

A Study on the Research Path of Green Financial Innovation and Development in China

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Abstract: The development of green finance is an important part of China's economic transformation and green development. At present, China's green finance is in a stage of continuous development and improvement, but also facing the development dilemma of insufficient awareness of green finance, insufficient product innovation, imperfect legal system and scarcity of professional talents, etc., it is necessary for the government and financial institutions to work together, perform their duties, break the dilemma one by one, and create a fair, safe, orderly and standardized development environment for green finance, so as to better encourage more institutions and individuals to participate in it and promote the sustainable development of green finance.

1. Introduction

China's economy has witnessed rapid development after the reform and opening up, and China has now entered a critical period of green economic transformation, with the development of green industries and the transformation and upgrading of non-green industries all having an increasing demand for capital. In order to further implement the sustainable development strategy, the concept of green finance has emerged in China. In recent years, with the growing scale of green credit and green bonds, China's green finance has developed rapidly, but due to the late start, China's green finance is still in the primary stage, and there are still many problems in the cultivation of talents, regional development and legal system construction. In view of this, this paper will take the current situation of green finance development as the main research object, discuss the innovative development countermeasures of green finance through both internal and external perspectives, propose innovative development paths suitable for the current situation of green finance in China, and promote the steady development of China's green finance market.

2. Green Finance Related Concepts

2.1 Green Finance Concept

There are two main interpretations of the concept of green finance: First, it refers to the financial industry's investment in environmental causes to promote sustainable economic and social development, with a focus on the financial industry's role in supporting and regulating green development. Secondly, it refers to the sustainable development of the financial industry itself, with its focus on the industry's own ability to achieve sustainable development. Regarding the definition of green finance, the 2016 G20 Green Finance Report proposed that "green finance is an investment and financing activity that generates environmental benefits to support sustainable development."^[1] The Guidance on Building a Green Financial System released in the same year proposed that "green finance refers to economic activities that support environmental improvement, climate change and the economical and efficient use of resources, i.e. financial services provided for project investment and financing, project operation and risk management in the fields of environmental protection, energy conservation, clean energy, green transportation and green buildings. " This is by far the most authoritative interpretation from China's official institutions, the interpretation is similar to the

first interpretation, which emphasizes that the essence of green finance is the support and regulation role of the financial market for green development, guiding resources in economic activities to protect the environment and promote sustainable development-related fields, mainly playing the role of regulation and leverage to promote green development.

2.2 Current Status of Domestic and International Research on Green Finance

2.2.1 Status of Foreign Green Finance Research

Salazar proposed that green finance makes economic development and environmental improvement, and is an innovative move for the financial industry. ^[2] Cowan believes that green finance is a product of the organic combination of finance and sustainable development. ^[3] Gray believes that the focus of green finance is to incorporate social and environmental factors into the financial system and to ensure that they do not conflict with the original principles of the financial system. ^[4] H. hne et al. argue that the concept of green finance is dynamic and evolves with changes in sustainability projects, environmental policies, etc. ^[5] Cui & Huang point out that the Green Climate Fund (GCF) is currently facing a shortage of funds and with the decision of the US to “withdraw”, the burden on other financial donors has increased, especially the share of the EU contribution is expected to increase to nearly 14%. ^[6] Barclays and Accenture argue that in order to achieve green investment and financing, financial institutions need to provide more attractive financial programs for green transformation and innovation than traditional programs to ensure that companies have sufficient capital for expansion and transformation, but there are currently significant barriers to the realization of these elements in the market mechanism. ^[7] In summary, foreign scholars believe that the most significant impediments to the development of green finance at present are funding and policy issues, which are in urgent need of improvement.

2.2.2 Status of Domestic Green Finance Research

Domestic scholars have done a series of studies on the necessity of developing green finance, which are roughly divided into two perspectives: one is to put forward the importance of developing green finance from the seriousness of environmental pollution problems. Due to the high pollution industrial structure, energy structure and transportation structure in China, the environmental pollution problem in China is very serious, and a series of financial means are needed to make the economic structure, energy structure and transportation structure greener; secondly, the development of finance itself cannot be separated from the development of green finance. Adverse environmental events may have a negative impact on the financial industry, leading to a decline in the profitability of customer investments.

