

Research on The Path of China's Green Finance to Support the Development of Low-carbon Economy

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Abstract: Green finance is a financial business that uses a combination of direct and indirect financing to rationalize the use of ecological resources and achieve economic development and environmental protection at the same time. Green finance is one of the effective policy tools for high-quality economic development. As an important part of developing low-carbon economy, developing green finance is an inevitable trend of financial development. This paper analyzes the main types and problems of green finance in the context of low-carbon economy, and puts forward policy suggestions for green finance to support the development of low-carbon economy.

Keywords: Green finance, Low-carbon economy, Ecological resources.

1. The Importance of Green Finance Development in Low-carbon Economy

According to the China Blue Book on Climate Change (2021)[1], the rate of global sea level rise has increased from 1.4 mm/year in 1901-1990 to 3.3 mm/year in 1993-2020, and 2020 is the highest value since the satellite observation records. In recent years, environmental problems have become more and more profound for human society, and the development of low-carbon economy has received more and more attention from the international community. In order to cope with the severe consequences of global climate change, our government has committed to achieve the goal of carbon peaking by 2030 and carbon neutrality by 2060. Achieving green, low-carbon, clean production productivity change and development path transformation is not an easy task and requires assistance from various parties. Among them, green finance is an important bridge that cannot be underestimated in achieving green, low-carbon and high-quality development of the real economy. The development of a low-carbon economy requires a large amount of capital investment, and with limited government input funds, financial support becomes very important, and the essence of green finance is to solve the problem of global warming and environmental damage through optimal financial engineering.

2. Main Types of Green Finance

2.1. Green Credit Financing (GCF)

Green Credit Financing (GCF) is a financial service offered by banks to encourage borrowers to make green investments and achieve sustainable development. In traditional trade credit financing, excessive carbon emissions are penalized. An important prerequisite for obtaining a green loan is that the borrower must make green upgrades and ensure

compliance with pre-defined environmental standards. By imposing strict limits on carbon emissions, governments can guide producers to make win-win choices by setting different caps on carbon emissions.

2.2. Green Bonds

Since their debut in 2007, green bonds have consistently shown steady growth in their market size and product market value. According to the Climate Bonds Initiative, by 2019, 1,788 global green bonds have been issued, with an issue size of US\$257.7 billion. In the future, it is necessary to further strengthen the innovative development of green financial products, further support the issuance and trading of bonds by brokerage firms and other financial institutions in the primary and secondary markets, and realize the leapfrog development of innovative financial products to support the sustainable development of the green ecological economy. At the same time, the financial attributes of the carbon market should also be strengthened, and the liquidity of the carbon market should be enhanced through carbon futures and other management tools.[2]

2.3. Blockchain Finance

Blockchain technology is widely considered to be one of the most promising and attractive technologies in many industries such as supply chain finance, production operation management, logistics management and the Internet. Among them, Bitcoin is almost the earliest and most mature market practice of blockchain technology applied in the field of digital currency. Key features such as decentralization, auditability and anonymity exist in Bitcoin, however, there are non-negligible energy consumption and carbon emissions associated with the current consensus algorithm in the actual operation of the Bitcoin network. In the future, the decentralized financial infrastructure represented by Bitcoin will add new momentum to green financial empowerment for carbon neutrality.

