The Impact of Green Finance on Small and Microenterprises

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Abstract: The passage summarizes the key points from the provided passage about green finance, its channels, impact on small and micro-enterprises, influencing factors, and challenges. It highlights the various channels of green financing, such as green bonds, sustainable bonds, and green loans. Additionally, it discusses secondary market investment in green stocks and green bonds. The passage emphasizes the importance of government policies, banking institutions, non-banking sectors, and investors in promoting green finance. Furthermore, it points out the challenges faced by green finance, including information asymmetry, high costs, and the lack of clear green standards for small and micro-enterprises. Despite these challenges, the passage underscores the potential for green finance to drive sustainability and economic growth, particularly for smaller businesses. In summary, the passage provides an overview of the concepts, mechanisms, and impacts of green finance, highlighting its role in environmental conservation and sustainable development, especially for small and micro-enterprises.

Keywords: Green Finance, Small and Micro Enterprises, Financing Support

1. The Concept of Green Finance

1.1. Channels of Green Financing

Green financing encompasses several key channels. Firstly, there exists the avenue of green bonds, which involves the issuance of bonds dedicated to supporting environmentally beneficial projects [1]. The capital raised through this mechanism is specifically directed towards sustainable development initiatives. Investors stand to attain stable returns from these ventures, all the while contributing to environmental conservation. Analollgous to green bonds is the category of sustainable bonds, which channels funding into a broader spectrum of sustainable development undertakings, spanning social, environmental, and economic spheres [2]. Secondly, the framework of green loans operates. Financial institutions extend loans to businesses or individuals with a focus on eco-friendly projects [3]. These initiatives encompass areas like renewable energy and energy efficiency enhancements. Lastly, the

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paradigm of carbon offset transactions is notable. Enterprises or individuals engage in carbon offsetting by either procuring carbon emission allowances or supporting renewable energy projects. This offsets their own carbon emissions, demonstrating a commitment to environmental sustainability [4].



Figure 1: Carbon trading quota transaction volume in the Chinese market from 2014 to 2020

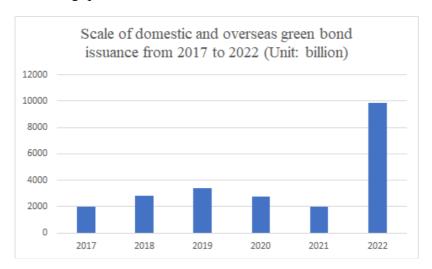


Figure 2: Scale of domestic and overseas green bond issuance from 2017 to 2020

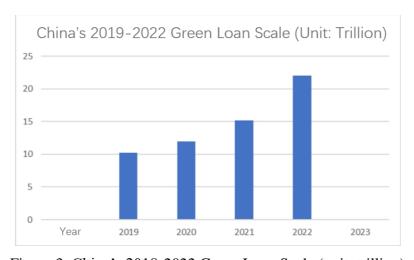


Figure 3: China's 2018-2022 Green Loan Scale (unit: trillion)

1.2. Secondary Market Investment

1.2.1. Green Stocks

Green stocks refer to stocks of companies that exhibit strong performance and contributions in environmental, social, and governance aspects. Environmental aspects encompass water, soil, air, energy, etc., while social aspects include labor rights, human rights, consumer rights, etc., and governance aspects involve corporate governance, transparency, anti-corruption, etc. This new investment paradigm aligns with principles of sustainable development and environmental conservation. The criteria for green stocks can be formulated and assessed based on varying investment needs and environmental standards. Currently, popular international standards include the MSCI Environmental, Social and Governance (ESG) Index, Dow Jones Sustainability Index, and Green Energy Index. The labeling of green stocks also requires third-party assessment and compliance with exchange-defined standards. For instance, according to Nasdaq, companies must generate over 50% of their revenue from green businesses, and investments must meet certain requirements and other environmental criteria.

1.2.2. Green Bonds

Green bonds constitute one of the avenues for green financing. These bonds are raised specifically to support green industries, projects, or economic activities that meet specified conditions. They are issued through legal procedures and provide securities with predetermined interest and principal repayment. Categories of green bonds include, but are not limited to, green financial bonds, green corporate bonds, green enterprise bonds, green debt financing instruments, and green asset-backed securities. In contrast to conventional bonds, green bonds must adhere to four core elements: the use of funds, project assessment and selection, fund management, and disclosure of information throughout the tenure. They are deemed stable and sustainable investments for long-term social projects, particularly green infrastructure and sustainable development initiatives such as wind and solar energy facilities. These projects often require substantial capital and benefit from the stability offered by green bonds. Therefore, raising funds through a robust bond market capable of providing long-term capital could be a suitable option. For investors, green bonds offer stability and long-term returns. Moreover, given the societal purpose behind green bond issuance, their political and social demand is on the rise. Consequently, green bonds provide an advantage to investors, enabling them to execute green initiatives without burdening their investment portfolios. Traditional environmentally friendly financial products, due to their variable interest payments, maturity adjustments, and liquidity constraints, are challenging to integrate into investment portfolios. In contrast, while the issuance of green bonds resembles traditional government bonds, they are more easily integrated into investment portfolios.

