

Research on the Development of Green Finance Policies in China

-Based on Policy Data from Beijing

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Abstract: With environmental problems being severer these years, developed countries first started to find out possible solutions. In 2015, after thousands of tries from various aspects, United Nations Climate Change Conference proposed *The Paris Agreement* in which governments started to pay great attention to the concept of green finance. China has shown her determination in process of green finance development and released wide-ranged green finance policies for different areas. In 2016, the Chinese government proposed *Guiding Opinions on Building Green Financial System* in which made a comprehensive and detailed plan for green finance developing. Provinces and cities followed the step of central government and issued relative policies in recent years. This article based on green finance policies in Beijing and analyzed the components and tendency of policies. It is apparent that the proportions and tendencies of various policies approximately fit the proportions and development of different financial instruments. While there exists disproportion in existing green finance system in China. Green credit accounts for the largest part and is advanced even comparing with developed countries. Green fund and green insurance are relatively underdeveloped and deserved to be improved in future. The Chinese government should consider new methods and implement instruments to deal with the recent recession and worldwide financial shocks. Comprehensive green finance policy system is decisive and plenty of foreign new financial products should be imported.

Keywords: green finance, green finance policy, green credit

1. Introduction

The huge negative externality of fast developing economy, which can be dated back to the Industrial revolution, has added much pressure to the nature. In the last century, numbers of environmental problems and appeals from both environmentalists and writers started to draw public attention. Recently, as problems of polluting and ecological crisis become more serious, developed countries first proposed the idea of green finance. Green finance, which belongs to environmental economics was formally proposed in *The Paris Agreement* in 2015, main components of which include the concept of sustainable development, ESG, climate change risks etc. It symbolizes that governments start to control the release of green gas in economical ways in order to develop stably and sustainably.

Until now, many developed countries and some developing countries have established their own green finance systems and developed their finance policy systems. Green finance markets especially green credit markets start to be popular in many countries with millions of transactions every day. Many international cooperation and organizations have been implemented and founded respectively. China has tried hard to fulfill her obligations in this process and already reached a high level in the establishment of green finance.

The Chinese government has been aware of environmental problems since the 1980s. With the support and emphasis from government, both financial and non-financial institutions have taken green organizations and green items into consideration for many years and released thousands of related financial products. Besides, green finance has increased the efficiency of enterprise's resource allocation which promotes especially heavy polluting and heavy industrial enterprises to improve their techniques.

For green finance policies, China has established a relatively comprehensive policy system which contained different aspects, from micro level to macro level. Existing literatures in China usually focused on analyzing one of two kinds of policies and those which try to evaluate the behavior of the whole green finance policy system are fewer. Taking Beijing, as an example, this article aims to collect and classify all green finance policies which have been proposed and then try to explain the change of their numbers and types. The collection can be seen as a brief review for the development of Beijing's green finance and an example for the whole developing process of green finance in China.

In the second part, researcher will briefly explain what exactly green finance and green finance policy are and review existing literatures about the related effects of these concepts. In the third part, analysis of green finance policies in Beijing will be shown at first. Then, researcher will point out some outcomes in current green finance system and propose some possible suggestions. In the fourth part, a conclusion of this article will be given.

2. Literature review

2.1. What is green finance and green finance policy?

The origin of green finance is environmental finance. In the *American Heritage Dictionary* (2000), green finance is explained as environmental finance or sustainable financing. Salazar (1998) defined that environmental finance was a kind of financial innovation which aimed at satisfying the requirement of environmental protection industry investments [1]. Lindenberg (2014) contended that green finance comprised three aspects including the financing of public and private green investments, public policies and financial system that deal specifically with green investments [2]. Zhang et al. (2016) thought green finance's definition was hard to be unified [3]. Narrowly speaking, green finance belongs to those green parts in various financial assets. Broadly speaking, it is more focused on financial system. For developed countries, governments are concerned about climatic changes and relative technological adjustments. However, in developing countries, such as China, if an investment could save fossil energy and contain pollution, it would be classified as part of green finance. The policy proposed in China named *Guiding Opinions on Building Green Financial System (2016)* finally gave out green finance's definition, as economical activities which could support environmental improvement, deal with climatic changes and use resources effectively.

The financing of policies is a significant component of green finance. Ma (2016) claimed that green finance policies could use financial services like loads, private offering funds, bonds, stocks and insurances to support the developments of green industries [4]. Cao (2019) said that government should use policies to propagate green development and complete green financial market. Xin et al [5]. (2021) contended that comprehensive political support was the core of future green finance development [6].

