



The Development of Chinese Green Financial Market

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Abstract. Chinese President Xi Jinping promised that carbon emission quantity will reach the peak before 2030 and achieve carbon neutrality before 2060. In order to fulfill this mission, China must make full use of green financial market which mainly consists of green credit, green bond and carbon trading market. After several years' development, Chinese green financial market has gained much achievement. However, problems also exist in this market. This paper aims to discuss these problems and inspirations drawn from European governments' experience. The outcomes of this paper can offer some suggestions to Chinese policy makers.

Keywords: Green finance · Chinese green financial market · Environmental protection

1 Introduction

Since the First Five-Year Plan in 1953, China has witnessed remarkable development of the infrastructure and industry. There is a surge in Chinese economy and people's living standard. However, some serious problems also emerge. In the past, importance of environmental protection was neglected by policy makers because they pursued rapid development and exploited resources without restoration. Take air pollution as an example, Chinese industrial improvement is highly reliable on coal consumption which does damage to environment because of excessive CO₂ emission.

At the General Debate of the 75th Session of the United Nations General Assembly (UNGA), Chinese President Xi Jinping promised that carbon emission quantity will reach the peak before 2030 and achieve carbon neutrality before 2060. In order to transform Chinese economy from a resource-intensive and pollution-intensive economy to a green economy, thorough efforts have been made by the government to fulfill the mission made in the Paris Agreement regarding the issues of global climate change [1].

Chinese government has utilized some market-based environmental policy instruments such as a pilot carbon emission trading system to deal with the environmental degradation. In this system, carbon emission right is adopted as a commodity which can be traded in the economic market. Actually, this system is a crucial part of green

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financial market which is imperative to protect environment. Currently, Chinese green finance develops in a stable speed and has huge potential.

The paper aims to explore implication, content, overall impact and current situation of today's Chinese green financial market and accomplishment it has gained. Some problems in this market will be discussed. By comparative study, some advantages in mature green financing system of European countries will be discussed. Then the results of this paper are some feasible plans provided to Chinese government to solve these problems.

2 Analysis of the Development of Green Finance in China

2.1 Implication, Content and Overall Impact of Green Finance

2.1.1 Implication of Green Finance

Green finance is comprised of green investments, public policies regarding mitigation of environmental damage and many other components of financial system unique for green investments [2].

Compared to traditional finance, green finance considers the achievement of environmental protection as a more important criterion to measure the activities' effectiveness. The main purpose of green finance is to achieve a balance between financial development and environmental protection. In addition, without an invisible hand existing in traditional financial market, green financial market is mainly dependent on the policy because environmental resources are public goods which will easily spell to the free-rider problem. It's hard for financial institutions to give up profit for the sake of the environment. Therefore, they will not spontaneously consider the eco-efficiency of the corporates who are borrowers unless it is compulsorily regulated by a policy.

2.1.2 Content of Chinese Green Finance

Green credit, green bond, green investment fund, green insurance and green rent are all powerful financial instruments in green financial market. Green credit, green bond and green investment fund accounted for a large proportion in Chinese green financial market and the scale of them has expanded steadily.

More and more innovative ideas have also been adopted. Traditional green credit was combined with many new green financial products including green rent, green credit card and green bond pledge which are quite significant. For instance, green rent played an indispensable role in the Beijing Winter Olympics in 2022. It was claimed by Chinese Organizing Committee for the Olympic Games (COCOG) that over 70% of the facilities were leased instead of buying, ranging from furniture in athletes' hotels to the large equipment used in the competitions. This measure undoubtedly reduced waste of resources and energy. In addition, China also introduced more green financial derivative instruments specially for carbon trading. These instruments range from carbon bond, carbon future goods to carbon swap according to discrepant demand in carbon trading market.

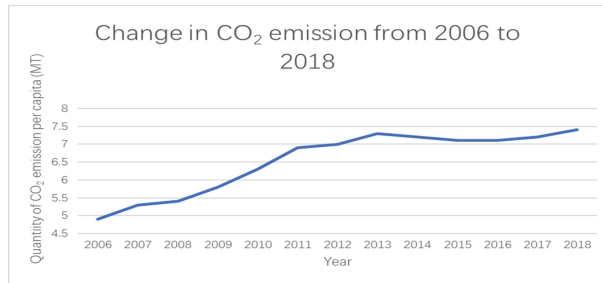


Fig. 1. The original data is from World Development Indicators

2.1.3 Overall Impact of Chinese Green Finance

Chinese green financial market has become one of the largest markets in the world. Green finance has a positive impact on both economic development and environmental protection in China [3]. Since 2006, the concept of green finance has been put forward, then great achievements of green finance can be witnessed in the Fig. 1.