2.3 Prospects and Space for the Development of Green Finance in China

2.3.1 The Scale of Green Credit is Expanding

In terms of scale, by the end of 2021, China's green loan balance in domestic and foreign currencies was RMB 15.9 trillion, up 33% year-on-year, ranking first in the world in terms of scale. Green credit, as an important green financial instrument, accounts for up to 90% of all green financial products. ^[8] In terms of asset quality, the overall quality of green credit assets in China is good, with the overall non-performing loan ratio of China's banking industry roughly around 2%, while the non-performing loan ratio of green credit has remained below 0.7% in the past five years. In terms of environmental benefits, green credit from 21 major banks in China can support the saving of more than 300 million tons of standard coal and the reduction of more than 700 million tons of carbon dioxide equivalent per year. (Data source from China News Network)

2.3.2 Great Prospects for Green Bonds

In terms of scale, China's green bonds are issued on a large scale. By the end of 2020, the total amount of green bonds issued was about 1.2 trillion yuan, ranking second in the world. From the perspective of issuance period, the issuance period of green bonds in China is long, and the green bonds with issuance period of more than 3 years account for about 90%. In terms of environmental

benefits, projects invested in green bond funds can save about 50 million tons of standard coal per year, which is equivalent to reducing carbon dioxide emissions by more than 100 million tons. (Source: Golden Investment Network) As an important green financial instrument, the future development of the green bond market will show the trend of diversified issuing entities, increased proportion of RMB issuing bonds and increased market coverage of green bonds..

3. Analysis of the Current Situation of Green Finance in China

3.1 Internal Analysis

3.1.1 Lack of Talents in the Field of Green Finance

Talent is the fundamental guarantee for the innovation and development of green finance. Green finance is a comprehensive professional discipline that covers environmental protection and finance, and the development of green finance needs composite professional talents. However, because of the late start of green finance in China, the cultivation of related talents is relatively lagging behind. First, universities do not pay enough attention to cross-disciplinary teaching, and the cultivation of comprehensive talents is not in place. Secondly, financial institutions lack training for practitioners, and employees' knowledge of green finance is weak. Third, the introduction of foreign outstanding talents is not enough, which is not conducive to the construction of green financial talent team.

3.1.2 Low Degree of Greening of Financial Institutions

“The Equator Principles are a set of voluntary principles designated by a group of private banks in June 2003 to identify, assess and manage the environmental and social risks involved in the process of project financing. “The Equator Principles require financial institutions to exercise due diligence in verifying the environmental and social aspects of project financing over \$10 million, and are a powerful tool for the development of green finance. At present, there are only six banks implementing the “Equator Principles” in China: Bank of Jiangsu, Industrial Bank, Huzhou Bank, Chongqing Agricultural and Commercial Bank, Guizhou Bank, Mianyang Commercial Bank and Bank of Chongqing, and all other commercial banks in China participate in the green finance industry according to their own wishes. On the one hand, the weak awareness of green finance development and the lack of responsibility to achieve sustainable development among financial institutions in China have led to the low participation of each financial institution in the green finance market. On the other hand, the internal system assessment of financial institutions in China has not yet set up an incentive mechanism for green finance business, which inhibits the motivation of practitioners.

3.1.3 Insufficient Environmental Risk Analysis and Assessment Capability

Environmental risk has become one of the major sources of financial risk. China's financial institutions have not yet built a systematic environmental risk rating system, making it difficult to assess the risks of green finance projects. The development of environmental risk analysis in China still faces the following obstacles: first, financial institutions do not invest enough in environmental risk analysis, and commercial banks in China still follow the assessment methods of general loans when conducting risk assessment of green loans, with insufficient innovation; second, there are various problems with the data used in quantitative analysis, resulting in a significant loss of credibility of environmental risk analysis.

3.2 External Analysis

3.2.1 Uneven Regional Development of Green Finance

Since 2017, China has been building green finance innovation and reform pilot zones in six provinces and nine regions in Zhejiang, Jiangxi, Xinjiang, Gansu, Guangdong and Guizhou. Although all regions in China actively explore and encourage the development of green finance, the overall development status shows that the regional development of green finance in China is unbalanced. The development of green finance is faster in the eastern and central regions, and lags

behind in the western and northeastern regions ^[9], where the development of green finance in some regions is still at the concept stage.

