

# Research on Green Finance in Support of Green Economic Development

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**Abstract.** Under the double pressure of realizing economic recovery and coping with climate change, countries have put forward green development strategies, and the green economy is developing rapidly, representing a new trend in international economic development. China is also making strategic choices to accelerate economic transformation and upgrading. Vigorously developing green finance, boosting the sustainable development of clean energy and low-carbon technology upgrading and upgrading, in order to effectively break through the bottleneck constraints of resources and environment, and to take the initiative and favorable position in the long-term economic and social development. This paper analyzes the current situation of China's green financial development, explores the problems of green finance in supporting the green development of the economy, and finally puts forward feasible suggestions in a targeted manner.

**Keywords :** green finance, clean energy, low carbon technology, green development

## 1. Introduction

The pursuit of green development is the core task of economic construction in the new development stage, an inherent requirement for achieving sustainable development, and an inevitable requirement for building a high-quality modernized economic system<sup>[1]</sup>. The report of the 20th Party Congress points out: "Respecting nature, adapting to nature and protecting nature are the inherent requirements for building a modern socialist country in an all-round way. Improve the fiscal, taxation, financial, investment, price policies and standard systems that support green development." In the context of the country vigorously advocating green development, green finance, as a unique operation mechanism and resource allocation mode of green economy, green finance emphasizes the survival and environmental interests of human society, takes the degree of effective use of environmental protection and resources as one of the criteria for measuring the effectiveness of its activities, and guides economic entities to pay attention to the balance of natural ecosystems through its own activities, and has become an important force to support the green economic transformation and upgrading. Green finance has become an important force to support the green transformation and upgrading of the economy. In recent years, China has attached great importance to green development, emphasized the development of modern service industry, actively cultivated emerging industries, and continuously expanded economic growth points. At the same time, the green financial business of banks in various provinces has also achieved rapid development, with green finance as a specialty business, increasing the support for the development of local green industries, and helping the economy to develop in a green and low-carbon way and to innovate, transform and

upgrade<sup>[2]</sup>. How to effectively protect the ecological environment in China, the scientific and reasonable coordination of the distribution of social production resources, the use of green finance to effectively promote the green development of the economy has become a new development stage should think about the problem.

## 2. Status of green finance and economic development in China

### 2.1 the status of economic development

As China's economy and society resume normalized operation, the economy rebounded in the first quarter, achieving a good start; the second quarter to continue the recovery trend, but the growth rate of exports, industrial profits and other indicators slowed down, economic activity weakened. In the global economic growth slowdown, China's economy has maintained a "stable" trend.

Looking around the world, geopolitical tensions intensified, global inflation fever does not subside, the United States and Europe central banks continue to tighten monetary policy<sup>[3]</sup>. International Monetary Fund expects the next five years, the global economic growth rate will be hovering around 3%, at a low level in nearly 30 years. Then look at China, the first half of the restorative growth trend is obvious. From the data in Table 1, it can be seen that in the first half of the year, the gross domestic product increased by 5.5% year-on-year, which is significantly faster than the economic growth rate of 3% for the entire year last year and 4.5% for the first quarter; total retail sales of consumer goods grew by 8.2% year-on-year, accelerating by 2.4 percentage points compared with that of the first quarter, and the contribution rate of final consumption expenditures to economic growth reached 77.2%, which is significantly higher than that of last year; the three industries have continued to recover. Employment and prices are generally stable, and the size of foreign exchange reserves has stabilized at more than 3.1 trillion U.S. dollars. The industrial structure has been continuously optimized and upgraded, and the new kinetic energy for high-quality development has continued to strengthen.

But specifically, the foundation of recovery is still not solid, and more efforts are needed to promote a sustained economic recovery. Aggregate demand is still insufficient, and economic transformation and upgrading are facing new resistance; the total employment pressure and structural problems cannot be ignored, and the employment pressure on young people is still large; the profits of industrial enterprises have declined, and small and medium-sized enterprises in some industries are having difficulties in their operations, with prices continuing to run at a low level, and the development and construction of real estate is still relatively sluggish.....