The "green" nature of green bonds inherently implies a higher investment risk compared to regular bonds. Beyond the credit risk, liquidity risk, and interest rate risk of conventional bonds, they also carry unique project and environmental risks. Additionally, due to the relatively late development of green finance in China, there are some management risks, such as incomplete market risk supervision mechanisms, optimization opportunities in regulatory mechanisms, limited third-party certification bodies with imperfect certification standards, room for improvement in team operational and managerial capacity, weak awareness of green finance bond-related information disclosure, and relatively higher financing costs. However, by improving market risk regulatory bodies, coordinating and enhancing the internal systems of commercial banks, and increasing optimization efforts through third-party certification bodies, we can mitigate risks and promote the development of China's green finance industry.

Furthermore, there are several risks inherent to green bonds, necessitating ongoing strategy refinement. Firstly, product-related risks pertain to the possibility of profit and loss due to uncertain factors during the design and issuance processes. In the context of China's commercial bank green finance bond products, the bonds themselves face certain risks, including interest rate risk, design period risk, and rating risk. Interest rate risk indicates that the bond yield will fluctuate due to changes in interest rates. The terms of green finance bonds issued by China's commercial banks mainly range from three to five years. The tenure of the bonds is crucial for assessing risk; longer-term bonds have higher unpredictability and uncontrollability, exposing them to market risk.

Secondly, there are risks related to the issuer of the bonds. As significant financial institutions in the financial market, commercial banks still encounter a series of risks associated with the issuer during the process of issuing green finance bonds. These risks include credit risk and operational risk.

Thirdly, legal risks are also present. For instance, financial contracts might lack legal protection or enforceability, or the terms of the financial contract might be defined ambiguously, leading to legal vulnerabilities for commercial banks.

1.3. Venture Capital and Equity Investment

The investment preferences of venture capital differ significantly from those of banks. Venture capital is more inclined towards private enterprises, especially small and medium-sized businesses. Among the environmental companies examined by both domestic and international venture capital institutions, almost all are small and medium-sized private enterprises. In the eyes of venture capitalists, private environmental enterprises exhibit greater vitality and a better grasp of the market. Simultaneously, entrepreneurial spirit is more pronounced in ventures associated with risk-taking, accompanied by a strong desire for success. This is highly beneficial for achieving business success. Enterprises that receive venture capital funding generally possess well-structured project proposals, outstanding management teams, and products or services that align effectively with market demands, all of which are highly valued by venture capitalists.

Therefore, based on venture capital, it is essential to further support the development of green finance venture capital. Economic development remains a fundamental requirement; however, natural resources are limited, and the ecological environment is irreversible. How can this contradiction be resolved? The answer lies in innovation, and the core of venture capital is precisely that. In order to reduce pollution, conserve energy, and protect the environment, we require technological innovation in the green sector, which can be effectively supported through venture capital. The concept of the green sector is broad-ranging. It encompasses not only direct environmental protection technologies but also includes investments that pertain to environmental sustainability, clean energy, and ecological preservation.

Green equity investment is a form of investment that directs funds into companies or projects associated with environmental sustainability, clean energy, and ecological preservation. It can be categorized as a subset of green finance and constitutes an indispensable component of the green financial system. In comparison to traditional equity investment, green equity investment places a higher emphasis on environmental protection, social responsibility, and sustainable development. The primary objective of this investment approach is to simultaneously pursue financial returns while promoting environmental protection and sustainable development.

Compared to traditional investments, green investments possess the following characteristics: From an ecological perspective, green investments fundamentally reflect the harmonious development relationship between economy, society, and ecology. It is rooted in the principles of sustainable development. Traditional investment practices have relied on excessive resource consumption and environmental exploitation in exchange for economic growth. This has strained the relationship between humans and the environment, often leading to environmental repercussions. In

the context of green investment, environmental protection is integrated with product production, focusing on resource conservation and efficient utilization. This approach facilitates the recovery of natural resources, leading to ecological balance.

