The Impact of Chinese Enterprises' Environmental Investment on the Development of Green Finance

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Abstract. Green finance is an important economic means to promote sustainable development. It is also an important way for enterprises to fulfill their social responsibility and design ESG strategies. Green finance is of great significance to China's 14th Five-Year Plan and social and economic development. As governments and social organizations around the world pay more attention to environmental protection, the political design of green finance in China is constantly improving and the number of market players is increasing. At the same time, the research on green finance has gradually shifted from macro-level policy research to micro-level research on green financial products and trading behavior. However, there are still some issues with how green finance is done, and there is a lack of research on the performance of enterprises in green finance and the quantitative evaluation of green finance. Based on the development status of green finance in China, this paper reviews the existing problems and previous studies of green finance and puts forward relevant conclusions on the future development of green finance, such as attaching importance to ESG participation of enterprises and quantitative evaluation and research development.

Keywords: Green finance; ESG; Policy analysis; Sustainable development.

1. Literature Review

The global problems faced by mankind need to be solved through cooperation. Based on the thinking of a human society with a shared future, 17 Sustainable Development Goals (SDGs) have been proposed as part of the 2030 Sustainable Development Agenda. SDGs are expected to be achieved by 2030. With the global COVID-19 outbreak in 2020, the United Nations Development Programme (UNDP) launched the SDG Financing Taxonomy, which provides a roadmap for managing financing and transaction costs for SDG-compliant projects [1]. The classification also requires support from private capital, financial instruments and financial institutions to contribute to the achievement of the Sustainable Development Goals. Among the SDGs, there are as many as six goals related to environmental protection, and the preservation of the environment is crucial to the advancement of sustainable human development. The importance of private sector financial investment for environmental protection cannot be overemphasized.

In previous research, through the analysis of the development dilemma of green finance and the performance of enterprise ESG-related investment activities in the areas of finance, economics, and environmental preservation, it was confirmed that enterprise environmental protection investment has a promoting effect on the development of local environmental protection. ESG investing is increasingly recognized as improving the performance of a managed portfolio, increasing returns and reducing portfolio risk.

Farhad Taghizadeh-Hesary and Naoyuki Yoshino present in the article: Sustainable Solutions for Green Financing and Investment in Renewable Energy Projects that lack of long-term financing, low rates of return, the primary obstacles to the advancement of green energy development are a variety of risks and the lack of market participants' competence. In order to solve the challenges facing green finance, the author proposes methods such as increasing the green finance investment of public funds, reducing the tax on the return of green finance investment, improving the tax type structure, and strengthening the credit management of green finance. At the same time, the rate of return on green energy projects will be increased by utilizing the spillover effects. Individual financial institutions can use both conventional and cutting-edge methods to finance green initiatives, expand the availability of capital, encourage risk sharing and reducing risk, improve the skills of traders, and shape wider market behaviors and circumstances.

During the COVID-19 pandemic, the proportion of corporate ESG investments has increased. Enterprise ESG investment is regarded by enterprises as an important investment behavior with high return on investment ratio. The article the role of ESG performance during times of financial crisis: Evidence from COVID-19 in China confirmed the conclusion.

However, it should be noted that the development of domestic environmental investment policies and regulations in China is still in its infancy. The environmental law, the promotion pressure of the officers, the environmental impact of the environmental investment local government on the environmental investment of the firm, and the effect of the promotion pressure on the environmental investment scale of the enterprise were analyzed [2]. As a result, Chinese protections have generally underinvested in environmental protection. Under the regulation of the policy, the attitude of enterprises towards environmental protection is passive, and the level of environmental regulation of the government is also low, both of these observations are far from the intention of the government. Therefore, the study of the impact of enterprise financial investment on the development of local environmental protection undertakings itself is of great significance to the development of government environmental protection undertakings.

2. Practical Problems

Since the beginning of the 21st century, the deterioration of the global environment has accelerated and international trade and economic cooperation has become closer. Many governments have put forward the political appeal of multi-agent and international joint governance of environmental issues. The United Nations Climate Change Conference held since 1995, the proposal of the United Nations Sustainable Development Goals in 2015, and the signing of the Paris Agreement from 2016 to 2021 show that political forces continue to promote environmental governance efforts. The Chinese government is in the leading role in the global governance of the environment, and after decades of high-speed economic development, gradually realize the importance of environmental protection, attitude towards environment protection by the first management into development and management, after the development in recent years gradually turned to sustainable mode of production, the environmental protection and governance requirements incorporated in the evolution of the market-oriented economy.

