

# *Research on the Strategy of Green Finance and Economic Development in China*

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**Abstract**—The purpose of this paper is to point out the problems existing in the development of green finance. This paper first analyzed relevant policies of green finance in China, then discussed the current situation of green finance development from the perspective of the environment and society. Finally, it puts forward corresponding countermeasures and suggestions for existing problems, hoping to provide some reference value for the development of green finance in China.

**Keywords**—Green Finance; Economics; Development; Strategy

## I. RESEARCH BACKGROUND AND SIGNIFICANCE

Since China's reform and opening-up, the economy has developed rapidly, with its competitiveness among the international community increasing. However, in the process of China's rapid economic development, environmental problems such as resource depletion and air pollution are becoming more and more serious [1]. The main reason for this phenomenon is that China's industry is still in an extensive stage. The continuous occurrence of economic crisis and financial crisis makes the financial industry realize the importance of sustainable development. The development of green finance is not only the requirement of sustainable economic development but also the demand of the financial industry's development. Governments and banks at all levels have introduced corresponding policies and measures to encourage the development of green finance, and green finance has developed rapidly. However, the development of green finance also faces many problems. In addition, funds other than bank credit may flow to industries with high pollution and energy consumption instead of bank funds. Therefore, it is a difficult problem for the development of green finance to establish a sound working system. In response to environmental problems, the Chinese government has put forward the road of sustainable development. Green finance is not only the requirement of sustainable economic development but also the demand of industrial structure development and financial industry development [2].

From the perspective of resources and environment, the rapid development of China's economy in recent years has brought severe problems to the ecological environment. Green finance is not only the focus of financial innovation and development but also the demand for green economic development. Green finance takes the environmental protection industry as the service object, drives the green development of industry as the purpose, and promotes the coordinated development of economy and ecological environment. The

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deepening development of green finance is of considerable significance to the optimization and upgrading of industrial structure and the sustainable development of economy. Green finance is also new energy and a new direction of sustainable economic development in China.

## II. INNOVATION AND DEFICIENCY OF RESEARCH

### A. The innovation of this paper

In our country, the research on green finance mostly focuses on qualitative research, lacking quantitative research [3]. Therefore, based on previous studies, this paper analyzes the current situation of green finance from the aspects of environment and society and quantitatively analyzes the development level of green finance in some provinces in China.

### B. Shortcomings of this paper

Due to the late development of green finance in China and the imperfect information disclosure system, the data collection in this paper started in 2010, and the research on green finance has made a particular impact on the optimization of industrial structure.

## III. THE CURRENT SITUATION OF GREEN FINANCE IN CHINA

### A. Analysis of the current situation of green finance development from environmental factors

As for the definition of green finance, the main goal of green finance is to minimize emissions. This paper analyzes the current situation of the development of green finance and selects the unit energy consumption of GDP to measure resource consumption [4]. Industrial wastewater, waste gas, solid waste and other pollutants are the primary pollutants in industrial production. Therefore, to analyze the environmental pollution level, the emission of industrial wastewater, waste gas and solid waste per unit GDP have been selected. The specific analysis is shown in Fig.1.

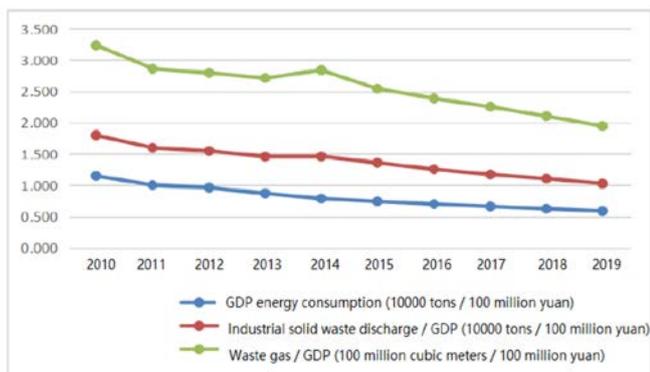


Fig.1. Energy consumption per unit of GDP and pollutant emission from 2010 to 2019

