A Study on the Path of Green Finance to Promote the High Quality Development of Enterprises in the Context of Dual Carbon

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Abstract. Under the dual-carbon background, China is accelerating the establishment of a sound green financial system under the green development concept and green development policy, incentivizing enterprises to accelerate their transformation and upgrading through green finance, and using ESG performance as an evaluation index for green development of enterprises, the study finds that enterprises can realize the enhancement of their enterprise value by means of green finance and improvement of their ESG ratings, so as to enhance the core competitiveness of the enterprises and achieve the high-quality sustainable and healthy development. Green finance cans significantly help enterprises improve their ESG performance and help them transform and upgrade to relieve financial pressure, thus better realizing high-quality development of enterprises. This paper will find out how green finance can help enterprises achieve high-quality sustainable development in the ESG evaluation system, and explore the realization path of green finance to promote high-quality development of enterprises, so as to help China achieve the goal of "double carbon" as soon as possible.

Keywords: Green Finance; Dual Carbon; ESG Performance.

1. Introduction

With economic development and scientific and technological progress, the relationship between human beings and the climate has become increasingly close. Since the Industrial Revolution, human activities have produced large quantities of greenhouse gases, mainly carbon dioxide, as a result of the excessive use of fossil fuels, which is the main cause of greenhouse benefits. The growing severity of global ecological and environmental problems has given rise to reflection on economic development, environmental protection and social responsibility. Balancing economic development and environmental protection, resolutely abandoning the development model of rapid economic growth at the expense of the environment, strengthening environmental protection and governance, promoting green economic development, and achieving high-quality and sustainable economic development. From the aspect of responsibility regarding the reduction of carbon emissions, there is a core conflict of interest between developed and developing countries on the issue of combating climate change. In 2020, China's GDP totaled 101.60 trillion yuan, accounting for about 17.38 percent of the world's total GDP, and it is the world's second-largest economy; however, China's carbon emissions account for 30.7 percent of total GDP, which is far more than that of any other countries, China's climate action has attracted much international attention. As a result, in September 2020, China announced at the seventy-fifth session of the United Nations General Assembly that it would strive to have its carbon dioxide emissions peak by 2030 and endeavor to achieve carbon neutrality by 2060. China's initiative to put forward the "dual-carbon" target is a positive response to the concerns of the international community and a milestone emission reduction target under the Paris Agreement, demonstrating China's determination to firmly uphold the Paris Agreement and actively engage in climate governance, while at the same time demonstrating China's integration into global climate governance and reflecting the responsibility of a major country.

In the context of dual-carbon emission reduction, how traditional high-carbon industries and high-carbon enterprises can be transformed into low-carbon or zero-carbon enterprises, how traditional

intensive economic activities or market players can be transformed into low-carbon or zero-carbon emitters, and how to support and promote the development of green and low-carbon industries are the key points for China to achieve the goal of "dual-carbon". In 2022, China's issuance of green bonds that meet the CBI's definition of issuance totaled $85.4 billion, making it the world's largest market for green bond issuance. This provides a favorable development environment for the green development of enterprises in China. ESG investment methodology refers to investing in enterprises based on their ESG rating performance, which evaluates the company from the three aspects of environmental governance (E), social responsibility (S), and corporate governance (G). ESG can convey to market participants non-financial information, such as corporate value, strategic decision-making, product safety, and corporate culture, that financial statements are unable to convey, so as to more comprehensively assess the company's governance capability and sustainable development level. ESG can convey non-financial information such as corporate value, strategic decisions, product safety and corporate culture to market participants, which cannot be conveyed by financial statements, thus assessing the company's governance ability and sustainable development level more comprehensively. Therefore, the ESG rating level can positively respond to the enterprise's investment in green development and reflect the enterprise's high-quality development level. If enterprises want to improve ESG rating level, they must invest a lot of money in green and low-carbon development. High-carbon enterprises have great influence and destructiveness on the environment in their production activities, and the polluted environment is often difficult to be repaired or requires a long time to be repaired, and the transformation and development of high-carbon enterprises are faced with problems such as great difficulty in governance, a long period of governance and lack of funds, etc. However, green finance can provide a large amount of financial support for the green development of enterprises and lead the enterprises to green, sustainable and sustainable development, as well as to provide a large amount of financial support. However, green finance can provide a large amount of financial support for the green development of enterprises and lead them to green, sustainable and high-quality development. How enterprises use green bonds, green loans and other green financial products to achieve transformation and upgrading or technological innovation to improve their ESG ratings is an important concern for enterprises to achieve high-quality development.