2.2. The development of green finance in China

The first policy about protecting environment in China was published in 1981. Until now, the Chinese government has established a comprehensive green financial system with a wide variety of products and services. By 2012, environmental establishment was accentuated during the 18th CPC National Congress. Detailed goals and methods were organized in China's Twelfth and Fourteenth Five-Year Plans. In 2015, The Chinese government added 'establishing green financial system' as a national strategy in *Integrated Reform Plan for Promoting Ecological Progress*. In 2016, the Chinese government organized an integrated plan about green financial system in *Guiding Opinions on Building Green Financial System*. In 2020, President Xi proposed that China will aim at carbon dioxide emissions by 2030 reach the peak and achieve carbon neutrality by 2060.

By now, green finance policies in China mainly include five aspects as below, green credit, bond, insurance, fund, and carbon-sink trading. Nowadays, green credit owns the largest proportion followed by carbon-sink trading, green bond, green fund and green insurance. For green credits and bonds, the Central Bank has defined them as qualified mortgages recently in order to promote releasing. Carbon-sink trading market and exchange have been established based on experience of pollution emission trading. Green finance centers were founded in Beijing, Shanghai, Guangzhou and Shenzhen respectively. Various green finance innovation pilot zones and cross-regional development pilot zones were built in different regions in China.

To summarize green financial developments in China, Ma (2016) established a theoretical framework of green finance policy [4]. Cao (2019) contended that green financial development could be divided into two modes, top-down mechanism which came from developed countries, and bottom-up mechanism which came from developing countries [5]. Virginia (2019) thought that 'green' investments should be defined more clearly by top-down mechanisms, which can also encourage innovations of green financial products and establish a supervisory framework for relative institutions [7]. To evaluate the performance of green finance in China, Wang et al. (2019) used DSGE model to analyze the function and mechanism of green credit incentive policies which include re load and discount [8]. Shen et al. (2020) used DID and PSM to examine the influence of green finance pilot zone to different parts of the society [9]. Du et al. (2020) used FCE to evaluate the effects of policies which were published among China's Eleventh to Thirteenth Five-Year Plans [10]. Chen et al. (2021) upgraded the ESG CAMP model, used DID and DDD to identify the causality among bond credit spreads, enterprises and green financial policies [11]. Wang et al. (2021) established moderated mediation models to examine green credit policies' influence on enterprises' financial resources allocations [12]. Jin et al. (2022) used DID to quantify correlations between green technique innovations and green industry policies such as founding green finance pilot zones [13]. To advise for future green finance development, Cao (2019) analyzed drawbacks the government faced and suggested innovating both policy system and financing organizations [5]. Ma (2021) mapped out the route of Chinese green finance under the prospect of carbon neutrality [14]. Huang et al. (2022) analyzed the possible benefits of fintech as a tool to promote green finance [15]. Wang et al. (2022) examined the reciprocal relationship between green finance and the carbon peak and carbon neutrality goals, and provided some suggestions which could benefit the future development of green finance for later researchers [16].

3. Data analysis

All 79 policies are collected from the website of Beijing government, from 2008 to 2021, a period which contains all developing stages of green finance. Considering the frequency of several professional norms which appear in most green finance policies, policies are classified into seven groups according to their contents. (1) green credit and bond discount. Include policies which incent

larger green issues. (2) green item re loan support. Include policies which use re loan to encourage innovations of green industries. (3) risk guarantee and compensation mechanism. Policies of this kind should contain green insurance mechanism. (4) compulsory environmental pollution insurance. This kind of insurance is especially designed for heavy polluting and heavy industry. (5) green finance pilot zone. Policies should involve the establishment and organization of green finance pilot zone. (6) green project and finance equipment. Include green finance supporting facilities, green database, etc. (7) carbon emission right. Include policies which encourage carbon emission right, emission right, carbon sink, forest ownership, etc. Sometimes, there are several aspects mentioned in a single policy and these policies will be classified repeatedly into different groups (Graph 1).