In order to realize the environmental protection mode of multi-subject joint governance and sustainable development of production mode, green finance has become an important way to entice members of society and financial resources to engage in protection of the environment. The Chinese government has consistently encouraged the growth of green finance market environment by establishing relevant policy systems and promoting the bring forth new ideas of services and green finance merchandise. According to the research group of the Policy Research Bureau of China Banking and Insurance Regulatory Commission, China has issued a number of national guiding policies since 2015 to promote the development of green finance. In 2015, the overall goal of "establishing a green financial system" was put forward for the first time in the Overall Plan for Ecological Civilization System Reform [3]. In 2016, The general objective and key tasks of constructing a domestic green financial system were specified by the Guiding Opinions on Building a Green Financial System. In 2020, the Fifth Plenary Session of the 19th CPC Central Committee stressed "developing green finance, supporting innovation in green technologies, promoting cleaner production, developing environmental protection industries, and promoting green transformation in key industries and important areas”. In the same year, the Ministry of Ecology and Environment and the People's Bank of China jointly issued the Guiding Opinions on Promoting Investment and Financing in Response to Climate Change, proposing to establish and improve the climate investment and financing development mechanism and policy system, continuously improve green finance standards, and comprehensively promote the investment and financing policy mechanism and capacity building in reaction to climate change such as global warming[4].

Wang Bin and other authors analyzed the Environmental governance policy of the Chinese government, and mentioned in their article on Thoughts and Key Tasks of Green Finance Reform in the 14th five-year Plan Period in China that During the 13th Five-Year Plan period, China's green finance reform and innovation entered a period of rapid development [5]. Green finance policies were constantly optimized, green finance market system was gradually established, and the comprehensive ability of green financing to develop was significantly enhanced. The strong support of green funds promotes continuous improvement of ecological and environmental quality. China's ecological civilization construction reached a new level of pollution and carbon reduction during the 14th Five-Year Plan Period. It is believed that the focus of China's green finance reform and innovation during the 14th Five-Year Plan period is to further improve the green finance policy system, strengthen the improvement of green finance through the development of new green financial goods and services risk assessment and management mechanism. We should improve the legal guarantee for reforming green finance and deepen international exchanges and cooperation in green finance.

The pilot work of green finance in various regions of China is also progressing. Since 2017, In nine areas across six provinces (autonomous regions)—Zhejiang, Jiangxi, Guangdong, Guizhou, Gansu and Xinjiang—the State Council has established pilot zones for green finance reform and innovation. In light of the natural resources, industrial structure and environmental characteristics of each region, various forms of pilot work have been carried out and measures have been adapted to local conditions. Ganjiang New Area in Jiangxi Province issued the Green Finance Standard System. Xinjiang took the initiative to establish the nation's first local green finance industry self-discipline mechanism, and formulated work guidelines for the self-discipline mechanism, which attracted 30-member units of the banking industry, promoting the development of green finance business in a more standardized and high-quality way. Chongqing, Shaanxi, Shandong and other provinces and municipalities actively promoted the pilot projects of climate investment and financing, and introduced products such as carbon-neutral loans and carbon emission rights pledge loans. Local pilot projects have achieved remarkable results. By the end of 2020, the outstanding green credit in the pilot areas reached 236.8 billion yuan, it accounts for 15.1% of total outstanding loans. And the outstanding amount of green bonds reached 135 billion yuan, up 66 percent year on year[6].

3. Importance of Green Finance Development

Green financial development has important significance to the economic and social, the specific mechanism for performance, green finance through the booster sustainable economic growth, in line with the concept of sustainable development, so as to promote the benign development of the regional industry, and promote the development of green economy of society as a whole, achieve the goal of environmental protection simultaneous, promote the regional government and company innovation.