**Table 1:** National Accounts

Nom	Aggregate Indicator				Exponents(%)			Average growth rate(%)	
	1978	2000	2020	2021	1978	2020	2021	1979-2021	2001-2021
Gross national income (billions of dollars)	3678.7	99066.1	1005451.3	1133239.8	4296.9	572.2	108.0	9.1	8.7
Gross national product (billions of dollars)	3678.7	100280.1	1013567.0	1143669.7	4336.5	570.4	108.1	9.2	8.6
Primary sector of industry	1018.5	14717.4	78030.9	83085.5	632.7	229.7	107.1	4.4	4.0
Secondary sector of industry	1755.1	45663.7	383562.4	450904.5	6496.3	605.7	108.2	10.2	9.0

Norm	Aggregate Indicator				Exponents(%)			Average growth rate(%)	
	1978	2000	2020	2021	1978	2020	2021	1979-2021	2001-2021
Tertiary sector of industry	905.1	39899.1	551973.7	609679.7	6277.5	654.8	108.2	10.1	9.4
GNI per capita (yuan)	385	7846	71253	80237	2909.0	511.5	107.9	8.2	8.1

## 2.2 Development of green finance

In recent years, China has carried out a series of explorations on ecological environment, green energy, low-carbon technology and green industry, and the green development of the economy has achieved certain results. At the same time, China is also actively looking for green financial development programs, so as to boost technological upgrading, industrial renewal and transformation.

As China and the international community pay more attention to green finance as a new market, the research and development of products and services related to green finance will become more and more important. From the policy level, the development of green finance has been strongly supported by national policies. In October 2017, the State Council issued the Action Plan for the Development of Green Finance in China, which specifies the goal of promoting the development of green finance and establishes a complete set of systems. Meanwhile, various provinces and cities across the country are also preparing to strengthen their respective efforts in green finance development under the guidance of the central government's policies to form a synergy. In terms of changes in market penetration, the development of the green finance market in general has made great progress. Based on years of statistical data on the development of national green finance and the National Green Finance Index from 2010 to 2022 shown in the figure, it can be seen that China has successfully established a system for building basic financial institutions and promoting the development of green finance. Some financial sub brands have played a good role in the field of green finance, and a pattern of leading opportunities and market development in the country is gradually being cultivated and formed, and indicators such as market penetration rate have correspondingly increased to a higher level. It can be said that the overall development of green finance in China has achieved good results. From the perspective of technological innovation, green finance has made certain progress in technological innovation. With the increase in demand for green financial products and services, environmentally friendly financial-related technologies have also been widely used, and social research on green finance has attracted a considerable degree of attention, and the relevant research and application are being continuously deepened, while new green financial products and services are also emerging, and the financial market has synchronized with the emergence of a strong investment trend, which can be seen that the application of new financial technologies in green finance and environmental protection is playing an increasingly important role<sup>[4]</sup>. It can be seen that the application of new financial technology in green finance and environmental protection is playing an increasingly large role, and technological innovation is also in a trend of continuous development.

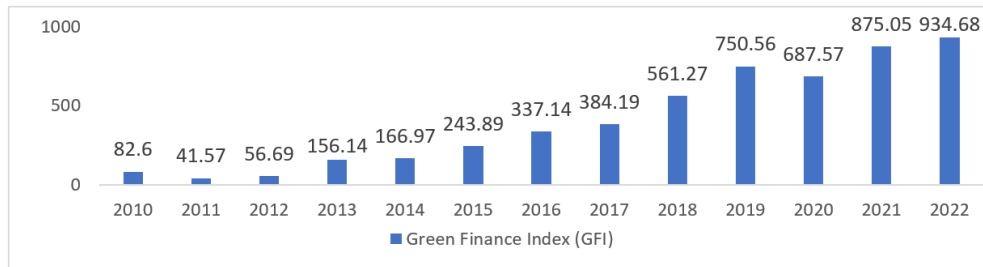


Figure 1: National Green Finance Index, 2010-2022

### **3. the main problems and challenges of green finance to support the green development of the economy**

#### **3.1 Green credit growth is slow, the strength of the main body of the loan is weak, and there is insufficient energy for green development.**