From an investment standpoint, green investment is conducted by economic actors who possess ecological and environmental awareness. The investment entity is not solely driven by economic gains but also includes socially responsible investors. In their investment decisions, these investors use a three-fold criterion consisting of economic, social, and environmental considerations, rather than solely relying on economic criteria.

In terms of the economy, the capital generated from green investment is referred to as green capital, capable of fostering growth in green GDP. Concerning returns and value creation, green investments yield triple surplus: economic, social, and ecological returns. This stands in contrast to traditional investments that primarily yield singular profit. Regarding value creation, green investments are focused on long-term value, while traditional investments often emphasize short-term gains.

On a societal level, green investments boast higher technological content and social value. While traditional investments also require technological support, advancements in technology have mitigated the declining marginal productivity of investments, ensuring sustainable economic growth.

2. The impact of green finance on small and micro enterprises

2.1. Financing support

On a societal level, green investments boast higher technological content and social value. While traditional investments also require technological support, advancements in technology have mitigated the declining marginal productivity of investments, ensuring sustainable economic growth.

For small and micro enterprises, a shortage of funds stands as a significant impediment to their effective participation in green finance. However, various stakeholders in society offer a range of financing supports that can effectively address this issue. What is financing? Financing entails the act and process of procuring funds for a business. It involves an enterprise's strategic decisions based on its operational status, financial position, and future growth needs. Through systematic prediction and decision-making, companies adopt specific methods to source funds from investors and creditors, organizing the supply of capital to ensure the normal functioning of the company's production and operational activities.

At present, there are primarily three types of financing channels provided by different sectors of society:

The first involves the introduction of green finance credit products, offering preferential interest rates to reduce financing costs. The "Micro Carbon Efficiency Loan" credit product, for example, introduces a new avenue for green financing. The Micro Carbon Efficiency platform gathers relevant data on energy usage, output, and revenue during the operation of micro-enterprises. After systematic calculations, the platform assesses the carbon efficiency level of businesses. Based on this assessment, the "Micro Carbon Efficiency Loan" credit product is tailored to provide differentiated financial service policies and products. Enterprises with higher carbon efficiency levels can access larger loan amounts and more substantial interest rate discounts. The "Micro Carbon Efficiency Loan" implements a differentiated interest rate discount policy according to the carbon efficiency code. Micro-enterprises can receive up to a 60 basis points interest rate discount based on their carbon efficiency code level and the degree of their green certification. Additionally, when the loan is up for renewal, based on recent changes in carbon efficiency levels, an additional 20 basis points interest rate reduction can be applied to the original loan execution rate, thereby continuously lowering the financing costs for micro green enterprises.

The second involves the People's Bank of China introducing carbon emission reduction support tools and special re-loans for clean and efficient utilization of coal. In November 2021, the People's Bank of China introduced carbon emission reduction support tools and a 200 billion yuan special re-loan program for the clean and efficient utilization of coal. Both tools provide funding support through a "lend first, borrow later" direct mechanism. Financial institutions independently make decisions and bear risks when offering preferential interest rate loans to enterprises in relevant fields. The People's Bank of China provides low-cost funding support in proportion to the loan principal for loans that meet the requirements. The support ratio for the carbon emission reduction support tools is 60%, and for the special re-loan program for clean and efficient utilization of coal, it's 100%. The interest rate for both tools is set at 1.75%.

The third involves the establishment of a "carbon creditworthiness" evaluation system, providing a digital information platform to alleviate financing difficulties. In June of last year, the pilot project for China's first carbon creditworthiness evaluation system was launched in Ningbo. Ningbo Branch of Postal Savings Bank of China swiftly responded by collaborating with leading institutions such as Fudan University and Tsinghua University to formulate carbon creditworthiness evaluation standards. Innovatively integrating the concept of "green and low-carbon + inclusive finance," they jointly established the carbon evaluation system. This system is used to provide convenient financing and accurate services for inclusive micro-enterprises and rural agriculture, and it offers financial institutions a new digital information platform tool. Through this platform, data sharing and exchange are realized, allowing banks to provide diversified and comprehensive financial services to enterprises. This helps alleviate the financing challenges faced by small, micro, and rural enterprises, while further promoting the sustainable development of green finance in the banking industry [5].