“Space in the perspective of the green financial impact on development of economy, high quality ", in 2011-2019 based on the data of China's 30 provinces, city, area, through the construction of geographical proximity weight matrix and economic distance weighting matrix for spatial econometric analysis, found the green level of financial development to economic development made a considerable benefit, superior quality and the conclusion still holds when controlling for the variables such as the degree of informatization, the level of human capital, the capacity to draw in foreign investment, and the level of technological and scientific innovation. From the viewpoint of spatial spillover effect, the research results demonstrate that the degree of green finance development has a considerable good impact on the level of high-quality economic development. And the coefficient is significantly larger than the benchmark regression coefficient. Therefore, it is also suggested that in order to more effectively high-caliber economic growth, a unified and open modern green finance platform should be built, the mechanism of green financing needs to be improved, and the green finance development trend should be standardized and standardized: By regulating the flow of financial capital through green finance, the position of energy-intensive industries in the overall industrial structure should be gradually reduced, and the damage to the environment should be limited by increasing the cost of high-polluting industries. Through green investment, we should increase support for clean energy development and improve energy utilization efficiency. Fully rely on the "Internet Plus" to strengthen the linkage between the green finance industry and other industries, vigorously innovate green finance tools and products, and expand the upstream and downstream construction channels of green finance [7]. At the same time, in the Influence Mechanism and Empirical Test of Green Finance Boosting low-carbon Economic Transformation, the authors also examined the impact of green finance on regional industries from the perspective of space. Based on the panel data of China's provincial-level administrative regions, a spatial simultaneous equation model is established to investigate the endogenous interaction and spatial spillover effects of the low-carbon economy and green financing. It is found that there is a two-way promotion effect between low-carbon economy and green finance. The development of green finance can effectively promote the transformation of low-carbon economy in this region, and vice versa. Including the effect of interaction between the regional, green finance trans-regional crowding out of green sustainability financial development in other areas, and the neighborhood of green sustainability financial development brings to the local low-carbon economic growth, and the neighborhood of the expansion of low-carbon economy is also bring the positive role of local green financial development[8].Including Zhu Guangyin and Wang Simin's in order to analyze the characteristics of green financing applied to the effectiveness of the green economy at various levels, an empirical study based on the spatial Dubin model and the panel threshold model was utilized. They found that the local green economy's efficiency is impacted by green finance in a U-shape, and the neighboring regions' efficiency is impacted in an inverted U-shape. Green finance promotes the improvement of green economy efficiency with a single threshold effect, which decreases after crossing the threshold value.In addition, they also confirmed that green economy efficiency has spatial spillover effect, and its improvement in the current period will drive the continuous improvement of local and surrounding areas in the next period[9].

As for the specific impact mechanism of green finance, existing studies have analyzed it by disassembling the demand of the industrial chain. In the paper "Influence Mechanism and Empirical Test of Green Finance Boosting low-carbon Economic Transition", five ways of green finance supporting low-carbon economic development are analyzed, comprising green loans, green insurance, green bonds, carbon financing, and green credit. The goals of "2030 Carbon Peak" and "2060 carbon neutrality" clearly point out the medium and long-term nature of the growth of a low-carbon economy from the perspective of time. Green finance must follow the trend and reform and innovate according to the features of different phases of low-carbon economy. Five green financing avenues that assist the development of a low-carbon economy are interwoven into that process, and play different roles in different development stages. Among them, three paths of green credit, green bonds and carbon finance provide capital guidance for the low-carbon economy's development, and two paths of green insurance and green lease lower the price of green financing, further providing effective cost guarantee for the rapid development of low carbon economy. At the present stage, green bonds and green credit paths can provide financial support to green and low-carbon industries by guiding the flow of capital, so as to realize the concentration of capital in green and low-carbon industries in a short period of time. With a strong economic foundation as the basis, green and low-carbon industries are growing rapidly. Carbon finance has just started, and this path plays a relatively weak role. It mainly uses the funds raised for green transportation and clean energy, but it will gradually grow and mature as time goes by. The green premium rate is directly affected by the environmental risk probability of an enterprise. If the environmental risk rate of an enterprise is high, its green premium rate will be correspondingly high. In order to pursue high profit goals and reduce production costs, enterprises will reduce environmental risks as much as possible. Therefore, the green insurance path improves the awareness of enterprises on environmental risks and the awareness of prevention is enhanced. Enterprises increase their low-carbon efforts and actively carry out projects with low consumption, low pollution and low emission, so as to promote the development of China's low-carbon economy. Production equipment is the foundation, high emissions, high pollution, high consumption of traditional industries, if want to achieve low carbon environmental transformation, first of all should start from upgrading production equipment, eliminate aging, backward equipment, buy energy-saving environmental protection equipment, the process cost of enterprise capital and lead to some enterprise under the transition cost to transformation, get into financial difficulties. Green leasing provides a solution for these enterprises. Enterprises can use energy-saving and environmental protection equipment through financial leasing, and they will not get into financial difficulties while completing the transformation of enterprises, which is conducive to the development of low-carbon industry, so as to promote the society-wide energy conservation and emission reduction.