The economic situation is affected by the spread of epidemics and the fluctuation of the international situation, the profitability of some enterprises has been reduced, the collateral risk capacity is weak, and the applicability of innovative credit products such as the pledge of future income rights is poor. At the same time, the growth rate of enterprises' earnings is low, green technology is not mature enough, and the enterprises' ability to take on loans is weak and has not reached the threshold of credit access. Banks facing such a situation may reduce funds for green credit purposes, thus affecting the process of green development in China and forming a vicious circle<sup>[5]</sup>.

#### **3.2 The quality of credit team personnel is difficult to support the development of green finance, and the ability of business innovation needs to be improved.**

All aspects of the green credit business are inseparable from the knowledge of finance, industrial policy and environmental science, and require composite talents who are familiar with environmental protection policies, understand credit risk management, and have experience in the financial industry and an educational background in environmental science. China's banks have sufficient financial professionals, but there is a lack of environmental protection and financial composite talents. At present, only a few banks, such as state-owned commercial banks and Industrial Bank of China, have set up specialized green credit departments, while most of the other banks have part-time management of green credit business by personnel from various departments, who do not have in-depth understanding of green industry policies, green credit policies and laws and regulations related to environmental protection, and limited ability to assess the risk of environmental and ecological projects, thus giving the green credit operation limited ability to assess the risks. They have limited ability to assess the risks of environmental and ecological projects, which makes green credit operation and management difficult.

### **3.3 Green credit assessment and supervision mechanisms need to be further improved, and the internal and external environment needs to be optimized.**

The healthy development of green credit in China requires full communication among commercial banks, credit enterprises and government departments. However, due to the imperfection of the information disclosure and communication mechanism of the three, the problem of information asymmetry is prominent, the enterprise information disclosure lacks initiative, and is prone to selective concealment, misreporting, and the destination of the funds is not clear, and there are deficiencies in the supervisory mechanism of green credit<sup>[6]</sup>.

At present, although China has introduced environmental laws on green credit, most of the relevant documents are constructive and guiding opinions, without clearly delineating the responsibilities and legal obligations of commercial banks, credit enterprises and environmental protection departments. At the same time, existing laws and regulations lack strong legal effect and effective constraints, and punitive measures have not been fully implemented at the legislative level, which has become an important factor restricting the development of green credit.

## **4. Further Thoughts and Suggestions on Green Finance in Support of Economic Green Development**

### **4.1 Give full play to the synergistic effect of the government, enterprises and banks to boost the green development of the economy**

China should give full play to the synergistic effect of the government, banks and enterprises, through the government to set the stage and enterprises to sing, to promote the government, banks and enterprises to exchange and cooperation and resource docking, to further boost the confidence of the development of enterprises, and to realize the complementary advantages, information sharing and win-win situation, and to jointly serve the green economy.

First, the relevant government departments should serve the overall situation, take the initiative to play a role, give full play to the role of the bridge and link between the government, banks and enterprises cooperation, fully implement all kinds of green development policies, to provide policy guidance and economic support for the green development of enterprises; second, I hope that the bank based on their own responsibilities, focusing on the needs of enterprise development, and continue to strengthen the green financial services, and enterprises to establish a good relationship of mutual trust, interaction and mutual benefit, for the new green enterprise development. The third is that enterprises should seize the opportunity to seek development, continuously strengthen business management, improve enterprise credit rating and risk management capabilities, and strive to obtain green credit investment from banking institutions, and strive to push government-bank-enterprise cooperation to a deeper level to achieve a win-win situation for all three parties.