After 2011, it's apparent that the growth rate of CO₂ emission reduced although there were still fluctuations. Growth of CO₂ emission has been inevitable in recent few years because transformation of China's industry calls for time. Besides, China's energy supply is still mainly from coal so that our carbon emission has not yet peaked. Deceleration of growth in CO₂ emission is a giant leap attributed to the boom of Chinese green finance which will finally lead to sustainable growth.

2.2 Current Situation of Chinese Green Finance

Since green credit and green bond account for a large proportion, this study explores current situation of these instruments in detail to reflect that of Chinese green finance. Besides, carbon emission right trading system also plays essential role in mitigating environmental degradation because carbon market has been considered as one of the most efficient financial instrument to weaken climate change.

2.2.1 Current Situation of Green Credit Market

Green credit market developed earliest since 2007 and have gained great achievement in past years. By the end of 2021, the balance of China's green loans in local and foreign currencies surged by 33% year on year to stand at 15.9 trillion yuan (about \$2.50 trillion).

Different from traditional credit market, financial institutions need to take environmental risk into consideration when giving loans. They lend money to eco-friendly firms or projects in low interest rate and strictly control the money lent to those firms that are energy intensive or seriously polluting or have excess production capacity. This measure can both rationalize and advance the industrial structure.

On the one hand, because of higher barriers to loans from financial institutions, producing factors such as capital and labour were reorganized and the industrial structure has become increasingly rational. The rate of resource utilization has also been growing. On the other hand, with the increase of borrowing rate, some companies introduced more

technology in order to reduce the cost. Therefore, Chinese industry transformed from labour-intensive industry to capital-and-technology-intensive industry [5].

2.2.2 Current Situation of Green Bond Market

Since China issued its first green bond in 2016, explosive expansion has been witnessed in green bond market. Today China has become the second largest issuer in the world. Chinese green bonds are famous for their perfect credit, wide range of participation and high degree of liquidity. At first, the majority of Chinese green bonds were held only by domestic investors because China's standards of this market had discrepancy with the international standards. However, with the opening of Chinese bond market and improvement of standards, the number of overseas investors has risen in recent years.

The standards which were different from international ones reflected that China designed its regulations according to its own situation. For instance, China regulated that among the green projects, only 50% to 70% of the proceeds needed to be linked with green projects and these proceeds were used for repaying the bank or investing in capital. However, at least 95% of the proceeds must be related to green projects in global standards. In addition, China used to consider fossil fuel as clean coal which was not consistent with international standards before 2020 [6]. Despite that these discrepancies drew some skepticism about whether Chinese green bond is truly green, these regulations were specially designed due to China's own situation. At the start-up stage of green bond market, only a bit of projects can meet the criteria of global standards with 95% of proceeds linked to green projects. Chinese lower standards can encourage more projects to participate and promote faster speed of the green bond market's development because many companies are fairly dependent on debt finance. Besides, China has been heavily reliable on coal energy so that it needs a transition period before its total transformation.

2.2.3 Current Situation of Carbon Emission Right Trading System

Carbon-emissions right trading system was established in 2011 and seven administrative areas were selected for the pilot project. These areas are different from each other in levels of industrial structure and economic development. After few years, positive effects of the pilot have emerged gradually.

Firstly, this system can force the entrepreneurs to take action to protect the environment. In this system, companies are allocated a set quota to limit their carbon emission. When the expected carbon emission of projects is more than the quota, firm owners need to buy extra quotas. Under this circumstance, every entrepreneur needs to compare the cost of extra quotas with their revenues and considers more about the control of carbon emission for their own sake.

Secondly, this system can also encourage proper allocation of resource with the help of market mechanisms. If firm owners still have remaining quotas, they can also sell them to gain profits. Hence, demand and supply mechanisms can help the market self-adjust and achieve dynamic balance.

Finally, carbon emission right trading system can also help transform the structure of industry and consumption of energy [4]. The reason is that firms in the secondary industry suffer more burden because they need to buy more extra quotas than other

firms. In the long run, some of these firms may transform and enter other industries, so proportion of the secondary industry decreases in the whole industry. More and more firms have also replaced traditional coal energy with clean energy such as wind, water and nuclear energy.

3 Existing Problems in Chinese Green Financial Market

3.1 Unique Problems in Three Markets

3.1.1 Difficulty in Loaning for Small Green Corporates in Green Credit

The policies for green credit market are mainly effective for large carbon-intensive companies but they are not targeted at small eco-friendly companies. Since small green corporates lack guarantees and pledges, and the standard of estimating greenness still needs to be improved, it is difficult for them to loan money.

3.1.2 Inconsistency with Global Standards in Green Bond

IN the green bond market, Chinese government set some distinct standards which are inconsistent with global ones. Therefore, it is a great challenge for China to attract foreign investors because there may exist misunderstanding which results in high transaction costs. Hence, transparency of the explanation of “green” is urgent. Furthermore, the majority of financial institutions involved in the green bond market are controlled by the country now and private participation is scarce. The proportion of public and private participation still need to be adjusted.