The ecological environment is deteriorating, environmental problems occur frequently, the enterprise as a macro and development of the micro body, shoulder the burden of survival and development, development and protection, its high-quality development will be a necessary condition to achieve the high-quality development of the national economy, and the development of green finance can help the enterprise to open up the financial channels, help enterprises better complete the investment in green development or green transformation and upgrading, to achieve sustainable enterprises, High-quality development, to help build a low-cost, high-efficiency circular economy and environmentally friendly economy.

This thesis is as follows. First, the terms of carbon peak and carbon neutrality are explained, and then the impacts of excessive carbon emissions on economic production activities are found through literature research. Next, the definitions of green finance at home and abroad are compared, and the literature analysis of how green finance can promote the high-quality development of enterprises is carried out. After that, how ESG can promote the green and sustainable high-quality development of enterprises is investigated from three aspects: ESG information disclosure, ESG performance evaluation and ESG investment. In the last section, the innovations and shortcomings of the whole paper are summarized and suggestions are put forward. In conclusion, the innovations and shortcomings of the whole paper are summarized and suggestions are made.

2. Peak Carbon & Carbon Neutral

Peak Carbon refers to a region or industry where annual carbon dioxide emissions have reached a historical high, and then after a period of plateau stabilization enter a process of continuous decline,

which is the historical inflection point of carbon dioxide emissions from increasing to decreasing, marking the decoupling of carbon emissions from economic development.

Carbon neutrality refers to the total amount of carbon dioxide emitted directly or indirectly by human production activities in a certain region within a certain period of time (generally one year), and offsetting carbon dioxide emissions generated by production activities through other energy-saving and emission-reduction low-carbon behaviors, such as the use of green and clean energy sources, planting of trees and forests, and transformation and upgrading of industries, so as to achieve a relatively "zero-emission" or "net-emission" of carbon dioxide. "Or "net emission".

Carbon peak and carbon neutrality are closely linked, with carbon peak being the basis and premise of carbon neutrality, and the early or late arrival of the world's carbon peaks and the level of the peaks directly affecting the speed and difficulty of achieving carbon neutrality; while carbon neutrality is a tight constraint on carbon peaks, requiring that action programmes for reaching the peaks must be designated under the lead of achieving carbon neutrality. At present, in order to have a unified standard in measuring the time course of carbon peak and carbon neutrality, to make the quantity of emission reduction "measurable, reportable and verifiable", to effectively track the carbon footprint, to calculate the actual effect of emission reduction and to set milestones, the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) have jointly developed the "Greenhouse Gas Accounting" (GHG Accounting) programme. The World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) have jointly developed the Greenhouse Gas Accounting System: Guidelines for Corporate Accounting and Reporting (GHGAS) to help governments, non-government organizations and corporations to develop standardized carbon inventories and to identify opportunities for emissions reductions in order to achieve their greenhouse gas emission reduction targets.

Currently, in China according to the 2022 bp World Statistics Yearbook, China's energy-generated carbon dioxide emissions account for 31.1% of the world's total emissions, and it is difficult for China to change the status of fossil energy as the country's thematic energy source in a short period of time. Although the carbon emissions rise with the increase in economic growth rate, but excessive carbon emissions will lead to an increase in the temperature, and extreme high temperatures will be frequent when the global warming reaches 2 °C reach critical tolerance thresholds for human health, affecting labor health and work capacity, leading to a reduction in labor input [1]. As labor inputs decline and productivity falls, the capital stock decreases, net wealth declines and consumer spending is squeezed, weakening the economy's endogenous growth dynamics. Overall, the impact of climate change on output is on the negative side, with higher warming leading to greater economic losses. In the absence of mitigation measures, global temperatures will rise by 2-2.6°C above pre-industrial levels by mid-century, with a loss of 11-14 per cent of global GDP from the no-warming scenario. A warming scenario of 3.2°C results in a loss of global GDP of up to 18 percent. The loss of GDP drops to 4.2 percent when warming is limited to 2°C. Second, in a dynamic environment, firms' carbon reduction efforts, carbon reduction levels, and firms' profits all increase over time, and the presence of competitors can largely undermine manufacturers' incentives to reduce carbon emissions; as long as there are firms that engage in low-carbon technological innovations, this will be conducive to increasing consumer surplus and total social welfare.