Since 2010, China's energy consumption per unit of GDP, emissions per unit of industrial waste and emissions per unit of industrial waste have been on the declining trend, and the decline rate is relatively fast. Energy consumption per unit

GDP decreased from 115300 tons / billion yuan in 2010 to 589000 tons / billion yuan in 2019. It shows that energy conservation and emission reduction measures have achieved results in recent years. China's economic development is moving towards sustainable development. From the side, it also shows that the scale of green finance development in China has gradually expanded since 2007. However, the environmental problems in China are still severe, and green finance still needs further development.

Secondly, from the perspective of the development of some provinces, under the advocacy of various national green policies, the provincial governments have gradually realized the importance of green financial development. As shown in Table 1-1, from 2010 to 2019, the energy consumption of GDP, industrial wastewater discharge per unit GDP, industrial stable waste discharge per unit GDP and industrial waste gas discharge per unit GDP of each province are all declining.

TABLE I. ENVIRONMENTAL INDICATORS OF SOME PROVINCES AND CITIES

Region	Particular year	GDP energy consumption (10000 tons / 100 million yuan)	Industrial wastewater discharge per unit GDP (10000 tons / 100 million yuan)	Industrial solid waste discharge per unit GDP (10000 tons / 100 million yuan)	Industrial solid waste gas emission per unit GDP (10000 tons / m3)
Shanghai	2010	0.42	18.14	0.17	39.84
	2019	0.16	7.83	0.06	2.63
Jiangsu	2010	0.77	19.43	0.28	46.82
	2019	0.36	7.97	0.15	7.37
Zhejiang	2010	0.69	18.03	0.19	42.5
	2019	0.30	9.12	0.09	5.68
Anhui	2010	1.33	23.82	0.81	77.67
	2019	0.64	9.86	0.52	11.54
Fujian	2010	0.66	24.54	0.52	48.19
	2019	0.24	8.23	0.15	6.57
Jiangxi	2010	0.89	24.36	1.34	107.06
	2019	0.41	11.95	0.68	14.97
Shandong	2010	1.23	12.97	0.46	70.69
	2019	0.6	7.46	0.33	16.68
Henan	2010	1.54	19.75	0.59	104.17
	2019	0.57	9.93	0.35	10.22
Hebei	2010	1.13	26.42	0.5	75.81
	2019	0.36	8.41	0.25	8.74
Hunan	2010	1.09	26.7	0.48	95.8
	2019	0.36	9.47	0.17	10.99
Guangdong	2010	0.4	21.74	0.12	37.86
	2019	0.2	11.6	0.07	4.37
Guangxi	2010	0.82	54.92	0.78	167.23
	2019	0.36	10.55	0.38	10.98

Data source: statistical annual report of each province

*B. Analysis of the development of green finance from the perspective of society*

The attention of the government and all sectors of society to green finance is significant to its development. The financing situation of the government and all sectors of society in the clean industry can directly reflect the attention of the development of green finance. The specific analysis is shown in Fig.2.