### **4.2 Innovate green financial products and develop green carbon trading market**

At present, green financial products in the Chinese market include credit, deposits, public funds, bonds and other types, financial institutions should develop innovative green financial products according to market demand, further promote the construction of China's multi-level green

financial products and market system<sup>[7]</sup>. According to the data and growth rate changes in Table 2, while providing investors with new investment channels, it is necessary to accelerate the integration of regional carbon finance markets, mobilize more funds to flow to low-carbon, environmental protection, renewable energy and other fields, and support green development.. In addition, the development of the carbon trading market should be further strengthened, and the R&D and design of carbon market trading tools, carbon market financing tools and carbon market support tools should be enriched, so as to help enterprises reduce the risks they bear and face in the green transformation, guide industrial upgrading, promote green innovation, promote the changes in the fields of energy structure, industrial structure, and green technology, and realize the soft landing of carbon peaking and carbon neutralization.

**Table 2:** Economic and Social Development Statistics Chart: Economic and Social Development Achievements since the 18th National Congress of the Party (Green Development Chapter)

Norm	Unit (of measure)	Absolute volume in 2012	2021		Average growth rate, 2013-2021 (%) [cumulative]
			Absolute amount	Increase over previous year (%)	
<b>Energy use</b>					
Share of clean energy, such as natural gas, water, nuclear, wind and photovoltaic, in total energy consumption	%	14.5	25.5	1.2(percentage point)	[11.0](percentage point)
Share of clean energy such as natural gas, hydro, nuclear, wind and photovoltaic in total energy production	%	15.3	26.4	0.7(percentage point)	[11.1](percentage point)
Reduction rate of energy consumption per unit of GDP	%	3.7	2.7	-	[26.4]
<b>Environmental quality</b>					
Proportion of average good air quality days in cities at prefecture level and above nationwide	%	81.2①	87.5	0.5(percentage point)	[6.3](percentage point)②
Percentage of cities at the prefecture level and above that meet air quality standards nationwide	%	29.6①	64.3	4.4(percentage point)	[34.7](percentage point)②
Average fine particulate matter (PM2.5) concentration	Vickers /m <sup>3</sup>	46①	30	-9.1	[-34.8]②
Proportion of surface water sections with good quality (Class I-II)	%	61.6	84.9	1.5(percentage point)	[23.3](percentage point)
Percentage of the area of near-shore marine waters whose water quality meets national water quality standards for Type I and Type II waters	%	72.9③	81.3	3.9(percentage point)	[8.4](percentage point)④

Note: ① is the data for 2015 ② is the change from 2015 in 2021 ③ is the data for 2016 ④ is the change from 2016 in 2021

#### 4.3 Improve the bank's green financial supervision mechanism and strengthen the green financial environment construction

First, strengthen the bank's internal green supervision, improve the relevant policy system and process management, establish a green credit review system, from the declaration of green projects for the record to the direction of the use of green investment and financing funds to establish a rigorous assessment system, supervise the direction of the use of funds and the impact of the results, to ensure that the green financing funds are invested in the real green projects.

Secondly, to improve the green financial governance system and enhance the level of environmental information disclosure, banks urge their clients to strengthen environmental, social and governance risk management by improving the contract terms, strengthening business management, and formulating and implementing targeted management measures for clients with potentially significant environmental, social and governance risks<sup>[8]</sup>. At the same time, a green finance environmental information system has been established to incorporate corporate environmental violations and other information into the basic database of corporate credit information, providing a professional basis for credit certification of enterprises and projects as well as for financial institutions to carry out green credit and investment decisions.

## 5. Conclusion

At present, China's economic development is facing the constraints of internal growth mode transformation and external international emission reduction tasks, and accurately grasping the green development is an important premise for transforming the economic growth mode in order to rapidly promote the goal of carbon peak and carbon neutrality, and also an indispensable and important link for realizing the harmonious coexistence of man and nature. China needs to focus on solving the main challenges facing green finance in support of green economic development, and gradually implement feasible recommendations so as to realize the sustainable development of a green economy.

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