Green finance provides additional sources of funding for small and micro enterprises, aiding them in effectively raising the necessary capital. This is crucial for achieving innovation, expansion, and sustainable development within these businesses. It greatly contributes to the implementation of environmental projects such as energy conservation, emission reduction, waste management, and green production. The financing channels provided by green finance support the execution of such environmentally friendly projects, driving enterprises toward a more sustainable direction. Additionally, the influx of capital facilitates the adoption of intelligent technologies within enterprises, enabling deeper transformation and upgrades to enhance their competitiveness in the market. This, in turn, leads to expanding market scope, discovering significant opportunities in the realms of environmental protection and sustainable development, and realizing the full potential of enterprise value.

2.2. Government policy support

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China's Green Finance Policy primarily comprises green credit policies and green bond support policies. Existing environmental regulatory policies and green credit policies in China often compel enterprises to undergo passive low-carbon transformation through measures such as emission restrictions, increased production costs, and financing constraints. Bond financing serves as a significant direct and long-term funding avenue for enterprises, with green bonds emerging as a nascent tool for environmentally conscious financing. The People's Bank of China has included green bonds within the scope of the Medium-Term Lending Facility (MLF) collateral expansion, embedding green finance policy within the macroeconomic monetary policy framework. This structural adjustment of financial resource allocation toward the green economy sector conveys a robust signal of substantial support for green development.

2.3. Banking and non-banking sector support

In the context of banks, the most prevalent mechanisms are green loans and bonds. Numerous banks have introduced green loans and bonds to support the development of small and micro enterprises. The funds from these loans and bonds are allocated to environmentally beneficial projects, such as the advancement of renewable energy and energy efficiency enhancements. Concurrently, some banks offer guidance and training pertaining to green finance, assisting clients in comprehending green financial products and initiatives, as well as how to finance and invest in sustainable development projects. An additional pivotal measure of support lies in ESG integration, whereby many banks have incorporated Environmental, Social, and Governance (ESG) factors into their lending and investment decision-making processes, ensuring that their operations contribute positively to sustainable development. Moreover, banks are increasingly focusing on managing environmental risks, evaluating potential risks associated with environmental issues, to fortify their loan and investment portfolios against environment-related risks.

Certain banks have introduced innovative products and services in the sustainable finance domain, such as carbon emission trading and sustainable savings accounts.

Taking Nanjing Bank as an example, during the period of 2021-2022, Nanjing Bank issued three tranches of green bonds with a total value of 10 billion yuan. The issuance of these green bonds has provided Nanjing Bank with funding sources to support a broader range of green finance projects and borrowers. Through green bond issuance, Nanjing Bank secures long-term, stable funding to meet the demands of the green finance market, further propelling the advancement of the green economy

Outside the banking sector, many asset management companies have launched green investment funds specifically targeting environmentally friendly and sustainable development projects for small and micro enterprises, catering to investors' demand for sustainability-focused investments. Social enterprises and institutions within the non-banking sector are also driving sustainable development; some institutions issue social bonds to support social projects, such as education and healthcare.

Simultaneously, venture capital and entrepreneurship support organizations may invest in green technology and innovation to bolster the development of environmentally friendly solutions and technologies for small and micro enterprises.

Taking AVIC Trust as an example, the company seamlessly integrates sustainability concerns with its green development strategy, setting annual and medium-to-long-term goals to foster green finance, reduce greenhouse gas emissions, and contribute to achieving a carbon-neutral society. Among these, climate-related investment and financing constitute a crucial direction for the company's business development. In accordance with the overarching development blueprint of green trust, ESG risk management is integrated into the company's risk management framework, drawing insights from the Task Force on Climate-related Financial Disclosures (TCFD) framework to identify and assess climate change-related risks and opportunities that the company encounters.

2.4. Role of investors in green finance

A background report prepared for the Rio +20 conference, where governments around the world confirmed the need to transition to a greener economy, highlights the role of investment. Subsequent authors have pointed out that private investment flows exceed public investment flows, arguing that private investment must be mobilized for the transition.

3. Influencing factors and challenges

Although green finance has gradually matured after considerable development, it still faces certain problems and challenges, which need to be solved through continuous research and discovery. At the same time, in-depth exploration of the specific influencing factors of green finance on small and

micro enterprises is more conducive to us to clarify the responsibilities of various departments, gather efforts, and promote green finance to continuously activate small and micro enterprises.

3.1. factors

3.1.1. policy environment

Chinese scholars' research on green finance policies can be divided into two categories The first is to study the implementation effect and role of green finance policies, including empirical analysis of the policy's impact on regional export quality [6], Green transformation of enterprises [7], efficiency of resource allocation [8], And theoretically analyze the action mechanism of green finance policy on enterprise innovation [9]; The second is to study the system construction of China's green finance policy, including the essential attributes of finance [10], the division of the development stages of green finance policies, the reference of foreign experience, and the construction of the system from the perspective of subjects.

