

Research on the Impact of Green Finance Policy on Small and Medium Enterprises Financing

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ABSTRACT

This study examines the operational mechanisms and tangible outcomes of green finance policies on SME financing. Findings indicate these policies substantially enhance credit access and affordability for eligible small and medium-sized enterprises through instruments like interest subsidies, risk-sharing mechanisms, and dedicated credit lines, mitigating persistent financing constraints. Concurrently, regulatory guidance has elevated financial institutions' capacity for environmental risk evaluation, incentivizing SMEs to proactively improve their environmental credentials to secure preferential financing terms. Nevertheless, policy efficacy exhibits marked regional and sectoral disparities, constrained by challenges including environmental information asymmetry and inconsistent eligibility standard application, limiting the full realization of intended benefits. Recommendations include refining policy implementation protocols, fortifying environmental data disclosure and exchange frameworks, and fostering innovation in financial institutions' green product and service offerings to more effectively catalyze SME green transitions.

KEYWORDS

Green finance policy; Small and medium-sized enterprises; Financing constraints; Financing costs; Policy effect

1. INTRODUCTION

Global climate action and sustainable development agendas increasingly rely on green finance to redirect capital toward environmentally sound investments. China's commitment is evident in its evolving policy framework, anchored by the seminal Guiding Opinions on Building a Green Financial System. This framework strategically combines green credit mandates, bond standards, environmental disclosure rules, and targeted incentives to steer funding toward qualified green sectors.

Small and medium enterprises, vital to economic resilience and innovation, face disproportionate hurdles in accessing green transition finance. Their structural constraints—limited scale, inadequate collateral, perceived risk profiles, and underdeveloped environmental management—exacerbate the persistent "financing difficulty and expensiveness" dilemma. Consequently, securing necessary capital for sustainability upgrades remains exceptionally challenging.

Green finance policies potentially counter these constraints. By incentivizing lenders to embed environmental metrics within credit assessments, these policies could enhance financing access, reduce costs, and extend terms for SMEs demonstrating credible environmental stewardship or transition plans.

Yet critical uncertainties persist: Does policy penetration extend beyond showcase projects to reach diverse SMEs? How efficiently do central directives translate into tangible local financing improvements? What measurable impacts emerge on SME financing structures, and do benefits

exhibit significant regional or sectoral disparities? This study examines green finance policy impacts on SME financing, identifies transmission barriers, and proposes refinements to strengthen financial support for this essential transition cohort.

This series of measures combining top-level design with local trials have ultimately been condensed and reflected in a series of landmark national policy documents, and their core evolution is shown in Table 1.

Table 1. List of Green Finance Policies from 2020 to 2025

Time	Subject	Documents and Policies	Content and Significance
September 2020	General Secretary Xi Jinping	Address to the General Debate of the Seventy-fifth Session of the United Nations General Assembly	It is proposed that China's carbon dioxide emission will reach its peak by 2023 and achieve carbon neutrality by 2060
December 2020	Ministry of Ecology and Environment	Measures for the Administration of Carbon Emission Trading (Trial)	Implement centralized and unified trading of carbon emission rights nationwide
February 2021	State Council	Guiding Opinions on Accelerating the Establishment and Improvement of a Green and Low-carbon Circular Economic System	Further improve the green trading market mechanism, reduce transaction costs and improve operational efficiency
April 2021	People's Bank of China, etc.	Catalogue of Green Bond Support Projects (2021 Edition)	Unification of Green Bond Standards in China
May 2022	State Council	Implementation Plan for Promoting High-quality Development of New Energy in the New Era	Improve financial measures to support the development of new energy and enrich green financial products and services
June 2022	China Insurance Regulatory Commission	Green Finance Guidelines for Banking and Insurance	Bank insurance institutions are required to strengthen their support for green, low-carbon and circular economy from a strategic perspective, and comprehensively prevent social, environmental and economic governance risks.
September 2023	China Insurance Association	Green Insurance Classification Guidelines (2023 Edition)	Guide the insurance industry to accelerate innovation in the field of green insurance and promote the standardized development of green insurance
January 2024	State Council	Interim Regulations on the Administration of Carbon Emission Trading	The first national carbon market regulation clarifies quota allocation, trading rules and supervision, laying a legal foundation for carbon asset financing.
June 2025	People's Bank of China, etc.	Catalogue of Green Financial Support Projects (2025 Edition)	The Catalogue of Green Financial Support Projects (2025 Edition) is uniformly applicable to all kinds of green financial products