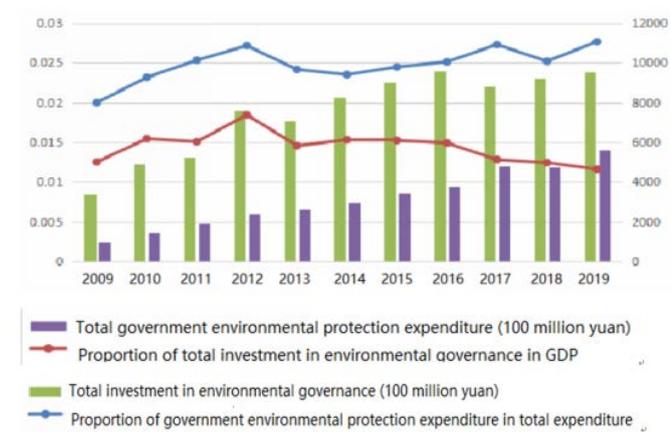


Fig.2. Expenditure on environmental protection from all walks of life

From the above analysis, it is clear that the government's expenditure on environmental governance is gradually increasing, from 338.73 billion yuan in 2010 to 953.895 billion yuan in 2019. The government pays more and more attention to environmental issues, and society's investment in the environment as a whole is also on the rise. From the perspective of proportion, the proportion of government expenditure on the environment is rising slowly, and there is a downward trend in years. The proportion of social-environmental investment in GDP has been declining since 2014. Under the government's strong advocacy, all lifestyles actively participate in environmental governance [5], but its effect is not right, and the community's concept of green is not deep enough. It also reflects the slow development of green finance and insufficient support for green economic development.

#### IV. PROBLEMS OF GREEN FINANCE IN ECONOMIC DEVELOPMENT IN CHINA

##### A. The green financial market system is not sound

Whether the green financial system is perfect or not directly determines the development of green finance. Generally speaking, the green financial market system is mainly divided into the direct financing market and secondary financing market. At present, the secondary financing market is the leading market, the direct financing market started late, and the development is relatively backward. Green credit business plays an essential role in the secondary financing market of green finance. The imperfection of the development of the green financial market system in China leads to the lack of effective competition mechanisms in the current market, which restrains the development of green finance. The main problems are as follows: first, the existing bank credit model does not effectively use the capital of all parties in the society resulting in a low degree of capital utilization - this makes it difficult to play its due role; second, the green financial products lack innovation, while the traditional products can not meet the needs of all levels. However, for the direct financing market, the mechanism of operation of the green securities market is still in the initial stage of development, and the policy support is weak, which makes the development of green securities lack a specific platform, and the development is relatively slow.

Therefore, it is challenging for environmental protection enterprises to realize capital financing through the listing. Due to the maladjustment of the whole structure of China's capital market, the current capital market is still weak and ineffective. In addition, listed companies often lack environmental awareness and fail to fulfill their due environmental responsibility after successful listing. Coupled with the adverse supervision of relevant departments, there is a significant lack of management and lack of an effective regulatory system, which seriously affects the healthy development of green securities.

##### B. The cooperation of relevant government departments is not in place

The healthy development of green finance is inseparable from the adequate support of government departments, especially financial institutions and environmental protection departments. Effective cooperation between government departments and financial institutions is an essential factor for the healthy development of green finance. Only by establishing an effective cooperation and exchange mechanism and clarifying their respective division of labor can the relevant departments play a synergistic role. At present, the environmental protection industry is new and important in China. However, due to the lack of sufficient experience in the environmental protection industry and the lack of scientific and reasonable management standards at this stage, it is unable to play an effective role in the environmental protection industry. Therefore, this results in the inability to monitor environmental protection quality and assess project risks. Therefore, the development of Green Finance on this basis often lacks the ability of professional technology identification, which leads to significant project risk. In order to promote the healthy development of green finance, the government environmental protection department and relevant financial institutions should form a joint force. They should use the government resource platform, obtain useful information resources and certain financial support, and promote the healthy development of green finance with the policy support of the environmental protection department.

##### C. Relevant policy support is insufficient

The sustainable development of green finance needs substantial capital as a guarantee. At present, the development of green finance is still in the primary stage, and the funding gap is significant. According to the latest data, in 2016, the bank's green financial loans accounted for only about 8% of the industry's loans, and the scale of enterprises' investment in the green financial industry was also small. The main reason is that the government has few preferential policies for the green financial industry, which makes the enterprises have a low investment interest in the industry, and the amount of capital investment is naturally small. Therefore, the development of green finance must be guaranteed by substantial capital investment.