3. Green Finance

Green finance has been defined internationally with different connotations at different times. In the early days, the definition of green finance was almost equivalent to environmental finance, and it was believed that any financial activity that promoted environmental protection and resource conservation could be regarded as green finance. At the end of the 20th century, the international community paid more attention to the issue of global climate change, at which time green finance was substituted with climate finance and carbon finance, and green finance was regarded as financial activities to reduce carbon emissions and climate change. At the beginning of this century, the world's

leading financial institutions put forward the Equator Principles, and the Financial Action Task Force (FATF) of the United Nations Environment Programme (UNEP) made a distinction between green finance and green investment, arguing that green finance is not only about investments made by environmental protection departments, but also includes other financing projects, such as the preparation of financing projects, and the acquisition of land for projects. In September 2016, the G20 Green Finance Report was released, defining "green finance" as investment and financing activities that generate environmental benefits in support of sustainable development. Environmental benefits in this context include reducing air, water and soil pollution, reducing greenhouse gas emissions, improving environmental efficiency, and addressing and adapting to climate change and its synergistic effects.

China's definition of green finance, in August 2016, the People's Bank of China and seven other ministries and commissions jointly issued the Guiding Opinions on Building a Green Financial System, which defines green finance as economic activities that support environmental improvement, climate change response, and the economical and efficient utilization of resources, i.e., financial services provided in the areas of environmental protection, energy conservation, clean energy, green transport, green buildings, etc., such as project investment and financing, project operation, risk management, etc. The Opinion defines green finance as the financial services provided for project investment and financing, project operation and risk management in the fields of environmental protection, energy conservation, clean energy, green transport and green building. The report also points out that a green financial system is an institutional arrangement that supports the transition of the economy to greening through financial instruments and related policies, such as green credit, green bonds, green stock indices and related products, green development funds, green insurance and carbon finance. From the definition of the green financial system, the forms of green financial services can be simply understood as green credit, green bonds, green insurance and other green financial services.

In the exploration of the direction and path of green financial development, commercial banks are the main body to carry out green finance, and in the Theory of Green Financial Relationships, it explains in detail that the four elements of society, economy, ecology and finance are interacting with each other, and puts forward that green finance is a correct study in line with the development of the times. The development of green finance by commercial banks is a reflection of the strategic transformation of commercial banks and a manifestation of the fulfilment of social responsibility. From the scale of issuance of green bonds and green loans, China's total issuance has increased substantially, and China has also become the world's number one issuer of green bonds in 2022, but as a whole, China's green finance is still in the early stages of development, and the future needs to continue to promote the standard system, financial supervision, information disclosure requirements, incentives and constraints mechanism, and so on. Chen argues that China's green financial institutional system standards are not uniform, product structure innovation is insufficient, uneven development and other issues [2]. China's green finance started earlier, the scale and potential of green investment is huge, but the lack of good policies and markets as well as green financial products and services are still imperfect. Xie and Cheng believe that China's green finance concept is deeply rooted in people's hearts, the course of diversified development, but the policies and mechanisms are not yet perfect [3]. Dai believes that China's current green finance exists in the lack of product systems and innovation, and has not formed a perfect regulatory mechanism [4]. Through the analysis of the above scholars, it is believed that China's development of green finance is characterized by a large scale and large number, and the future development of green finance has great potential, but there is a lack of product innovation, a weak foundation, and a lack of supervision system and other problems. In the future, commercial banks should increase their investment in green finance business, accelerate the completion of a perfect supervision system, information disclosure and product innovation, and better promote the high-quality development of enterprises.

The context of dual-carbon green development promotes the development and growth of green finance in the banking sector, which plays an important role in promoting the green development of

the economy. Fan et al. found that green credit policy can influence banks to give loans to enterprises to promote the green and sustainable development of enterprises [5]. Wang and Zhou found that green finance has a significant role in promoting enterprise innovation, and green invention patents can significantly improve the environmental performance and financial performance of enterprises [6]. Du and Ran found that green finance can effectively inhibit carbon dioxide emissions, and promote the green transformation and upgrading of industries and the development of green technology [7]. In the bond market, Tang and Zhang found that the issuance of green bonds will cause a positive response of stock prices in the financial market [8]. For enterprises, the development of green finance can help enterprises to improve the need for green sustainable development, so that enterprises shoulder certain social responsibilities, and the practice of green development by enterprises can significantly enhance their value.

