

Literature Review on the Impact of Green Finance on High-Quality Economic Development

Yuanrui Zhang^{1, a}, Yuchun Jiang^{1, b}, Deyi Chen^{2, c}, Chaoyu Zhang^{3, d}

¹ School of Big Data Application and Economics, Guizhou University of Finance and Economics, Guiyang 550025, China;

² School of Economics and Management, Guizhou Normal University, Guiyang 550025, China;

³ School of Foreign Languages, Guizhou University of Finance and Economics, Guiyang 550025, China

^a zyr11205347@163.com, ^b gcjyc1012@mail.gufe.edu.cn, ^c 1982791753@qq.com, ^d 1797346758@qq.com

Abstract. Green finance (GF) has a positive impact on high-quality economic development (HQED). By providing environmental-friendly and sustainable investment and financing support, GF guides resources to flow into the environmental protection industry and green development fields, reducing environmental pollution and ecological damage, and promoting economic structural adjustment and industrial upgrading. At the same time, GF can also promote companies to take on social responsibility and enhance their awareness of sustainable development. However, GF faces challenges in the HQED, including the establishment of GF standards and evaluation systems, improvement of innovative capabilities and market competitiveness of products and services, and strengthening of regulatory measures and risk prevention. This article reviews relevant research on GF, HQED, and the role and impact mechanism of GF on HQED.

Keywords: Green finance; high-quality development; influencing mechanism.

1. Introduction

The impact of green finance (GF) on high-quality economic development (HQED) is an increasingly important topic of concern. With global environmental issues becoming more severe, GF, as an innovative financial tool, is gradually becoming a significant force in promoting sustainable economic development. GF guides resources to flow towards environmental protection industries and green development areas by providing investment and financing support for environmental protection and sustainable development. This not only helps reduce environmental pollution and ecological destruction but also promotes economic structural adjustment and industrial upgrading. The development of GF can also promote companies to take on social responsibility and enhance their awareness of sustainable development, further promoting the green transformation of the economy and society. However, the development of GF also faces several challenges. Issues such as establishing scientifically reasonable GF standards and evaluation systems, improving the innovation capabilities and market competitiveness of GF products and services, and strengthening GF regulation and risk prevention and control all require in-depth research and resolution. Overall, the impact of GF on HQED is positive and far-reaching. We should further strengthen the research and practice of GF to promote sustainable economic and social development. Based on this, this article systematically reviews the relevant literature on the impact of GF on HQED and provides a summary of these studies to grasp the frontier research dynamics and offer thought-provoking insights.

This article explains the theoretical and practical progress of GF and HQED, analyzes their impact mechanism, and puts forward suggestions for future research directions. The rest of this article is organized as follows. Section 2 combs the relevant literature of GF. Section 3 combs the relevant literature on HQED. Section 4 combs the literature on the impact of GF on HQED. Finally, section 5 summarizes the article and looks forward to future research.

2. Related Research on GF

With the increasing emphasis on sustainable development, the research on GF has been enriched by academics at home and abroad. In the early stage of research on GF theory, most foreign scholars conducted research from the perspective of “finance and sustainable development”, and Cowan (1999)[1] points out that GF highlights the harmonious development between the environment and the economy, and guides the capital flow of the financial industry to the field of environmental protection, thus promoting the healthy development of the industrial structure. Labatt and White (2002)[2] explicitly state that GF has become one of the focus issues of the international community; GF represents an innovative financial strategy, the utilization of which can significantly enhance the quality of the environment and have a far-reaching impact on the transfer of risks related to environmental protection.

Other scholars have explored the effects of GF on green energy and carbon emissions in both the long and short term. Bakry et al (2023)[3] empirically tested the long-term and short-term effects of GF, and found that GF can help developing countries reduce carbon dioxide emissions. And GF plays a key role in helping the development of the renewable energy industry. Zhang et al (2022)[4] used a simultaneous equation model to study the interaction between innovation, GF and energy-environment-climate coherence in 49 countries around the world, and the results indicated that innovation can significantly promote renewable energy consumption, reduce carbon dioxide emissions, while GF can effectively reduce environmental pollution and climate change. The positive impact of innovation on renewable energy consumption increases with the improvement of the level of GF. Desalegn and Tangl (2022)[5] found that the main reason for the gap in green investment funds is the absence of coordination between financial and environmental policies, and how to attract private investment for green investment is a matter of concern through the summary of the studies published after 2015.

As for the research of domestic scholars, many scholars analyze the connotation of GF, construct an evaluation system to measure GF, and assess the contribution of various branches of GF to environmental protection. Lu Lu et al (2023)[6] conducted a systematic analysis of the theoretical logic and development status of green credit financing, sorted out the relevant policies and measures, summarized the mechanism and characteristics of the role of green credit, and proposed to build a new model of GF guarantee service from the levels of standard setting, risk sharing incentives, regulating the development of guarantee institutions, and perfecting the construction of supporting systems from the perspective of the problem and against the international experience and practice. Su Dongwei and Lian Lili (2018)[7] constructed a quasi-natural experiment on the release of the Green Credit Guidelines in 2012 to examine the impact of green financial policies on the financing behavior of heavy polluting enterprises. The study found that green credit has a significant financing penalty effect and investment suppression effect.