##### D. The public's green consumption intention is not strong

Consumer awareness can also directly affect the development of the green financial economy. When market consumers buy products, they often choose to buy traditional

products. The reason is that the price of traditional goods is low, while the price of emerging green financial products is high. Therefore, from the perspective of price, consumers often do not choose green products and new energy products, which indirectly leads to the development of green financial products. At the same time, green products and new energy products are still in the early stage of market launch, with substantial capital investment, low level of research and development, and difficult to guarantee product quality, which is also the main reason for the slow development of green financial economy [6].

#### *E. The economic structure of green finance is unbalanced*

At present, most of the enterprises in the central and western regions of China belong to the heavy pollution industry. The overall environmental awareness of the enterprises is low, and environmental pollution is generally severe. From the perspective of China's green financial-economic market, the imbalance of regional development is still one of the critical reasons hindering the development of green finance.

### V. THE DEVELOPMENT STRATEGY OF GREEN FINANCE

Improve the green financial market system and broaden the financing channels of the environmental protection industry. Improve the green financial market system, further expand the scale of the secondary financing market, and promote the field of direct financing market. Specific measures include improving the green financial system, especially building a perfect indirect financing market of green finance, and innovating direct financing products of green credit. For the secondary financing market, the stock market financing can effectively guarantee the healthy development of environmental protection industry, regulate the listing access conditions; vigorously support innovation and venture capital institutions; establish and improve the rules and regulations of the financial market, especially the bond market, provide a relaxed environment for the bond market, and support and encourage environmental protection enterprises to carry out bond market financing from the action. In addition, with the continuous improvement of the state's external incentive policies, financial institutions also need to formulate scientific and reasonable green financial development strategies, which will be organically integrated with their own economic goals. At the same time, we also need to carry out internal incentives through the implementation of green financial business assessment indicators and other measures, to transmit the concept to all branches and personnel effectively. For example, the green financial business increment index can be reasonably introduced into the personnel assessment system, to promote the continuous improvement of the green financial business level of enterprises and improve the overall economic development level of China.

Strengthen the effective cooperation of government departments and improve the allocation efficiency of the environmental protection industry. The government should formulate a long-term green financial development strategy, establish an efficient cooperative management mechanism, build a communication and exchange platform for government

personnel and financial institutions personnel, fully understand relevant information, and clear their own job division. The environmental protection industry is a new technology industry in China. The government environmental protection department attaches great importance to the development of green finance. It ensures the effective development of green finance, improves the working efficiency of the whole green financial system, strengthens the cooperation between financial institutions and government departments, and ensures the sustainable development of green finance [7].

We will increase financial support. The main reason for the slow development of green finance lies in the late start of green finance economy, the lack of policy support and the low amount of capital investment. In order to ensure the healthy development of green financial products, we should start with the quality of products, increase the intensity of research and development, and increase the market share, thus to promote the rapid development of green finance.

Guide the awareness of green consumption. At present, people's awareness of green consumption is generally weak, so it is particularly important to spread the concept of green consumption. In order to change consumers' consumption behavior and improve their awareness of green consumption, we should actively promote the benefits of green consumption and completely change consumers' traditional consumption concept. At the same time, consumers can actively understand the knowledge of green consumption, learn the connotation and development of green consumption, and actively cultivate the concept of green consumption.

Promote the adjustment of financial and economical industrial structure. The establishment of a sound financial support policy is an important condition to promote the sustainable development of China's economy. Therefore, we should actively guide the flow of social capital to the green financial field and increase the investment in the green industry. At the same time, we should establish a sound green financial system to promote the development of green finance in China.

### VI. CONCLUSION

On the basis of combing the relevant literature of green finance and industrial structure, this paper analyzes the current situation of green finance from the aspects of the environment and society. It quantitatively analyzes the development level of green finance in some provinces in China. At the same time, it points out the problems existing in the economic development of green finance in China, such as the imperfect green financial market system, the inadequate cooperation of relevant government departments, the unbalanced economic structure of green finance, and more. Additionally, it puts forward the development strategies of green finance, improves the degree of government supervision and support, and actively plays the role of financial institutions, to promote the long-term development of green finance.

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