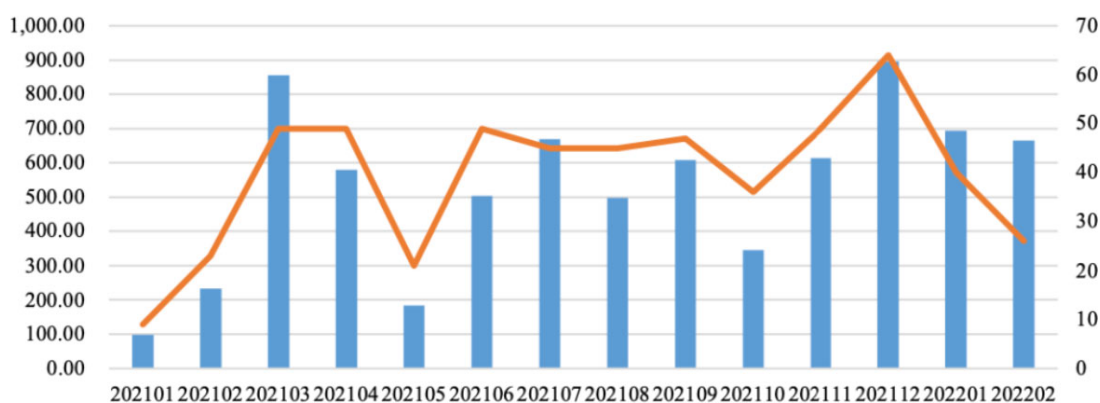


Figure 1. Monthly Issuance of Green Bonds in China (2021-)

(Data source: Wind Information)

3. Problems in the Process of Green Finance Supporting the Development of Low-Carbon Economy

3.1. Inadequate Green Finance Policies and Regulations

In order to promote the development of low-carbon economy and enrich the financing mode of enterprises, the state has introduced a series of policies and regulations in the field of green finance. However, at this stage, China's green finance policies and regulations are not comprehensive enough. Some policies and regulations simply state the framework of regulations without informative and feasible detailed plans, which leads to the inability of lower-level units to take concrete actions. In carbon emission mortgage and pledge financing, although relevant policies have been introduced to encourage enterprises to adopt this new type of financing for financing, they only remain under the surface of the initiative without continuing to clearly encourage the program. There are also some policies and regulations that are not well targeted, and the role of the target is not clear enough, resulting in poor policy effects. Green finance-related regulations lack the regulation policy for carbon trading prices, and there is no stable price regulation system for carbon trading, and it is impossible to compare the change of investment increment before and after the carbon emission reduction policy. At the same time, when the market environment fluctuates, the carbon trading price cannot be effectively adjusted in time, and the loopholes in the regulation policy are not conducive to the further development of carbon trading.[3]

3.2. Insufficient Green Financial Products

Achieving peak carbon emissions by 2030 and carbon neutrality by 2060 are landmark goals for China's low-carbon economy, requiring trillions of dollars in capital, and green finance is very important. Although green bonds and green credit have become an important part of China's green financial products with government encouragement, their maturity and scale are difficult to match the cycle and capital demand of low-carbon projects. The variety of green financial products affects the overall quality of green financial services, and abundant green financial products can help improve the

quality of green financial services and better promote the development of green finance. At this stage, China's green financial products need to be enriched, and the construction of carbon finance, green ABS, green leasing and other products must be accelerated. The policies and rules in the carbon finance market are not perfect, and products such as green insurance and green leasing are not active enough in the financial market. Apart from green bonds and green credit, other green financial products and services have not been promoted and applied on a large scale, and further strengthening is needed in this regard to better promote the development of local green finance and further support the exchange and cooperation between China and other countries in green finance.

3.3. Inadequate Environmental Information Disclosure System

A good environmental information disclosure system creates favorable external conditions for the development of green finance, but China's environmental information disclosure system is not yet perfect. For the time being, there are no clear provisions in Chinese laws and regulations stipulating environmental information disclosure rules, and even among listed companies with better information transparency, few companies disclose important environmental data such as carbon dioxide and sulfur dioxide emissions, and most of the environmental information disclosed to the public is qualitative information. Insufficient disclosure of important environmental information not only prevents the public from obtaining and green financial environment-related information, but also causes problems related to the enterprises themselves because they do not pay attention to and value the relevant information in a timely manner. Banks and other financial institutions are also affected by the disclosure of information. When assessing the environmental risks of enterprises, the results obtained are often biased due to the lack of environmental information; when pricing credit assets for enterprises, banks cannot make accurate decisions because some financial environmental data are not disclosed; when formulating credit policies for industries, they cannot be supported by the environmental data of the industry as a whole. It is impossible to do quantitative analysis and visual management.[4]