The policy list clearly shows the top-level design and rapid evolution of China's green finance policy system since the 2020 "dual carbon" goals were proposed. Policy issuers include national leaders, the State Council, and multiple departments such as finance and ecological environment, reflecting the importance of both strategic guidance and interdepartmental collaboration. In terms of content evolution, the policy system has deepened along the path of "goal setting (2020) — market mechanism construction (2020-2021) — standard unification and financial product innovation (2021-2022) — risk control and legal safeguard (2022-2024) — comprehensive system integration (2025)." In particular, the 2025 plan to unify the support catalogs for various green financial products marks a major breakthrough from "scattered norms" to a systematized and standardized approach. This lays a solid foundation for small and medium-sized enterprises to access green financing through a unified standard. This series of policies not only provides institutional guarantees for green finance but also directly reduces the transaction costs of green certification and financing for small and medium-sized enterprises by clarifying standards, innovating tools, and strengthening supervision. This provides a clear policy background for the subsequent analysis of the policy's effect in alleviating financing constraints.

2. EVOLUTION AND CORE CONTENT OF GREEN FINANCE POLICY SYSTEM

China's green finance policy evolution traces a clear arc: initial conceptual promotion transitioned toward institutional scaffolding before advancing into operational implementation. The pivotal 2016 Guiding Opinions on Building a Green Finance System established core national definitions, objectives, and strategic priorities. Subsequent policy adjustments crystallized around two interdependent axes:

Balancing Incentives with Constraints: Monetary authorities actively leverage mechanisms like the Carbon Emission Reduction Support Facility—directing subsidized capital while embedding green lending metrics within Macro-Prudential Assessment frameworks. This linkage visibly accelerates bank participation in green finance. Fiscal counterparts reinforce this dynamic through interest subsidies and dedicated risk compensation pools for certified green loans, easing banks' concerns over exposure. Regulatory mandates simultaneously compel enhanced environmental disclosures and drive deeper integration of ecological risk factors into financial institutions' fundamental risk governance protocols [1].

Standardization and Implementation Laboratories: Led by the NDRC, iterative updates to the Green Industry Guidance Catalogue furnish authoritative criteria for classifying green initiatives. Parallel efforts seed regional Green Finance Reform Pilot Zones as experimental platforms for novel financial instruments and service models. Practical lessons extracted from these localized trials systematically inform broader policy calibration and scaling strategies.

3. THEORETICAL MECHANISM AND CORE PATH OF POLICY IMPACT

The impact of green financial policies on the financing of small and medium-sized enterprises is mainly achieved through a two-way interactive mechanism between the demand side and the supply side. Its core path can be summarized as follows:

Mechanism for improving financing availability: The policy directly or indirectly reduces the risk expectations and funding costs of financial institutions providing loans to small and medium-sized enterprises that meet green standards through tools such as fiscal interest subsidies, risk compensation pools, and green special re-loans, and encourages banks and other institutions to expand the scale of credit supply to such enterprises and relax credit conditions. At the same time, the clear green industry catalog and policy orientation have reduced the information cost of project screening, making

financial institutions more willing to lend to small and medium-sized enterprises in the green field [2].

Financing cost reduction mechanism: The low-cost policy funds provided by the central bank, the loan interest subsidies of local finances, and the internal funds transfer pricing preferences that may be implemented by banks for green loans based on policy orientation can effectively transmit to the final loan interest rate and reduce the actual financing cost of green small and medium-sized enterprises. In addition, enterprises with excellent environmental performance may obtain more favorable insurance premiums or obtain lower costs than traditional debt financing by issuing green bonds.