3.1.2. banking financial institutions

Among China's financial institutions, banking financial institutions occupy an important position, absorbing a large number of deposits from residents, and distributing funds into various industries. Therefore, in order to further implement the concept of green development, banking financial institutions play a key role in the flow of funds in various industries. Banking financial institutions should actively assume the responsibility as the supplier of green funds, and actively assume the social responsibility of promoting sustainable economic development. We will implement certain preferential interest rate policies for the financing of enterprises and green projects in green industries, and do a good job in the capital pool for green development.

3.1.3. Enterprises should establish the values of sustainable development and carry out green finance practices

Chinese enterprises need to actively participate in the practice of green finance to promote green development. First, enterprises should establish the values of sustainable development and green development, further emphasize social responsibility in corporate culture, not be blinded by temporary economic interests, pay attention to long-term development, invest in green industries and participate in green projects. Second, enterprises should seize the opportunity with broad development prospects and great policy support, and take the initiative to participate in the practical innovation of green finance, such as issuing green bonds linked to sustainable development and setting up green investment funds, so as to open up a new path for development.

3.2. Challenge

Green finance has indeed had a positive impact on small and micro enterprises, but with the deepening of reform, some problems have emerged, which urgently need to be solved by relevant departments.

The first point is the problem of asymmetric information. Li Guanhao believes that for small and micro enterprises, the problem of information asymmetry is mainly reflected in the obstacle of obtaining structured information (hard information) [11].

For small and micro green enterprises or self-employed enterprises, they cannot provide financial statement data like traditional enterprises, but more can provide the current operation situation and scale, which is easy to make it difficult for financial institutions to identify risks, resulting in the problem of too high leverage ratio of loan scale. At the same time, the evaluation cost of green information is high, and there are differences in the evaluation methods and difficulties for different

kinds of green resources. Secondly, the decentralization of resources and regional differentiation also increase the difficulty and cost of information extraction. The problem of information asymmetry is also reflected in our lack of unstructured information (soft information) evaluation system. Unstructured information lacks effective verification means and compilation system.

First, it is difficult to guarantee the authenticity and accuracy of green data provided by small and micro enterprises. Although the development and popularization of data and mobile Internet have lowered the threshold for financial institutions to obtain information to a certain extent, unstructured information is greatly affected by subjective factors, and it is difficult to obtain real and effective "soft information" only by relying on the Internet and other technical means. Second, the data are difficult to assess quantitatively. Even if unique information about individuals is obtained, it cannot be scored quantitatively like structured information due to its strong subjectivity. Therefore, banks invest a lot of costs to obtain personalized information, and there is no evaluation system to reflect the credit level of small and micro groups.

The second is the issue of high costs. The cost of some green technologies and equipment may be high, leading to financial pressure on small and micro enterprises when implementing environmental initiatives. Although green finance can provide financing support, loan interest rates and fees may be relatively high, increasing the burden on small and micro enterprises.

The third point is that we lack green recognition standards for small and micro businesses. Liu Yiyang, deputy secretary general of the Photovoltaic Industry Association, said that because the green standards applicable to small and micro enterprises are not clear enough, even small and micro enterprises and small and micro dealers in the upstream and downstream of the photovoltaic industry that naturally have "green genes" are difficult to get green credit. It is necessary to promote the formulation and promotion of small and micro green standards from all walks of life, and strive for more inclusive and green services for small and micro enterprises in more industries.

The fourth point is the issue of market recognition and return cycles. Implementing environmental initiatives may take some time to realize returns, but small and micro enterprises may find it difficult to afford a long return period. In addition, the degree of market recognition of environmental products and services may affect the ability of small and micro enterprises to receive support in the short term.

4. Conclusion

In conclusion, green finance channels, policies, and support mechanisms have emerged as pivotal drivers of sustainability, particularly for small and micro enterprises in China. These channels provide essential funding for eco-friendly initiatives, offering a pathway to both environmental conservation and economic growth. Government policies, banking institutions, non-banking sectors, and investors all play crucial roles in advancing green finance.

However, challenges such as information asymmetry, high costs, and the need for clear green standards persist. Overcoming these challenges will be essential to ensure that small and micro enterprises continue to thrive in a green finance-driven world, contributing to both economic growth and environmental sustainability. This dynamic relationship between green finance and small enterprises serves as a testament to the potential for financial systems to foster positive change, making a substantial impact on the road to a greener, more sustainable future.

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