4. Policy Recommendations for Green Finance to Support the Development of Low-carbon Economy

4.1. Strengthen Forward-looking, Improve Relevant Laws and Regulations and Policy Standards

Although the development of green finance in China has made some achievements, it is still in the exploratory stage, which means that green finance still has great potential for development and upside, and can be developed to a new level in the future. In order to achieve the rapid development of green finance as well as the sustainable development of society, it is necessary to strengthen foresight, strengthen legal constraints and institutional arrangements through clear legal policies, fully reflect the importance of energy conservation and emission reduction policies, rationalize the use of natural resources, strive to improve environmental efficiency and promote green development. The revision of relevant laws and regulations should not only include the consideration of green finance and green industry development, but also refine the consideration criteria in order to make full use of policy tools to promote low-carbon economic development. In order to achieve the goal of sustainable development of the environment, the legal attributes of environmental rights and interests such as carbon emission rights and emission rights should be regulated, and the professionalism of the legislature and legal staff should be strengthened to improve the efficiency of law and regulation enforcement. In addition to the regulations on carbon emission rights and emission rights, it is also necessary to clarify the property rights of natural resources so that enterprises can make reasonable use of natural resources in the process of promoting green finance and give full play to the role of green finance to support the development of low-carbon economy. Accelerate the study of service standards characteristic of green financial products, improve the common basic standards for green financial products and credit rating standards, revise the green financial performance evaluation system in accordance with market changes and industrial development, and formulate the rules of the trading market system and relevant standards for the green financial market.

4.2. Innovate Product Services and Establish A Multi-level Green Financial Market System

Although China's existing green financial products include green credit, green bonds, green insurance, green funds and carbon finance, etc., they are still not abundant enough, the investment of the main products is not extensive enough, and the amount of investment is not up to the expected amount, and the amount of green financial products emerging in the late stage in the market is not up to the standard. It is necessary to increase the market volume of existing green financial products, broaden the scope of use, deepen the depth of green financial services for low-carbon economy, and be the active leader of green financial development. Accelerate the construction of carbon financial market, innovate the product usage of green financial products such as green asset securitization, green asset-backed notes, carbon forwards, carbon futures and carbon options, continuously improve the service quality of green financial products, and form a mature

green financial industry chain. On the basis of some product pilots, gradually establish a national standardized and unified trading market for relevant green financial products, establish a secondary financial market in line with the characteristics of green assets in due course, and build a national orderly and efficient, standardized and unified, two-party and multi-party trading platform for products and services. Strengthen the development of professional institutions of green finance, and take the platform of professional institutions as a support point to be a powerful promoter and defender of green finance development. Strengthen the promotion and application of financial technology and digital technology, and increase the application of both in environmental information disclosure and environmental information sharing.

4.3. Improve Information Transparency, Clarify the Responsibilities of Various Subjects and Market

Functioning in the face of environmental information opacity and financial information asymmetry, it is necessary to strengthen the control of information disclosure rules. Unifying information disclosure requirements and formats facilitates disclosure subjects to provide standard and qualified disclosure reports, which are conducive to investors to draw the required information. Strengthen the awareness of information disclosure responsibilities of relevant subjects and enhance the information disclosure initiatives of enterprises, listed companies and other subjects from the inside out. Increase the penalties for information disclosure violations and raise the cost of violations. For financial institutions, they should apply their professional skills to conduct risk tests on the market environment, create green financial products and cultivate various professional green financial service institutions; for real enterprises, they should strictly implement environmental regulations and environmental standards, comply with carbon market compliance commitments and manage green assets; for the public, they should supervise the government's environmental regulatory behavior, monitor enterprises' substandard behavior on environmental indicators, raise Green consumption awareness, and increase support for green transportation, green investment and green buildings.^[5]

5. Conclusion

The development of green finance is the key to solving the market failure and preventing the risk of climate change, and also the core of leveraging social capital to support the low-carbon economic transformation. The development of green finance is an important measure to realize the low-carbon economic transition on the road to green development. Through innovative financial system arrangements, build a green financial system, use the regulatory role of the market, provide channels to guide social capital to invest in green industries, further strengthen innovative capital, markets, talent and other factors to support the cultivation and growth of green low-carbon technology innovation main body. Promote the transfer and transformation of green patents and promote the green development of industries.

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