Environmental reputation value-added and risk management optimization mechanism: Policies promote financial institutions to include environmental, social and governance factors, especially environmental risks, in credit review and post-loan management. This has prompted small and medium-sized enterprises to actively strengthen environmental management, improve the transparency of environmental information disclosure, invest in green technology or equipment, and improve their own environmental performance in order to meet financing conditions or obtain better conditions. Good environmental performance has become a new "credit qualification" for enterprises, forming a "green reputation" asset, which will help improve their long-term financing capabilities. At the same time, financial institutions can more accurately identify and avoid environmental problems and optimize the quality of their asset portfolios by strengthening environmental risk management.

4. THE EASING EFFECT OF GREEN FINANCE POLICIES ON FINANCING CONSTRAINTS OF SMES

The establishment and improvement of the green finance policy system have provided an important institutional guarantee and market foundation for alleviating the financing constraints of small and medium-sized enterprises. The latest market data strongly confirm that this market foundation is continuously being consolidated and expanded. According to Wind data statistics, as of July 2025, the cumulative issuance of labeled green bonds in the domestic market of China has reached 4.79 trillion yuan, and the stock scale has reached 2.32 trillion yuan, demonstrating the scale effect of green bonds as an important direct financing tool. It is particularly noteworthy that in July 2025 alone, the issuance scale in the primary market reached 119.384 billion yuan, and the trading scale in the secondary market was as high as 119.714 billion yuan, reflecting that the activity and liquidity levels of the green bond market are both maintained at a relatively high level, which has broadened the financing channels for small and medium-sized enterprises that meet the bond issuance conditions (especially science and technology innovation and green technology enterprises). In terms of the credit market, according to the latest data released by the People's Bank of China, as of the end of the second quarter of 2025, the balance of green loans in local and foreign currencies reached 42.39 trillion yuan, a year-on-year increase of 14.4%, and the new scale in the first half of this year reached 5.35 trillion yuan. This continuous high-speed growth trend clearly indicates that the credit support of the banking system for the green field under the guidance of policies has significantly increased, which constitutes the main channel to alleviate the indirect financing constraints of small and medium-sized enterprises. In addition, as an important part of the green finance infrastructure, the operation of the national carbon market also provides a key environmental rights pricing and trading mechanism. As of the end of July 2025, the cumulative trading volume of carbon quotas in the national carbon market has reached 680 million tons, and the cumulative trading volume has reached 46.784 billion yuan. Although the trading volume and turnover in July both decreased by about 25.32% month-on-month, this may be affected by the quota allocation cycle, seasonal factors or short-term market adjustments. Its long-term trading scale and pricing function have laid a potential foundation

for exploring innovative financing models based on carbon assets in the future (such as carbon quota pledge loans) to serve small and medium-sized enterprises.

Against the backdrop of this booming green finance market, empirical research and market observations indicate that green finance policies do have a positive effect on alleviating the financing constraints of eligible small and medium - sized enterprises. First, credit availability has improved significantly. According to data from the central bank, the balance of green loans has continued to grow rapidly in recent years, among which the proportion of loans invested in projects with direct carbon emission reduction benefits has continued to increase, and some energy-saving, environmental protection and clean energy projects led by small and medium-sized enterprises have benefited from it. Under policy incentives, financial institutions have generally established green finance divisions or specialized institutions, and developed special credit products such as "environmental protection loans", "energy-saving loans" and "carbon sink loans" for small and medium-sized enterprises. The process is relatively simplified and the mortgage guarantee requirements are relaxed. Secondly, the financing cost has been effectively reduced. The interest rate of green project loans with interest subsidies is usually 1-3 percentage points lower than that of ordinary loans of the same type. The green transformation risk compensation fund for small and medium-sized enterprises established in some regions has effectively shared bank risks and further lowered loan interest rates. For example, small and medium-sized enterprises manufacturing environmental protection equipment in a certain province's green finance reform pilot zone successfully obtained special loans with interest rates lower than the benchmark interest rate by virtue of green project certification. In addition, the financing term structure is optimized. Green projects often have medium- and long-term investment return characteristics. Under the guidance of policies, financial institutions provide longer-term loan support for green SME projects that meet the standards to match their capital demand cycle [3]. For example, some banks have launched green fixed asset loans with a term of 5 years or even longer, which alleviates the "short-term loan and long-term investment" risk faced by SMEs. However, this mitigation effect shows obvious "structural" characteristics, that is, the policy dividends are mainly concentrated on SMEs that have been identified as belonging to the green industry catalog or can clearly prove that their projects have significant environmental benefits. A large number of SMEs in traditional industries that are striving to transform and upgrade to green still find it difficult to fully enjoy the financing convenience brought by the policy due to insufficient environmental information disclosure and difficulty in quantifying and certifying the green benefits of projects.