4. ESG System

ESG is the abbreviation of Environment (E), Society (S) and Corporate Governance (G), which is an important assessment standard other than the basic performance of the enterprise. It is an important indicator that can be used to evaluate the sustainable development of the enterprise, and the investor can manage the risk to obtain a sustainable income return according to the ESG evaluation index. Different from the traditional investment concept that only focuses on financial data, ESG focuses more on the sustainable long-term development of enterprises in the context of the times; The United Nations Principles for Responsible Investment require enterprises to take ESG performance into account when assessing their own value, and more and more investors will take ESG performance into account when choosing investment enterprises and formulating investment plans. As the concepts of green sustainable development and "dual-carbon" have been widely disseminated globally, the ESG evaluation system occupies an absolutely important position in the green financial system, and has gradually become an irreplaceable cornerstone for socially responsible investment in contemporary society. Domestic and international research on ESG evaluation system mainly focuses on three aspects: ESG information disclosure, ESG rating and ESG investment. Firstly, research in ESG disclosure. Mi found that enterprises improve the level of ESG disclosure can reduce the cost of corporate equity financing, and listed companies with high ESG disclosure have higher investment value [9]. Bai et al. studied A-share listed companies from the perspective of institutional investors' preference, and used the proportion of institutional investors' shareholding as an intermediary variable to conclude that there is an intermediary role in the process of ESG affecting enterprise value [10]. In China, Chen and Sun studied that there is a big gap between domestic ESG disclosure and foreign countries, and there is no unified evaluation standard, and China's ESG disclosure exists problems such as weak data base and unsound information disclosure mechanism [11]. Zhang et al. argued that the government should standardize the ESG rating system, formulate perfect ESG disclosure guidelines, and construct an ESG evaluation system suitable for China [12]. In terms of the role mechanism of ESG disclosure, Huang et al. argue that the role mechanism of ESG disclosure is manifested in three aspects: improving stakeholder relations, enhancing corporate reputation and reducing information asymmetry between the two sides of investment [13].

Second, research on ESG rating system. Shi et al. found that ESG performance significantly promotes the improvement of corporate market power and promotes the healthy and sustainable high-quality development of the real economy [14]. ESG assessment is important for enterprises to improve their returns and reduce long-term investment risks, and has a higher investment value. Guan found that there is a significant positive correlation between ESG rating performance and enterprise value, and the better the ESG performance, the higher the enterprise value of the company [15]. Xie et al. believed that the better the ESG performance of the enterprise the lower its financial risk, and can shape a good corporate image in the construction of the domestic ESG evaluation system [16]. Qin believes that the domestic ESG rating system is still in the primary stage, and financial institutions should learn from the mature experience of ESG rating agencies, explore ESG indicators in line with

China's localization, and continuously improve and perfect them, with a view to establishing a set of ESG rating system with Chinese characteristics [17]. The domestic ESG rating system is in the primary stage of exploration, compared with the mature evaluation system in foreign countries, there are large differences, ESG ratings are crucial to the sustainable and high-quality development of enterprises, China needs to accelerate the construction of a rating system in line with China's national conditions.

Finally, ESG investment is consistent with the concept of value investment and can bring long-term investment returns to investors. Cai and Zhang found that fund companies signing the UN Principles for Responsible Individuals (PRI) is a credible commitment to ESG investment, and signing the PRI initiative significantly increased fund companies' investment preference for green innovative companies and improved the green development of the underlying companies, while green transformation significantly improved fund performance [18]. Kim found that institutional investors preferred to invest in green innovative enterprises marked by ESG, whose high ESG performance and green innovation ability bring more quantitative investment benefits to enterprises, and are more likely to develop over the long term, with long-term value [19]. ESG investment will become a key path to lead social resources to promote the ESG development of enterprises, which is highly in line with the requirements of high-quality development of the economy.

5. Conclusion

Scholars at home and abroad on how green finance promotes the high-quality development of enterprises mostly discuss green financial policies or products and ESG evaluation system separately, while there are many common points between green financial policies or products and ESG evaluation system, such as green financial products and good ESG ratings can promote the development of enterprises, etc. This paper combines the ESG evaluation system with the green financial policies or products, which can better promote the healthy, sustainable and high-quality development of enterprises and achieve the goal of "double carbon" of China under the joint influence of both parts. This paper will combine the ESG evaluation system with green financial policies or products, and under the joint influence of the two parts, it can better promote the healthy, sustainable and high-quality development of enterprises, promote the rapid development of China's green economy, and realize China's "dual-carbon" goal. However, the current ESG evaluation system in China is not perfect, and there is a big difference with foreign countries. The ESG rating methodology has not been fully popularized in China, and the data collection is not universal.