3.2.2 Incomplete Green Finance Policy and Legal System

Because of the late start of green finance in China, the recognition standards for some green projects have not yet reached unity, for example, the recognition standards for green bonds differ between the Guidelines for Green Bond Issuance and the Catalogue of Green Bond Support Projects. The relevant legal and regulatory system is also not sound, and the development of green finance lacks legal support. On the one hand, green finance lacks authoritative high-level legislation. Although China has introduced many policies and regulations related to green finance, they are mostly non-mandatory departmental regulations issued by one or three committees and the Ministry of Environmental Protection, rather than regulations formulated by the National People's Congress and its Standing Committee, which lack national authority. Due to the lack of national laws and regulations, the process of standardization of China's green finance market is very slow. On the other hand, the existing policy system lacks enforceability, and the existing legal system of green finance in China does not make relevant provisions for specific operations, which makes the enforcement process lack operability and hinders the development of green finance.

3.2.3 Green Financial Incentive Mechanism is Not Perfect

Although China has been advocating high-quality economic development in recent years, the development speed of GDP and annual indicators are still important indicators for assessing the performance of local government officials in China, and in order to achieve the GDP target, local leaders may prefer to invest in the construction of industrial projects with high pollution and quick returns, and despise green financial projects with high investment and slow results, which leads to the lack of government incentives for green financial. This leads to a lack of government incentives for green finance. China's current green finance incentive method is single, mainly subsidies, which is not conducive to improving the enthusiasm of all parties involved in the green finance market, and to a certain extent, causes the lack of follow-up power for the development of green finance in China. 2021 Central Bank Work Conference put forward the important task of implementing the major decision and deployment of carbon peaking and carbon neutral, and improving the policy framework and incentive mechanism of green finance. At present, China's green finance has not yet formulated relevant incentive policies for carbon neutrality, which is not conducive to the achievement of carbon neutrality goals.

3.2.4 Lack of Regulatory Coordination in Green Finance

With the rapid development of green finance in China, the existing regulatory mechanism cannot meet the increasingly strict regulatory requirements, and the lack of regulation has become an important obstacle to the development of green finance in China. As green finance involves a wide range of fields and complex regulatory bodies, there are problems of mutual shirking and insufficient coordination and communication among all parties in the regulatory process, making it difficult to form a strong synergy to regulate green finance as a whole, which is the root cause of the proliferation and indulgence of the phenomenon of “greenwashing”. In terms of information disclosure, due to the lack of environmental information disclosure by enterprises, third-party evaluation agencies are unable to make accurate evaluation of the environmental benefits of enterprises, and financial institutions are unable to obtain effective financing needs of enterprises, which is not conducive to the development of green finance business by financial institutions. At the same time, financial institutions do not disclose enough information about the use of funds for green credit business, which cannot meet the requirements of public supervision and is prone to the risk of “greenwashing”.

4. Measures for the Development of Green Finance Innovation in China

4.1 Internal Means

4.1.1 Cultivate and Introduce Professional Talents in the Field of Green Finance

The innovative development of green finance needs a large number of compound talents in related fields. Cultivating compound talents in green finance can be started from three perspectives: first, universities should create green finance majors and actively cultivate comprehensive talents with comprehensive knowledge of finance and environment; second, green finance business training should be actively carried out within financial institutions to improve practitioners' awareness of green finance development; third, overseas experienced green finance professionals should be introduced to promote the green finance talent team construction, provide impetus for the innovation of financial products, and promote the diversification of green products.

4.1.2 Incorporating Green Finance Business into the Internal Assessment System

To develop green finance well, financial institutions need to improve their internal organizational forms and rules and regulations. On the one hand, financial institutions should establish the consciousness of green development, actively undertake the mission of sustainable development, organically combine their own interests with the responsibility of environmental protection, and increase the investment in green financial business. On the other hand, financial institutions should incorporate green financial business into the performance assessment system, establish green financial assessment, reward and punishment mechanisms, and explore the construction of internal franchise departments to mobilize the enthusiasm of employees.

