

Research on the Role and Mechanism of Green Finance in Daily Economic Activities

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Abstract. With the increasing severity of global ecological and environmental issues, green development has become the core direction of economic transformation in various countries. As a key link connecting financial resources and the green industry, green finance has become increasingly prominent in daily economic activities. With green finance as the study object, this paper uses the literature review approach to systematically run through its background of emergence and theoretical foundations, then deeply analyzes its function in guiding social capital flow in daily economic activities, promoting enterprises' green transformation, and optimizing residents' consumption structures. Finally, it tries to explore the core mechanisms that can be realized by policy guidance, market incentives, and risk management. The research finds that green finance can effectively alleviate the financing constraints of green projects and promote industrial structure upgrading; however, it still faces challenges such as inconsistent standards and insufficient product innovation. In the future, it will be necessary to improve the policy system and market environment further, enhance the inclusiveness and effectiveness of green finance, and provide support for high-quality economic development.

Keywords: Green Finance, Daily Economic Activities, Mechanism of Action, Financing Constraints, Green Transformation

1. Introduction

Driven by the "dual carbon" goals and the global sustainable development strategy, the traditional high-energy-consuming and high-pollution economic development model has gradually become unsustainable, and the green and low-carbon transformation of economic activities has become an inevitable trend. As the microfoundation of national economic operation, daily economic activities encompass multiple dimensions, including enterprise production and operation, residents' consumption, and social capital flow. The progress of their green transformation directly affects the realization of overall green development goals. Through innovative financial products and services, such as green credit, green bonds, and green insurance, green finance provides capital support and institutional guarantees for the greening of daily economic activities, becoming an important tool to address the financing difficulties of green projects and guide economic behavior towards sustainable development.

Taking "the role and mechanism of green finance in daily economic activities" as the research theme, this paper mainly adopts the literature survey method. By retrieving core domestic and foreign journals, policy documents and authoritative reports, it systematically integrates the theoretical achievements and practical cases related to green finance. It sorts out the application status in daily economic scenarios.

The significance of this research lies in: theoretically, it can enrich the research system on the interactive relationship between green finance and microeconomic activities, and make up for the deficiency of existing research in paying insufficient attention to "daily economic scenarios"; practically, it can provide reference for policymakers to optimize green finance policies, financial institutions to innovate green products, and enterprises and residents to participate in green economic activities, helping to build a more efficient and inclusive green finance ecosystem and promote the green and sustainable development of economy and society.

2. Theoretical foundation and development status of green finance

The theory of green finance originates from environmental economics and financial innovation theory, with its core being the incorporation of ecological externalities into the financial decision-making framework and the rational allocation of environmental resources through market-oriented means. According to the "polluter pays" principle, green finance encourages economic entities to mitigate negative ecological externalities through differentiated pricing. The sustainable development theory further emphasises that green finance must strike a balance between economic interests and environmental benefits, thereby achieving the unity of short-term profitability and long-term sustainable development.

In terms of development status, the global scale of green finance continues to expand. According to data from the People's Bank of China, by the end of 2023, the balance of domestic and foreign currency green loans in China had reached 28.58 trillion yuan, a year-on-year increase of 23.6%, accounting for 10.6% of the balance of all loans; the issuance of green bonds has ranked among the top in the world for many years, with an issuance volume exceeding 600 billion yuan in 2023, covering multiple daily economic fields such as energy, transportation, and construction [1]. Internationally, the European Union has established green financial product standards through the Sustainable Finance Disclosure Regulation (SFDR) [2]. At the same time, the United States has introduced the "Inflation Reduction Act" to provide tax incentives for green projects. The global green finance policy system is gradually improving, but differences in standards among different countries still bring obstacles to cross-border green economic activities.

3. Core roles of green finance in daily economic activities

3.1. Guiding the flow of social capital to green fields and alleviating financing constraints of green projects

Green projects in the daily economy (such as enterprise energy-saving transformation, residents' green building decoration, and urban green transportation construction) generally have the characteristics of a long investment cycle, high initial cost, and slow return on investment [3]. Traditional financial institutions are often reluctant to get involved due to risk aversion. Through policy guidance and product innovation, green finance effectively solves this problem. On the one hand, the central bank provides low-cost funds to financial institutions through the "green re-lending" tool, encouraging them to lend to environmentally friendly projects. On the other hand,

products such as green bonds and green funds broaden financing channels and attract participation from social capital. For example, a new energy vehicle enterprise in China raised 5 billion yuan by issuing green bonds in 2023 for the construction of a power battery recycling production line. This not only solved the capital demand for the enterprise to expand its green production capacity but also promoted the development of the circular economy in the automobile industry.