5. ANALYSIS OF CHANGES IN FINANCING COSTS CAUSED BY POLICIES

The impact of green financial policies on the financing costs of SMEs shows a significant "two-way" feature. For SMEs that have successfully accessed the policy support channel and meet green standards, their financing costs show a substantial downward trend. This is mainly due to:

Policy-based capital cost transmission: The low-cost carbon emission reduction support tools provided by the central bank require financial institutions to lend at a lower interest rate, which directly reduces the interest expenses of the final borrowing enterprises.

Direct concessions from fiscal interest subsidies: Local governments' interest subsidies for green loans directly reduce the financial expenses of enterprises.

Internal pricing bias in banks: Driven by regulatory assessment and strategic orientation, banks may give preferential spreads on FTP pricing for green loans.

Reduced guarantee enhancement costs: Policy-based guarantee agencies may reduce the guarantee rates for green projects or include them in the risk compensation range, reducing the comprehensive guarantee costs of enterprises.

However, for small and medium-sized enterprises that have not yet met green standards or are in transition, policies may bring potential compliance costs and indirectly affect their financing costs:

Rising environmental compliance costs: In order to meet possible green financing thresholds in the future or avoid environmental penalties, enterprises need to invest in environmental protection equipment updates, technological transformation, environmental monitoring and information disclosure system construction, etc., which increases operating costs [4].

“Brown” asset risk premium: Policies strengthen financial institutions’ identification and management of environmental risks. Small and medium-sized enterprises with high pollution, high energy consumption or incomplete environmental information disclosure may face stricter review and higher risk premiums for their loan applications, and even be restricted from credit or loan withdrawal, and the difficulty and cost of financing will increase instead of decrease. This "differentiation effect" of financing costs is a reflection of the policy's function of resource allocation and risk pricing, but it also puts pressure on small and medium-sized enterprises in the early stages of transformation, and they urgently need to be connected and supported by supporting transformation financial policies.

6. DIFFERENCES IN POLICY EFFECTS UNDER REGIONAL AND ENTERPRISE HETEROGENEITY

The impact of green financial policies on the financing of small and medium-sized enterprises is not homogeneous, showing significant regional differences and differences in enterprise types. **Regional level:** Policy effects are closely related to local economic foundations, industrial structure, policy execution and financial ecological environment. With the policy advantages of trial and error, the pilot areas for green financial reform and innovation have more complete supporting measures and active innovation of financial institutions. The convenience and cost advantages of small and medium-sized enterprises in obtaining green financing are usually more obvious. With strong financial strength, mature financial markets and abundant high-tech and service industry small and medium-sized enterprise resources, the developed eastern coastal areas have a wide coverage of green finance and many product innovations. In traditional industries or resource-based regions such as the central and western regions and the northeast, the foundation for green transformation of small and medium-sized enterprises is relatively weak, the local fiscal support capacity is limited, the service capacity and willingness of financial institutions may be insufficient, and the efficiency of policy dividend transmission is relatively low. **At the enterprise type level:** The policy effect is highly dependent on the industry attributes, scale, technical capabilities and environmental management foundation of the enterprise [5]. "Pure green" small and medium-sized enterprises in the areas clearly supported by the "Green Industry Guidance Catalogue" are most likely to obtain various types of green financial support. For "transformed green" small and medium-sized enterprises that are actively carrying out green transformation and upgrading in traditional manufacturing, agriculture and other fields, the degree of improvement in their financing availability depends on the quantification of the environmental benefits of their transformation projects, the maturity of their technical routes and the level of information disclosure, which is more difficult than "pure green" enterprises. Micro-enterprises and some service-oriented SMEs face greater challenges in connecting with green finance policies due to the lack of qualified collateral and complex environmental benefit assessments. In addition, SMEs with strong technical research and development capabilities, standardized management, and emphasis on ESG information disclosure can more effectively use policy tools and demonstrate their green value, thereby obtaining better financing conditions.