3.1.3 Lack of Further Diversification of Industries in Carbon Trading

In the carbon emission right trading system, some firms in the list of government can only emit CO₂ in a given quota according to the policy. However, the list still needs to be improved further and it can include more industries and corporates. In addition, since this policy is mandatory, it is hard for entrepreneurs to change their attitudes towards environmental protection in the short run. They are enforced to adapt but this does not originate from their own willingness. When faced with economic benefit, they may be short-sighted and do not care about social benefit and long-run sustainable development.

3.2 Mutual Problems in Three Markets

There are also mutual problems among the above three markets and general problems in green financial market.

3.2.1 Greenwashing

Greenwashing is a serious problem and it has developed into different types, including selective disclosure, empty green promises, untrustworthy certifications and false narrative. To be specific, firms’ owners selectively disclose positive part of their information and negative parts are ambiguous. There are also some firms issuing empty green promises which they fail to abide by. Furthermore, some firms even utilized fake certifications and inauthentic publicity to mislead investors [7].

3.2.2 Imbalance in the Structure of Chinese Green Financial Market

There is still a huge room for improving the structure of Chinese green financial market. Currently, more than 90% of capital in the market is from green credit market, the remaining part is from other green instruments market. It is obvious that the structure of Chinese green financial market is seriously imbalanced. Furthermore, today's green financial market is heavily dependent on indirect financial system which is mainly impacted by green credit. However, the effect of direct financial system is tiny.

3.2.3 Lack of Awareness of Environmental Protection

Since it has not been a long time after the policies regarding green finance came out. Both financial institutions and investors all need to raise their awareness of environmental protection. Actually, financial banks implement few green financial projects and investors find green bonds less appealing than common bonds.

4 Inspirations from European Green Financial Policies and Suggestions About Chinese Green Finance

4.1 Innovation in Green Financial Derivatives Instruments

Besides traditional green financial instruments, European countries also promote green insurance and force some firms to buy. They also push up with carbon future goods trading to reduce the risk of green investment.

China can also promote different green financial derivatives instruments to deal with the problem of small green corporates which find it hard to loan money. Furthermore, China can also increase the number of these financial instruments to make the market's structure more balanced.

4.2 Utilization of NACE

In 2020, *EU Taxonomy* came into force and in this scheme, Europe uses NACE (Statistical classification of economic activities in the European Community) to classify economic activities regarding green financial projects in order to keep consistent with the classification of the industry. Policy makers only make dynamic adjustments in the subdirectories of the classifying system in order to maintain its consistency [8].

With respect to the problem in green bond, China also needs to achieve alignment with international consistency in the future and can make some supplements to the global standards. In the carbon trading market, China can also use this classifying method to sort different industries and give them different quotas.

4.3 Transparency and Concreteness of Information Disclosure

EU Taxonomy also emphasizes the importance of the information that the firms disclose. The disclosure includes purpose, process and the result of a project without omission, so the information gap between firms and investors are narrowed. In addition, EU Taxonomy

formulated actual performance indicators and regulation for reports so that Europe can judge the companies by concrete data [9].

China can also use this method to avoid green washing and help financial institutions tell right from wrong. Then they will invest in those who perform real deeds in promoting sustainable development.

4.4 Right Given More to Private Governance

IN the international bond market, private investors account for a larger part and because it's more responsive to the needs of market participants, the implementation is also faster.

China can loosen the limitation on domestic private investors gradually and let direct finance play a stronger role.

4.5 Education About Environmental Protection

In European countries, environmental education has been emphasized for a long time. The governments cooperate with non-governmental organizations and schools to educate adolescents about the importance of environmental protection. Their educating methods combine knowledge in textbooks with experience of visiting the museum and exploring the nature.

China can also enhance the education of all the citizens by combining practice with theory. When people's awareness is raised, they will join each other to build a green society efficiently and spontaneously.

5 Conclusion

This paper analyses the development of Chinese green financial market in terms of its implication, content, overall impact and current situation. It can be found that the growth rate of CO₂ emission was reduced attributed to the policy of green financing. Policies of green credit market promotes rationalization and enhancement of industrial structure. Policies of green bond market are tailor-made in regard to Chinese own situation and encourage more participation of investment. Policies of carbon emission right trading system force the entrepreneurs to act to protect environment. Meanwhile, they encourage proper allocation of resources and industry transformation.

Then this study discusses about the existing problems in Chinese green financial market. There are unique problems in green credit market, green bond market and carbon trading market which are separately difficulty in loaning for small green corporates, inconsistency with global standards and lack of further diversification of industries. Mutual problems also exist in three markets including greenwashing, imbalance of structure and lack of awareness of protecting the environment.

Finally, this paper also explores strengths in European green financial policies and gives some suggestions about how to solve the problems in Chinese green financial market, hoping to promote a more harmonious environment and sustainable development in China.

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