3.2. Promoting enterprises' green production transformation and reducing environmental risks in operation

As the core subject of daily economic activities, enterprises' production models directly affect environmental quality. Green finance promotes enterprises' transformation through a dual mechanism of "incentive + constraint" [4]. On the incentive side, financial institutions offer lower interest rates on credit to enterprises that adopt clean production technologies and meet environmental standards [5]. For example, a commercial bank in China provides a 10%-15% reduction of loan interest rate to manufacturing enterprises with environmental rating as "excellent"; on the constraint side, it implements measures such as credit quotas and higher loan interest rates for high energy consuming and high polluting enterprises to force them to reduce pollutant emissions. According to statistics from the Ministry of Ecology and Environment, from 2020 to 2023, the average annual growth rate of loans to high-energy-consuming industries in China decreased by 4.2%, while the average yearly growth rate of loans to energy-saving and environmental protection industries reached 18.5%, showing a noticeable trend of enterprises' green transformation.

3.3. Optimizing residents' consumption structure and cultivating green consumption habits

Residents' consumption plays a crucial role in daily economic activities. Green finance guides residents to choose green consumption methods through innovative consumer financial products [6]. For example, many banks have launched "green home appliance consumer loans" and "new energy vehicle loans", which not only provide lower interest rate discounts (such as new energy vehicle loan interest rates being 2-3 percentage points lower than traditional fuel vehicles) but also simplify the approval process; some regions have piloted the "green consumption points" system, where residents can accumulate points by purchasing environmentally friendly products with green credit and redeem public service discounts, further stimulating green consumption willingness. Data from the National Bureau of Statistics show that by 2023, 9.495 million new energy vehicles were sold in China, up 30.3% year on year and the sales volume of green home appliances accounted for more than 25% of the total home appliance sales volume, green finance is optimizing consumption structure has a significant effect.

4. Analysis of the mechanism of green finance acting on daily economic activities

4.1. Policy guidance mechanism: clarifying the development direction and strengthening institutional guarantee

The government provides a framework for implementing green finance through the introduction of laws, regulations, industrial policies, and regulatory requirements [6]. Firstly, formulate green finance standards. For example, clarify the scope of green projects in the Catalogue of Green Bond Supported Projects (2021 Edition) in China to avoid "greenwashing" behaviors; secondly, implement financial subsidies and tax incentives, such as exempting financial institutions from part of the value-added tax on green loans issued and providing premium subsidies for enterprises to

purchase green insurance; thirdly, strengthen regulatory constraints, incorporate the green credit issuance of financial institutions into the Macro Prudential Assessment (MPA), and force financial institutions to attach importance to green business. The policy guidance mechanism ensures that green finance "has rules to follow" in daily economic activities and reduces information asymmetry and decision-making risks for market entities.

4.2. Market incentive mechanism: regulating economic behaviors through price signals

The market mechanism is the core pathway for green finance to impact the daily economy [7]. It guides the concentration of capital and resources to green fields through differentiated price signals. In the credit market, due to low environmental risks and clear policy support, green projects can obtain lower interest rates from financial institutions, forming a "green premium" advantage; in the bond market, green bonds have a broader investor base (such as ESG funds), and their issuance interest rates are usually 50-100 basis points lower than ordinary bonds, reducing enterprise financing costs; in the insurance market, green insurance (such as environmental pollution liability insurance) links premiums to enterprises' ecological risks, with higher premiums for enterprises with higher risks, prompting enterprises to strengthen environmental management. The market incentive mechanism allows subjects participating in green economic activities to obtain economic benefits, forming a virtuous cycle of "green profitability".

4.3. Risk management and control mechanism: diversifying environmental risks and stabilizing economic operation

Environmental risks (such as extreme weather and policy-driven production restrictions) have become essential factors affecting daily economic activities [8]. Green finance mitigates the impact of environmental risks on economic entities by leveraging risk diversification and transfer mechanisms [9]. Green insurance will play an environmental risk protective role on the part of enterprises. For instance, after a chemical company has acquired environmental pollution liability insurance, the insurance company shall bear 12 million yuan compensation caused by a sudden leakage accident, hence averting the firm from going into an operational crisis due to risk events. On the other hand, financial institutions can incorporate green risks into their credit decision process through green risk assessment tools (e.g., ESG rating), therefore finding high-risk projects in advance and lowering the creation of non-performing assets. The risk management and control mechanism enhances the risk resistance capacity of daily economic activities and provides a stable environment for green transformation.