7. CONCLUSION

This study deeply explores the multi-dimensional impact of green finance policies on the financing activities of SMEs, revealing its complex transmission mechanism and differentiated effects. The core conclusions are as follows: First, the green finance policy system has opened up an important path to alleviate the financing difficulties of SMEs by building an incentive and constraint mechanism and improving the standard infrastructure. The policy has effectively improved the credit availability of SMEs that meet green standards, significantly reduced their financing costs through policy funding support, fiscal subsidies, and internal pricing inclinations of banks, optimized the financing term structure, and alleviated long-standing financing constraints. Second, the policy impact has a distinct "two-way" feature: on the one hand, it brings financing cost dividends to "pure green" and successfully transformed enterprises; on the other hand, the raising of environmental access thresholds and the tightening of environmental risk management have objectively increased the environmental compliance costs for "brown" (or lagging) enterprises. This may further lead to tighter financing conditions for such enterprises, or even force them to face the risk of market exit—an outcome that reflects the inherent logic of policy-guided resource optimization. Third, the policy effects show significant heterogeneity. At the regional level, the green finance reform pilot zones and economically and financially developed regions have implemented policies more deeply and achieved more significant results; at the enterprise level, "pure green" enterprises and enterprises with good environmental management foundation and technical capabilities have benefited the most, while micro-enterprises, enterprises in transformation of traditional industries and those with insufficient environmental information disclosure face access barriers. The main challenges of current policy implementation are: the uniformity and operability of green project identification standards need to be strengthened; the quality of environmental information disclosure of small and medium-sized enterprises is generally not high and there is a lack of sharing platforms, which aggravates information asymmetry; the depth of innovation and precise service capabilities of financial institutions for green financial products for small and medium-sized enterprises still need to be improved; the financial support mechanism for the fair transformation of small and medium-sized enterprises in high-carbon industries is still imperfect.

Based on this, the following optimization suggestions are proposed: First, deepen the accuracy and coordination of policies. Refine the differentiated support policies for the green transformation needs of SMEs of different types and stages, especially strengthen the exploration and application of the "transformation finance" framework to avoid "one size fits all". Strengthen the coordination and linkage of fiscal, monetary, industrial and environmental policies. Second, build an efficient environmental information infrastructure. Accelerate the construction of a unified and standardized environmental information disclosure platform and green project library covering SMEs, promote the standardization and low cost of third-party green certification and evaluation, and reduce the due diligence costs and risk identification difficulties of financial institutions. Third, stimulate the endogenous motivation and service innovation of financial institutions. Encourage financial institutions to use financial technology to enhance the ability to quantify environmental risks, and develop more green credit, green supply chain finance, green leasing, environmental rights and interests mortgage financing and other products that are in line with the characteristics of light assets, small amounts and flexibility of SMEs. Optimize internal performance appraisals and incorporate the results of green financial business expansion into the appraisal system for branches and account managers. Fourth, strengthen capacity building and supporting support. Strengthen the dissemination and training of green transformation paths, environmental management standards and green financing policies for small and medium-sized enterprises, and enhance their ability to connect with green financial policies. Develop professional green financial intermediary service institutions. Through multiple measures, we can more fully release the potential of green financial policies, effectively break the bottleneck of green financing for small and medium-sized enterprises, and provide solid financial support for them to play a vital role in achieving the "dual carbon" goals.

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