The above research on the evaluation index system of GF provides valuable reference materials for domestic and foreign researchers in their related scientific exploration. Scholars have carried out investigations and evaluations of the development status of the GF industry in China, and have already obtained a number of research results on evaluating the development status of GF. As the term GF appeared late and its connotation is quite rich, the academic community has not yet reached a consensus on the connotation of this concept and the measurement method. The research on GF by foreign scholars mainly focuses on exploring how the green financial market promotes the production activities of enterprises and the mitigating effect on the level of environmental pollution. Domestic scholars' research mainly focuses on theoretical discussions and exploring the importance and functions of GF, and has not yet formed a complete and systematic theoretical system.

3. Related Research on HQED

HQED is not only rich in connotation, but also expanding and deepening in practice. Globally, early comparative studies on economic growth in different countries pointed out that economic growth is basically equivalent to economic development. However, with the development of human society and the deepening of research, scholars have gradually deepened their understanding of economic growth and economic development, and gradually clarified the difference between the two. Barro(2003)[8] and his team provided an in-depth comparison and clear delineation of the two concepts of quality and quantity in economic growth. This study have shown that the quality of economic development is closely related to the speed of economic development, and the quality of economic growth is affected by many factors. When evaluating the economic growth of a region, we cannot rely solely on GDP per capita; in order to give a true picture of economic development, it is necessary to explore in depth the role of science and technology, culture, and daily life in order to assess the overall progress of the economy in a comprehensive manner. Mlachila (2014)[9] and his team first constructed the QGI index, which is used to assess the stability of economic growth in China. By using the QGI index, they compared the differences in economic growth between different regions of China and found that the chosen QGI index covers a wide range of aspects such as macroeconomic growth and social welfare. The index is not only applicable to developed countries, but also suitable for developing countries. After an in-depth study of the LERD program in Indonesia, Rokhim et al (2017)[10] suggests that in order to promote high-quality economic growth, government assistance as well as the injection of social capital and resources are indispensable.

In exploring the definition and measurement of HQED of China, domestic researchers have adopted a number of dimensions, such as the new social outlook on development, the macro and micro perspectives, and the perspectives of market demand and inputs and outputs, for in-depth study and interpretation. Wei Min and Li Shuhao (2018)[11] used the entropy weight method to construct a measurement system for the level of HQED. They characterized HQED from ten aspects: optimizing economic structure, driving innovation, efficient resource allocation, improving market mechanisms, stabilizing economic growth, promoting regional coordination and sharing, providing quality products and services, perfecting infrastructure, building ecological civilization, and benefiting the people with economic achievements. The measurement results revealed that the comprehensive level of HQED of China shows a clear spatial distribution pattern of “high in the east, moderate in the central, and low in the west”.

As economic and social development enters a new normal, scientific evaluation of HQED is also of great significance. Foreign scholars started their research on the measurement of HQED earlier and achieved more mature research results, which provides valuable practical experience for Chinese scholars in this field. Domestic academics mainly focus on how to scientifically define the concept of HQED, how to measure HQED and how to realize high-quality development. For the measurement of HQED, it is quite arbitrary to rely only on a single indicator to measure its connotation, and it is necessary to construct an all-round indicator calculation system. There is no assessment system that has been widely recognized by the society at home and abroad so far.

4. Related Research on the impact of GF on FQED

With the continuous deepening of GF-related research, as well as the continuous expansion and deepening of the new concept of HQED, many scholars have started to focus on the role of GF in realizing HQED, and to explore the impact mechanism of GF on HQED.

4.1 GF promotes economic efficiency and HQED

GF can better meet the energy needs of modern economy and society (Azhgaliyeva and Liddle, 2020)[12], and the more GF, the more labor, land, and other resources are invested, which can be used more efficiently, thus realize the efficient development of the economy. Private participation

in green financial investment needs to improve the return rate of green financial projects design and increase the transparency of green financial investment from the perspective of system (Taghizadeh-Hesary and Yoshino, 2019)[13]. Lin and Xiao (2023)[14] found that GF can significantly promote HQED in terms of technological innovation, industrial coordination, resource consumption and social security.

4.2 GF optimizes economic structure and promotes HQED through industrial coordination mechanisms

Ramiah and Gregoriou (2015)[15] found that GF can utilize financial instruments to realize the transformation of industrial structure by guiding investment towards energy-saving and environmental protection industries. Ding et al. (2021)[16] used the Chinese data to study the impact mechanism of green financial policy on HQED. Green financial policy has a positive impact on HQED by improving enterprise technology and promoting industrial structure optimization. He and Liu (2018)[17] found that GF can pry highly polluting and energy-consuming enterprises to transform to green industries by restricting credit policies, and with more enterprises transforming to green industries, which ultimately promotes HQED.