4.1.3 Improve the Level of Environmental Risk Analysis and Assessment

Banks should set up separate environmental risk assessment departments, collect environmental information of enterprises, innovate risk analysis tools, actively carry out environmental risk stress tests, quantify the environmental risks of projects, and facilitate the supervision and management of the projects in the future. In addition, government departments should disclose the environmental data in their possession to reduce the cost of data collection for financial institutions, and process the disclosed environmental data and disclose the data as a unit of enterprises to make it meet the requirements of financial institutions for quantitative risk analysis, ensure the accuracy of the data, and make the results of environmental risk analysis for financial institutions credible.

4.2 External Means

4.2.1 Promote the Coordinated Regional Development of Green Finance

The state can carry out a help program to drive the development of neighboring provinces through the eastern and central provinces and regions with better development of green finance, guide the neighboring provinces to formulate relevant policies in accordance with the current situation of economic development in the region, form a talent exchange forum to promote exchanges and mutual assistance between the east and the west, and at the same time adjust the regional proportion of green finance subsidy funds so that the funds will be more offset to the western and northeastern regions to promote the common development of green finance regions.

4.2.2 Improve the Legal System of Green Policies

On the one hand, the state should improve the existing green financial standards in China so that the green financial standard system can be unified. Use the authoritative green project catalog to ensure that this standard can be applied to all green projects, and then make the unified understanding formed in the market for each financial product to guarantee the reliability and objectivity of China's green financial standards. On the other hand, the country should introduce some legal policies with higher level, broader coverage, more specific and stronger legal effect, improve the systematic legal system, provide authoritative legal guarantee for the development of green finance, and guide the progress of green finance by compulsory means, while supplemented

by the normative system formulated by government departments, so as to jointly promote the development of green finance by both soft and hard means.

4.2.3 Improve the Incentive Mechanism of Green Finance

Although China has introduced a series of incentives from the central bank on green refinancing and so on, the implementation effect is not obvious, and China still needs to continue to improve the incentive mechanism. According to the characteristics of green financial projects, we should formulate targeted incentive measures, such as financial subsidies and priority compensation of green assets' rights and interests; encourage financial institutions to innovate green financial instruments and actively participate in the green financial market. At the same time, China should implement tax incentives as soon as possible. On the one hand, tax incentives for green financial projects can improve the return on investment, motivate investors to actively participate in the green financial market and encourage more capital to flow into the green financial field; on the other hand, the construction of a green tax system based on environmental protection tax can promote enterprises to increase environmental protection investment and promote green transformation of enterprises.

4.2.4 Improve the Green Financial Regulatory System

On the one hand, in order to reduce policy differences and overlaps among relevant regulatory departments, relevant departments should strengthen coordination and communication, clarify the specific responsibilities of each department, and set up an effective coordination system. The central bank should play a leading role in coordination, set up a leading group, strengthen the contact with various regulatory departments, help clarify the rules and regulations of each department, and make the responsibilities between departmental regulation concise and effective. On the other hand, it should be mandatory for enterprises and financial institutions to disclose environmental information on a regular basis to ensure information symmetry among enterprises, financial institutions and regulators, increase market transparency, accept external supervision, and prevent the risk of "greenwashing".

5. Conclusion

China's green finance started late and in the current development process, there are still internal problems such as lack of talents, low greening of financial institutions, insufficient capacity of environmental risk analysis and assessment, and external problems such as unbalanced regional development of green finance, unsound green finance policy and legal system, insufficient strength of government incentives and lack of regulatory constraints on green finance, which together restrict the development of green finance. To promote the further development of green finance, it is necessary to improve the current shortcomings of green finance development from both internal and external perspectives. Firstly, from the internal perspective, it is necessary to promote the development of green finance by training and introducing professionals in the field of green finance, improving the innovation of green finance, incorporating green finance business into the internal assessment system, motivating financial institutions to actively participate in the green finance market, improving the level of environmental risk analysis and assessment, and guaranteeing the credibility of environmental risk analysis of financial institutions. To promote the innovative development of green finance, it is also necessary to start from an external perspective, to promote the coordinated regional development of green finance by weakening the differences in regional energy consumption structures and carrying out regional assistance programs, to improve the legal system of green finance by formulating unified standards for green finance and introducing high-level laws, and to improve the regulatory system of green finance by strengthening supervision and improving the information disclosure system and restraint mechanism, so that green finance can develop steadily.

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