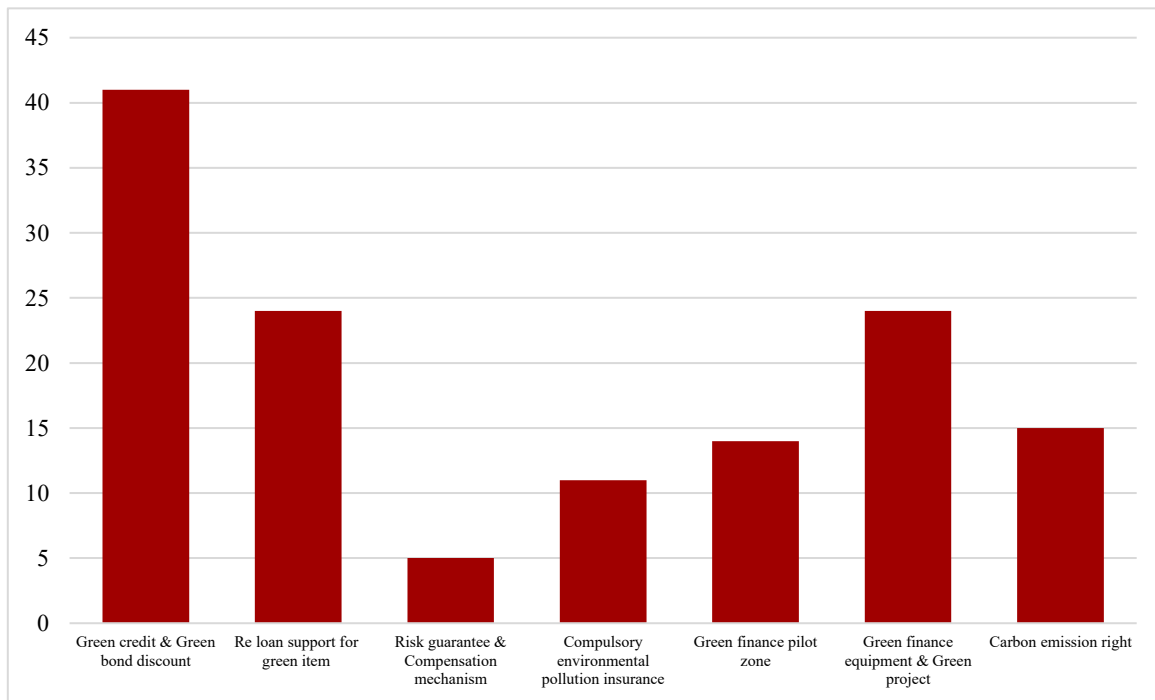


Figure 1: Distribution of varied types of green finance policy.

Graph 1 shows that green credit and green bond discount policies occupied the biggest proportion in green finance policy system. This result agrees with the truth that green credit market is the most mature one among all kinds of green finance market in China. Relative re loan supports and various kinds of green finance projects follow as the second developed parts. This phenomenon is possibly due to the supporting function of re loan toward green credit and the profusion of green projects. Besides, data in Graph 1 is consistent with the truth that the Chinese government has emphasized the establishment of carbon emission exchange and green finance pilot zone. Comparing with other parts, green insurance, risk guarantee mechanism and compulsory environmental pollution insurance still have gigantic place to improve.

As for the process of green finance policy developing, Graph 2 shows numbers of policies each year. Graph 3 shows tendencies of different policies respectively.

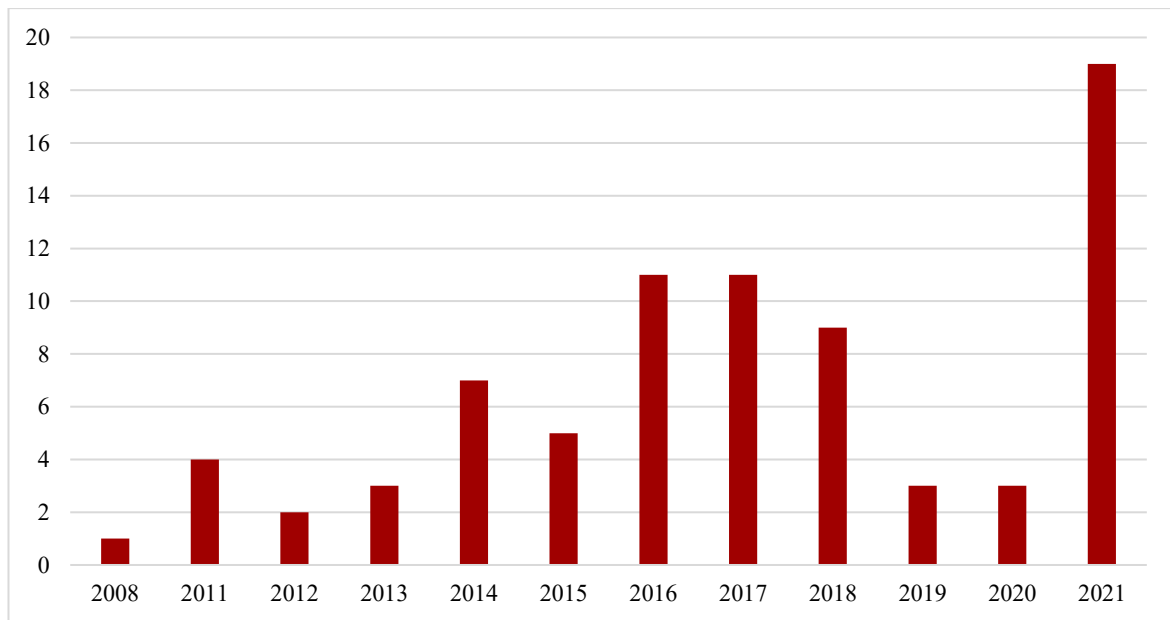


Figure 2: Numbers of policies in each year.