In the new century, China's green finance has gradually attracted academic attention. The research trend is significantly influenced by global changes and national policies, and the content evolution of the research shows distinct policy and market orientation. After its development, the existing green finance research has gradually shifted from macro overall research to medium and micro market research. According to the "based on China's green financial research progress of Cite Space and hot spot analysis, early green finance research mainly focus on the basic connotation of green finance, green finance main body behavior, the green financial products and services, green financial system and policy, etc., but along with our country market economy environment and the ecological civilization during the shift, The green finance industry has also begun to reflect on the quality and efficiency of its own development, and the current research mainly focuses on green bonds, green investment, green insurance, green funds, carbon trading and other specific green products and green market trading behaviors. Now the literature research has shifted from the connotation definition, system design to for the green financial development of more specific questions, along with the national strategy to influence on the green financial development, the supply side reform, rural revitalization, "One Belt And One Road", carbon, carbon neutral countries such as crossover study strategy and green finance [10].

4. Conclusin

The current research has accumulated abundant knowledge in concept clarification and policy analysis, but it still needs to pay more attention to micro entities and transaction behaviors in the green finance market. At the same time, the qualitative research has made good progress, but the quantitative research related to green finance evaluation still needs to be developed.

The investment of environmental protection enterprises is increasing. Business and non-profit organizations developed the ESG grading system, also called ESG Ratings, to evaluate how well a company's commitment, performance, business model, and organizational structure correspond with the SDGS. With social and economic development, corporate ESG has gradually become an important mechanism for companies to undertake social responsibility. The rise of green finance has a significant countereffect as human civilization pays more attention to the environment on the innovation and the benign development of enterprises themselves, and the increasing importance of enterprises to the environment, green finance has become an important component of ESG in the strategic development plan of enterprises. At present, the research on corporate green finance investment is still insufficient. The essence of economic green transformation is achieving ecological, social, and economic.

Sustainable development and investment behavior of environmental protection enterprises reflect the equity, sustainability and commonality principles of sustainable development theory. The development of green finance aims to realize the green allocation of financial resources and enhance the sense of social responsibility of commercial banks, which has typical positive externalities. Environmental regulation policies mainly promote the investment increase of environmental protection enterprises through demand effect and technology effect, and green finance promotes the investment of environmental protection enterprises through the fund guidance mechanism and information transmission mechanism. In Green Finance and High-quality Enterprise Development:

Using the database of China Industrial Enterprises and the Database of China Industrial Enterprises' pollution Emission from 2003 to 2012, they evaluate green credit policy's effect on the green total factor productivity of industrial enterprises by the difference method, and explain that green credit policy has a significant incentive effect on encouraged enterprises. The green credit program is essential incentive effect on incentivizing enterprises, while it has a restraining effect on restricting and eliminating enterprises. The incentive effect and the inhibitory effect are related to technology, and the R&D investment of enterprises has a significant moderating effect, which not only strengthens the benefit of green credit policy for promoting businesses, but also effectively alleviates the inhibitory effect on restricted and eliminated enterprises.

The current quantitative research on green finance evaluation also has shortcomings. On July 1, 2021, the Green Finance Evaluation Program for Banking Financial Institutions was launched by the People's Bank of China with the intention of enhancing the ability of financing to assist green, low-carbon, and high-quality growth and enhancing the incentive and constraint mechanisms of green finance. This is also the first green finance evaluation scheme released by the Chinese banking industry, marking the beginning of China's financial institutions to accept green finance evaluation. The first for the banking industrySS comprehensive green financial business quarterly performance appraisal, the scheme of qualitative indicators selected the regulators as a primary external evaluation index, selecting agencies the situation of the implementation of national and local green finance policy, green financial system for the establishment of the mechanism and implementation, which encourage the growth of the green industry as a secondary indicator. The proportion of total green finance business, the percentage of all green finance activity, the rate of annual green finance activity growth, and the percentage of all green finance activity risk were selected as the first-level indicators for quantitative indicators, each accounting for 25%.Among the quantitative indicators, the scoring benchmarks of the four first-level indicators include vertical and horizontal perspectives. The vertical indicator examines the change of the total green finance business of the banking financial institution in the last three periods, and the horizontal indicator compares the banking financial institution with all the participating institutions in the current period. The quantitative indicators are calculated from the perspectives of the number, growth rate and risk management of green finance business, as well as the change of green finance business of participating institutions and the comparison of green finance business performance with other participating institutions.

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