Under the dual-carbon background, China takes green development as the concept, and green finance develops rapidly, and its green loans, green securities and other green financial products directly provide a large amount of capital funds for the development of enterprises, which help enterprises to successfully transform and upgrade, and realize the green sustainable development of enterprises; secondly, green finance can also indirectly promote the upgrading of the ESG performance of enterprises, so as to promote the enhancement of the value of the enterprise, and realize the high-quality development of the enterprise; Green finance is conducive to improving corporate ESG ratings, and the development of green finance has a positive impact on ESG performance. Combining green finance with ESG rating system can better identify green development enterprises and accurately help green enterprises to develop rapidly; investor institutions are also more willing to issue green loans and green securities to enterprises with high ESG rating system. In the future, China should speed up the formulation of unified green development goals, and combine the green financial evaluation system with the ESG information disclosure system, which can better regulate China's green financial market norms; the issuance of green loans, green bonds and other financial products by enterprises with ESG evaluation indexes, which can better help banks identify the risk of loans and investors control the risk of bond purchases; and the enterprises can better identify green enterprises under the leadership of ESG investment concepts, and accurately help green enterprises develop rapidly. Under the guidance of ESG investment concept, enterprises can better

achieve green and sustainable high-quality development, and increase the number of green development enterprises in China's financial market, thus feeding the development of China's green financial market.

References

[1] Intergovernmental Panel on Climate Change. (2021). Climate Change 2021: The Physical Science Basis.

[2] Chen, Y. (2021). Current Situation and Suggestions for Green Finance Development. Financial News, (7), 152.

[3] Xie, K. & Cheng, J. (2020). Sustainable development of green finance. China Collective Economy, (9), 93-94.

[4] Dai, J. (2023). Status quo, challenges and strategies of China's commercial banks in developing green finance. National Circulation Economy, (4), 133-136.

[5] Fan, H. & Peng, Y. & Wang, H. (2021). Greening through finance. Journal of Development Economics, 152, 102683.

[6] Wang, Y. & Zhou, Y. (2023). Green Finance Development and Corporate Innovation. Research in Finance and Economics, (1), 49-62.

[7] Du, Y. & Ran, Y. (2023). The Impact of Green Finance on Carbon Emissions. Contemporary Economy, (12), 55-65.

[8] Tang, D. & Zhang, Y. (2020). Do shareholders benefit from green bonds? Journal of Corporate Finance, 61, 101427.

[9] Mi, J. (2023). Private enterprises when exploring the road of internal audit model optimisation. New Jinshang, (6), 81-83.

[10] Bai, X. & Zhu, Y. & Han, J. (2023). ESG performance, institutional investor preference and corporate value. Statistics and Information Forum, (10), 117-128.

[11] Chen, N. & Sun, F. (2019). Comparison of the development of domestic and international ESG systems and the proposal of building ESG system in China. Development Research, (3), 59-64.

[12] Zhang, J. & Zhang, X. (2024). ESG disclosure, green innovation and high-quality corporate development. Science and Technology Entrepreneurship Monthly, (1), 1-6.

[13] Huang, J., Wang, Y., Han, F., & Li, Y. (2022). ESG disclosure: connotation analysis, evaluation method and mechanism. Foreign Economics and Management, (6), 3-18.

[14] Shi, X., Jiang, Z., & Bai, D. (2023). How ESG performance enhances corporate market power. Industrial Economics Review, (5), 109-125.

[15] Guan, C. (2024). How ESG performance affects corporate value - an empirical study based on A-share manufacturing listed companies, Zhejiang University.

[16] Xie, C. & Li, W. (2023). Can firms improve ESG performance reduce financial risk? --Empirical evidence from Chinese listed companies. Journal of Hunan University (Social Science Edition), (2), 51-58.

[17] Qin, L. (2023). Status quo, problems and development suggestions of China's ESG evaluation system. Knowledge Economy, (36), 74-76+113.

[18] Cai, G. & Zhang, Y. (2023). Fund ESG investment commitment effect - A quasi-natural experiment from public funds signing PRIs. Economic Research, (12), 22-40.

[19] Kim, A. (2021). A study on high ESG investment preference of insurance funds - based on the analysis of company long-term value investment path. Finance and Economy, (11), 14-24.