more perfect, and the government has adopted a number of policies to promote the development of green finance. For example, in 2016, the People's Bank of China issued the "Green Finance Guidance", which clearly calls for the establishment of a green financial system and encourages financial institutions to increase their support for green projects. In addition, green credit, green bonds, green funds and other policy tools have been introduced, providing diversified options for green project financing. The government also encourages financial institutions and enterprises to actively participate in green finance activities through fiscal subsidies, tax incentives and other measures. The implementation of these policies has provided a good foundation for the healthy development of the green financial market. However, there are still differences in the effectiveness and implementation of policies, and the implementation and supervision of policies need to be strengthened to ensure the sustainable development of the green financial market.

#### *3.2 Scale and Structure of Green Finance Market*

In recent years, China's green finance market has been expanding and has become one of the largest green bond markets in the world. According to statistics, the issuance of green bonds in China in 2020 will reach nearly 300 billion yuan, covering many fields such as clean energy, energy conservation and emission reduction, and pollution control. In terms of green credit, the banking industry has also responded positively, and the balance of green credit has increased year by year, providing financial support for many green projects. However, the market structure needs to be further optimized, the types of green financial products are still relatively simple, and some financial institutions have insufficient cognition and understanding of green projects, resulting in inefficient capital allocation. Therefore, it is necessary to strengthen the training and education of financial institutions in the future, and enhance their green financial service capabilities to better meet the market demand.

#### *3.3 Types of Green Financial Products and Services*

There are a variety of green financial products, including green credit, green bonds, green, carbon finance, etc., which can meet the market demand at different levels. Green credit is mainly provided by financial institutions such as banks to support environmental projects and investment in renewable energy; Green bonds are a way for companies and governments to finance green projects by issuing bonds. Green funds pool money from multiple investors and focus on green projects. In addition, carbon finance, as an emerging field, promotes enterprises to reduce carbon emissions through carbon trading markets and forms an economic incentive mechanism. With the development of the market, new green financial products such as green insurance and green asset securitization have been gradually launched to provide investors with more choices. The diversity of these products not only enriches the market, but also provides more financing channels for achieving sustainable development.

## 4. Challenges

### 4.1 *Insufficient Supply of Funds*

Although the green finance market continues to expand, it still faces the problem of insufficient capital supply. Many green projects tend to require high initial investment and have long payback cycles, and financial institutions are more sensitive to the credit risk of these projects, resulting in insufficient capital inflows. Especially in the case of economic fluctuations and market uncertainties, financial institutions are more inclined to invest in short-term return projects, further aggravating the financing difficulties of green projects. In addition, the benefits of green projects are often affected by multiple factors such as policy, market and technology, which increases the difficulty of risk assessment for financial institutions. Therefore, it is urgent to alleviate the problem of insufficient fund supply by introducing government support and setting up green development funds to ensure the smooth development of green projects.

### 4.2 *Information Asymmetry and Transparency*

In the green finance market, information asymmetry is widespread, and it is often difficult for investors to obtain accurate and comprehensive project evaluation and environmental benefit information. This complicates investment decisions and reduces the efficient allocation of funds. Many companies fail to fully disclose their environmental impact and sustainability during the financing process of green projects, leading financial institutions to face the dilemma of insufficient information when approving credit. In order to solve this problem, it is essential to establish a transparent information disclosure mechanism. The government and industry organizations should formulate relevant standards and require enterprises to provide detailed environmental reports and project evaluations in the financing process, so as to improve the transparency of the market and enhance the trust of investors, thus promoting the healthy development of green finance.

### 4.3 *Green Finance Standards and Evaluation System to Be Improved*

At present, the standard and evaluation system of green finance is not perfect, which leads to the difference in the identification of green projects by different institutions. This problem makes investors lack a unified reference when choosing green investment projects, which affects the regulation and development of the market. Some financial institutions may misjudge the green nature of the project due to lack of professional knowledge, resulting in misallocation of funds. Therefore, the establishment of a unified green finance standard and evaluation mechanism is an important link to enhance the effectiveness of the market. The government should work with industry associations, financial institutions and other forces to jointly develop standards for green financial products, clarify the evaluation criteria and evaluation system for green projects, and ensure the healthy and orderly development of the market.

## 5. Sustainable Development Path

### 5.1 *Improve the System of Policies and Regulations*

In order to promote the sustainable development of green finance, it is necessary to further improve relevant policies and regulations and form a systematic support system. The government should issue a green finance development plan, clarify the goals and directions, and establish a corresponding assessment mechanism to supervise and evaluate the green finance business of financial institutions. In addition, local governments are encouraged to formulate supporting policies according to their own actual conditions to support the development of green finance. For example, more social capital can be

attracted to participate in green projects through measures such as setting up green development funds and providing financial interest discounts. At the same time, it is necessary to strengthen the publicity and training of policies, improve the awareness and execution of financial institutions and enterprises on green finance policies, and ensure the effective implementation of policies, so as to lay the foundation for the healthy development of green finance market.