4.3 GF promotes HQED through fintech

Fintech has injected new vitality into the development of GF by alleviating information asymmetry, increasing the supply and innovation of green financial products, improving the level of green financial services, and comprehensively empowering GF (Huang and Wang, 2022)[18]. Fintech improves the boundary conditions that affect the effectiveness of GF for HQED (An et al, 2021)[19]. HQED requires large amounts of capital to be invested in sustainable infrastructure (Hafner et al, 2020)[20]. GF can further bridge this gap by combining it with fintech to improve the availability of financing for green projects. Fintech is highly flexible and efficient, which is conducive to the development of GF and enhances the positive impact of GF on HQED.

5. Conclusion

By providing investment and financing support for environmental protection, GF guides the flow of resources to environmental protection industries and green development areas, helps reduce environmental pollution and ecological damage, and promotes economic restructuring and industrial upgrading. Simultaneously, the development of GF can also promote the improvement of corporate social responsibility and sustainable development awareness, and further promote the green transformation of the economic society. GF not only contributes to environmental protection and sustainable development, but also has a positive effect on HQED. Therefore, we need to strengthen research and practice in related areas, formulate scientific and reasonable green financial standards and evaluation systems, improve the innovation capacity and market competitiveness of green financial services, strengthen green financial supervision and risk prevention and control, and promote HQED. In the future, GF will receive more attention. The green financial system, the impact of GF on the environment and carbon emissions, and the impact of GF on the technology industry still need detailed and professional research. How to promote private capital to participate in GF, how to improve the transmission mechanism of GF to HQED, these are worthy of consideration.

Acknowledgements

This study is supported by the Key Project of Philosophy and Social Science Planning in Guizhou Province "Mechanism and Path Research on Green Finance to Promote High Quality Economic Development in Guizhou" (No.: 2020GZZD61).

References

- [1] Cowan E. Topical issues in environmental finance. Research paper was commissioned by the Asia Branch of the Canadian International Development Agency (CIDA), 1999, 1: 1-20.
- [2] Labatt S, White R R. Environmental finance: a guide to environmental risk assessment and financial products. John Wiley & Sons, 2002.
- [3] Bakry Walid, Mallik Girijasankar, Nghiem Xuan-Hoa. Is green finance really “green”? Examining the long-run relationship between green finance, renewable energy and environmental performance in developing countries. *Renewable Energy*, 2023, 208: 341-355.
- [4] Zhang K Q, Chen H H, Tang L Z, et al. Green Finance, Innovation and the Energy-Environment-Climate Nexus. *Frontiers in Environmental Science*, 2022, 10
- [5] Desalegn Goshu, Tangl Anita. Enhancing Green Finance for Inclusive Green Growth: A Systematic Approach. *Sustainability*, 2022, 14(12): 7416-7416.
- [6] Lu L, He L, Zhou K, et al. Green credit financing guarantee: theoretical logic, practice and challenge. *Southwest Finance*, 2023, (12): 29-40.
- [7] Su D W, Lian L L. Does green credit affect the investment and financing behavior of heavily polluting enterprises. *Journal of Financial Research*, 2018, (12): 123-137.
- [8] Barro R J. Quantity and quality of economic growth. Banco Central de Chile, 2002.
- [9] Mlachila M M, Tapsoba R, Tapsoba M S J. A Quality of Growth Index for Developing Countries: A Proposal. International Monetary Fund, 2014.
- [10] Rokhim R, Wahyuni S, Wulandari P, et al. Analyzing key success factors of local economic development in several remote areas in Indonesia. *Journal of Enterprising Communities: People and Places in the Global Economy*, 2017, 11(4): 438-455.
- [11] Wei M, Li S H. Research on the measurement of China's high quality economic development level in the new era. *Journal of Quantitative & Technological Economics*, 2018, 35(11): 3-20.
- [12] Azhgaliyeva D, Liddle B. Introduction to the Special Issue: Scaling up Green Finance in Asia. Taylor & Francis, 2020.
- [13] Taghizadeh-Hesary Farhad, Yoshino Naoyuki. The way to induce private participation in green finance and investment. *Finance Research Letters*, 2019, 31: 98-103.
- [14] Lin M X, Xiao Y B. Research on the measurement and mechanism of green finance promoting high-quality economic development. *Modern Economic Science*, 2023, 45(03): 101-113.
- [15] Ramiah V, Gregoriou GN. Handbook of Environmental and Sustainable Finance. Elsevier, Amsterdam, 2015
- [16] Ding P, Jin W H, Chen N. Green financial development, industrial structure upgrading and sustainable economic growth. *South China Finance*, 2021, (02): 13-24.
- [17] He L Y, Liu L. Stand by or follow? Responsibility diffusion effects and green credit. *Emerging Markets Finance and Trade*, 2018, 54(8): 1740-1760.
- [18] Huang Z, Wang P P. Fintech empowers the development of green finance: mechanism, challenges and countermeasures. *Social Science Journal*, 2022, (05): 101-108.
- [19] An S, Li B, Song D, et al. Green credit financing versus trade credit financing in a supply chain with carbon emission limits. *European Journal of Operational Research*, 2021, 292, 125–142.
- [20] Hafner S, Jones A, Anger-Kraavi A, et al. Closing the green finance gap – a systems perspective. *Transit. Environmental Innovation and Societal Transitions*, 2020, 34, 26–60.