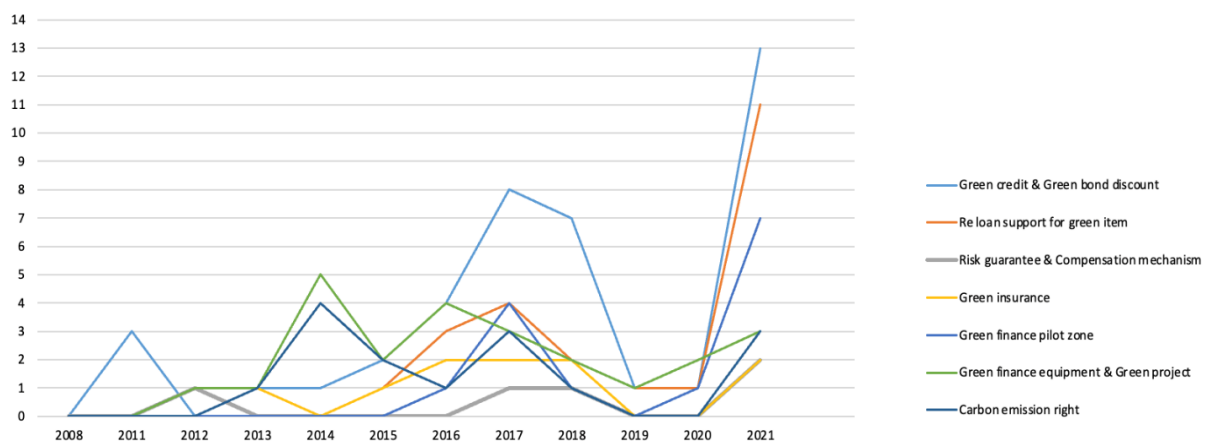


Figure 3: Numbers of different kinds of policies in each year.

It is obvious that number of policies each year follows an increasing tendency from 2012 to 2017. Then it decreased from 2018 to 2020 and finally boomed in 2021. To explain, there is some important information which should be taken into consideration as background of this tendency. First, the Chinese government has issued *Guiding Opinions on Building Green Financial System* in 2016. Before that, economic in China simply followed the form of extensive development and didn't pay much attention to environmental problems and climate changes. After the issue of that decisive file, green finance started to develop with formal and specialized standards eventually. While considering the time lag problem, numbers of green finance policies mainly increased in 2016 and 2017. Most types of policies followed the increasing tendency except green finance equipment and projects, which could be seemed like an individual cases in Beijing.

Second, at the end of 2019, world economic was destroyed sharply by the prevailing Covid-19, which also restrained green finance development and shown as decreasing numbers in 2019 and 2020. Besides, both governments and researchers had to face a completely new economic situation with more disproportions and conflicts. Changes in politics and regulations towards green finance must

appear in the future. After a year's adjustment, because of effective epidemic prevention measures, economics in China revived rapidly and the number of green finance policies boomed again successfully in 2021.

Tendencies of each type simply followed those of all policies. Policies about green finance pilot zone, equipment and project have together accounted for the biggest part specially in 2014. This abnormal phenomenon was consistent with central policies. In 2014, the State Council proposed the idea of green finance pilot zone, which prompted issues of relative provincial and municipal level policies.

4. Conclusion

China has developed a united green finance system recently and played as a leading country in the worldwide green finance establishment. And for green finance policy system, policies about every part have been released so far. Until now, green credit market and green bond market in China have been relatively complete. Carbon emission trading market and green insurance market are developing rapidly these years. Diversified financial and non-financial organizations are now proposing green finance. The issues of green finance policies just follow the step of green finance developing at the same time. However, there are also some obvious drawbacks in the existing green finance system. Most green finance policies are focused on credit and bond which could polarize the qualities among different aspects. Laws are apparently rough, and a public database is not established yet. It still needs time for economy to change its form of extensive development to intensive development.

To deal with these existing problems, the Chinese government should first improve its green finance system to fit with new situations. Both green finance markets and policy system should be improved and completed. For example, the government must revise present green finance standard and pay more attention to relative weak parts such as green insurance. Besides, incentives towards companies and the carbon footprint disclosure should be strengthened, Second, innovations for several financial instruments and methods should start. The government should learn from those developed countries about their experience and new financial instruments such as ESG investment. As for carbon sink, China is one of the earliest advocates among all countries around the world, but there is still room for it to complete. The idea of Fintech should be taken seriously as well. As it has become more and more popular nowadays, Fintech must play a decisive role in leading worldwide future financial system. Third, try to establish the synergetic development of green finance and other areas in the society. Not only in financial area, but also in risk management, and civic culture establishment. As the thrive of green finance is doomed, every country should pay much attention to this new area in order to meet sustainable development.

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