### *5.2 Strengthen the Innovation of Green Financial Products*

Financial institutions should actively innovate green financial products to meet different levels of market demand. For example, new products such as green insurance, green funds and green asset securitization can be developed to promote the flow of capital to green projects. In addition, the rapid development of fintech provides new opportunities for the innovation of green financial products, which can improve the transparency and traceability of projects and reduce financing costs through big data, blockchain and other technologies. Financial institutions should also work with enterprises to understand their financing needs and launch targeted financial products to enhance the vitality and competitiveness of the market. Through product innovation, green finance can better serve the Sustainable development Goals and promote the economic transition to green.

### *5.3 Promote Multi-Party Cooperation and Information Sharing*

The development of green finance is inseparable from multi-party cooperation. Financial institutions, enterprises, governments and social organizations should establish information sharing mechanisms to promote effective allocation of resources and cooperation. The government can build a public information platform to promote information exchange between financial institutions and enterprises and reduce the difficulty of financing. At the same time, financial institutions are encouraged to cooperate with scientific research institutions and environmental protection organizations to jointly evaluate the environmental benefits of green projects and improve the credibility of the projects. In addition, financial institutions can also cooperate with international organizations to learn from international successful experiences and promote the international development of green finance. Through multi-party cooperation and information sharing, we will form a joint force to jointly deal with climate change and environmental issues, and promote the sustainable development of green finance.

### *5.4 Establish and Improve the Green Finance Evaluation Mechanism*

The establishment of a scientific and reasonable green finance evaluation mechanism can improve the efficiency of the use of funds and ensure the flow of funds for green projects. The government and industry associations should formulate unified evaluation standards for green finance, clarify evaluation indicators and methods, and provide a reference basis for financial institutions. At the same time, promote the development of third-party evaluation agencies, through independent evaluation and certification, enhance the transparency and credibility of the project, and enhance the confidence of investors. In addition, financial institutions should establish an internal evaluation mechanism, regularly evaluate the performance of green projects, and timely adjust investment strategies to ensure the effective allocation of funds. By establishing a sound evaluation mechanism for green finance, the healthy development of green finance market can be effectively promoted.

## 6. Case Study

### 6.1 Analysis of Successful Cases of Green Finance at Home and Abroad

On a global scale, many countries have achieved remarkable results in the field of green finance. For example, Europe's green bond market has grown rapidly to become one of the largest in the world. By establishing strict green bond standards to ensure that funds flow to truly green projects, market transparency and investor confidence are enhanced. In addition, the United States has also achieved remarkable results in renewable energy investment, the government through tax incentives, subsidies and other ways to encourage enterprises to invest in green energy projects. These successful cases show that scientific policy guidance and the improvement of market mechanism are the key factors to promote the development of green finance, and provide valuable reference for the development of green finance in China.

### 6.2 Implications of the Case for the Development of Green Finance in China

Through the analysis of the successful cases of green finance at home and abroad, we can sum up the green finance development strategy suitable for China's national conditions. First of all, the government should strengthen policy guidance, formulate a clear green finance development plan, and clarify the goals and directions. Second, financial institutions should actively innovate green financial products, enrich market supply, and meet different levels of demand. In addition, establish a transparent information disclosure mechanism to improve the credibility of the project and enhance the trust of the market. At the same time, multi-party cooperation is encouraged to promote the coordinated development of financial institutions with enterprises, governments and scientific research institutions. By learning from international successful experience and combining with China's actual situation, we will promote the sustainable development of green finance and contribute to the realization of the double carbon goal.

## 7. Conclusion and Prospect

### 7.1 Main Conclusions

Through the analysis of green finance under the background of double carbon, this paper makes clear its important role in promoting sustainable development. Green finance not only provides financial support for achieving the goal of carbon peak and carbon neutrality, but also promotes environmental protection and economic transformation through rational allocation of funds. The research shows that improving policy and regulation system, strengthening product innovation, promoting multi-party cooperation and establishing evaluation mechanism are the key paths to promote sustainable development of green finance. Although the development of green finance currently faces challenges such as insufficient capital supply, asymmetric information and lack of standards, the green finance market will usher in a broader space for development through the implementation of systematic measures.

### 7.2 Recommendations for Future Research

Future research could further explore the cross-impact of green finance with other fields, such as digital finance and socially responsible investment, and focus on the application of emerging technologies in green finance. In addition, it is necessary to strengthen the research on international cooperation in green finance, analyze the differences in green finance policies and practices in different countries, and provide a broader perspective for the development of green finance in China. At the same time, it is suggested to carry out empirical research to evaluate the comprehensive impact of green finance on

economy, society and environment, so as to form a more comprehensive theoretical framework and policy recommendations. Through these studies, we will help the sustainable development of China's green finance and contribute wisdom and strength to the realization of the "double carbon" goal.

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