5. Development suggestions

5.1. Improve the green finance standard system and break down cross-border cooperation barriers

Unify domestic green finance classification standards and information disclosure requirements, refine the identification rules for projects in fields such as new energy and energy conservation and environmental protection with reference to the framework of the Catalogue of Green Bond Supported Projects, clarify the legal definition and punishment measures for "greenwashing" behaviors, require enterprises to disclose core data such as environmental protection investment and emission reduction effects of green projects, and improve market transparency [10]. Strengthen international standard coordination, take the initiative to align with relevant standards such as the

EU's SFDR and the US's "Inflation Reduction Act", and promote mutual recognition of green project identification between China and foreign countries. For example, establish a whitelist system for cross-border green projects and simplify the cross-border financing approval process for the new energy vehicle industry chain. Encourage domestic financial institutions to participate in the formulation of global green finance rules, reduce the institutional costs of cross-border green capital flows, and provide financial support for Chinese enterprises to participate in international green infrastructure projects.

5.2. Strengthen product and service innovation and expand the coverage of green finance

Financial institutions need to launch customised products tailored to the needs of different sectors: develop "green credit loans" for small, medium, and micro enterprises (SMEs) [11], which do not require mortgage guarantees and are issued based on the enterprises' environmental credit ratings. For example, the "Green Enjoy Loan" launched by a commercial bank in Zhejiang for SMEs that meet environmental standards has accumulated investment of over 2 billion yuan; innovate green asset securitization products, package and issue the income rights of distributed photovoltaic projects and green credit claims to attract long-term capital such as social security funds and ESG funds; expand green consumer finance scenarios, and extend credit and insurance services to green home decoration, environmental tourism and other fields based on green home appliances and low-carbon travel. For example, the "green home decoration loan" launched by a state-owned bank has an interest rate 1.5 percentage points lower than that of ordinary home decoration loans, thereby activating residents' diversified demand for green consumption.

5.3. Optimize policy support and incentive mechanisms to enhance market participation motivation

Increase financial and tax support, expand the scope of green loan interest subsidies, provide 2%-3% interest subsidies for green credit issued by financial institutions to SMEs, and extend the tax exemption policy for interest income from green bond issuance. Improve the green finance assessment and evaluation system by incorporating indicators such as the scale of green credit issuance and the non-performing rate of green assets into the MPA assessment of financial institutions, with a weight increased to more than 15%. Additionally, tilt the central bank's green re-lending quota towards institutions with excellent assessments. Establish a provincial-level green finance risk compensation fund, and refer to the pilot experience in some regions to provide 30%-50% loss compensation for non-performing loans of qualified green projects, reducing the risk concerns of financial institutions and encouraging them to increase credit issuance.

5.4. Promote the integrated application of digital technology and improve the operational efficiency of green finance

Build a national unified green finance information sharing platform relying on big data and blockchain technology [12], integrate enterprise environmental credit data from the Ministry of Ecology and Environment, green industry output value data from the National Bureau of Statistics, etc., to realise the whole-life cycle dynamic monitoring of green projects from project approval to completion. For example, a "green finance big data platform" launched in a province has accessed environmental information of more than 2,000 enterprises, helping financial institutions accurately identify high-quality projects. Introduce artificial intelligence technology to optimize risk

assessment models and enhance the accuracy of environmental risk prediction by analyzing enterprise energy consumption data, environmental compliance records, and other relevant information. Promote the application of blockchain in green bond issuance. For example, the blockchain green bond issued by a new energy enterprise in 2023 realized real-time traceability of capital flow, ensuring that 100% of the raised funds are used for power battery recycling projects and guaranteeing the special use of green funds.

6. Conclusion

Through the literature survey method, this paper systematically analyzes the role and mechanism of green finance in daily economic activities and draws the following conclusions: Firstly, green finance can effectively guide the flow of social capital to green fields, alleviate the financing constraints of enterprises' green projects and residents' green consumption, and provide capital support for the greening of daily economy; secondly, it promotes enterprises' green production transformation through the "incentive + constraint" mechanism, and optimizes residents' consumption structure while cultivating green consumption habits; thirdly, policy guidance, market incentives and risk management and control jointly constitute the core mechanism of green finance acting on daily economy, and the three cooperate to ensure the implementation of green finance functions.

Going forward, research can be deepened around three directions: first, the integration path of green finance and digital economy for example big data, and block chain technology in the aspect of information transparency toward green projects and optimization on risk management and control for green finance; second, the problem of SMEs' green financing that how to further alleviate the difficulty and high cost of SMEs' green project financing through policy support and product innovation; third is an international coordination mechanism for green finance that how to reduce countries' differences in green standards to promote cross-border green capital flows to support global sustainable development.

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