



The Impact of Green Finance on Corporate Financing Costs

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Abstract. Green finance has developed rapidly due to the Paris Agreement and people's growing concern for environmental protection and green development, exerting a profound impact on corporate financing. This study focuses on how green finance affects corporate financing costs and its specific mechanisms. Through a literature review and case comparison analysis, it reveals three core mechanisms. First, risk mitigation mechanism: green financial tools reduce environmental and social risks, improve credit ratings, and lower risk premiums. Next, policy incentive mechanism: the government directly reduces the capital cost of green projects through subsidies, tax incentives, and regulatory preferences. Last, market-driven mechanism: investors' preference for ESG-compliant assets creates a green premium, lowering the yield of green bonds and broadening financing channels. The study highlights the substantive benefits of green finance through case analysis and comparison, providing key evidence for governments to improve the green finance system and for enterprises to optimize their sustainable transformation financing strategies.

Keywords: Green Finance, Corporate Financing Cost, Sustainable Development.

1 Introduction

After human civilization entered the modern industrial era, environmental pollution and climate change gradually became popular topics, attracting the attention of an increasing number of countries and international forces. The Paris Agreement, adopted in December 2015, proposed three goals to control the impact of climate change and raise the average world temperatures by around 2°C beyond pre-industrial levels on human production and life, as well as multiple energy conservation and emission reduction plans, signaling a shift in the governance of the global climate [1]. Under the advocacy of this agreement and the continuous enhancement of human environmental awareness, many countries and economies have taken corresponding measures to promote the inhibition of climate and environmental deterioration, among which green finance is included. Green financing has formed a strong background for sustainable development and long-term growth, of which more than 200 countries have publicly outlined their intentions to participate in reducing the impact of climate change, and have gained international and national attention as a solution for reducing the level of CO₂ emissions in many countries such as India [2]. However, whether green finance financing methods

can truly reduce the financing costs of enterprises or require enterprises to increase funding for emission reduction and energy conservation at the same time remains to be verified.

Prior research has mostly concentrated on the connection between green finance and corporate financing costs, the expansion of corporate financing channels, and the impact on risks. However, there is relatively less detailed explanation on how green finance influences financing costs through specific policies, market signals, and investor behaviors. The following research questions are the primary objectives of this paper. First, what impact does green finance have on corporates' financing costs? Next, what is the specific impact mechanism of this series of policies and measures on the financing costs of enterprises? Studying these topics can provide decision-making reference opinions for government and business managers, promoting green finance and sustainable development.

The structure of the paper will be divided into several sections. First it will provide a literature review, second the analysis of the influencing mechanism will be presented, third a case will be analyzed, then it will offer some possible suggestions, while the last part will contain the conclusion.

2 Literature Review

2.1 The Concept of Green Finance

The Definition and Characteristics of Green Finance. Green financing is defined as financial commitments meant to show environmental advantages within the larger context of achieving ecologically sustainable development, which is also a useful tool for implementing industry transformation and upgrading, as well as lowering carbon emissions by investing more money in green projects [2]. It has an important effect on the company operation model and financing costs of enterprises through its dual function of resource allocation and environmental regulation. As a result of its capacity to encourage companies to actively engage in sustainable practices, green finance has become more popular among international authorities [3].

Policy Tools of Green Finance. Green financial policies, through higher-level means such as those of the government and the state, encourage or compel enterprises to implement green economy and promote the realization of energy conservation and emission reduction as well as green production. According to existing research, the policy tools related to green finance include carbon trading and energy trading policies, pilot zones and scoring mechanisms. The carbon trading market plays an important role in the government's efforts to contain carbon emissions. Although the efficiency is relatively low now, it is increasing with time [4]. A pilot site called Green Finance Reform and Innovation Pilot Zone established by the regulatory bodies of China promotes the development of green finance and the construction of ecological civilization by exerting pressure on enterprises to make them greener [3].

2.2 The Theory and Influencing Factors of Enterprise Financing Costs

Debt cost refers to the interest and additional expenses paid by enterprises through debt financing (like bank loans and bond issuance), mainly including benchmark interest rates, risk premiums, and so on. The financing costs and willingness of enterprises are largely influenced by loan interest rates. Meanwhile, banks are also taking measures to reduce the effects by a limited interest rate passthrough [5]. The risk premium includes credit risk, liquidity risk and term risk. The information risk premium mainly stems from the theories of information asymmetry, information incompleteness, and risk valuation. Financing costs will increase due to the incompleteness of information held by the traders [6].

Capital Assets Pricing Model (CAPM) is a classical measure used to evaluate the equity cost of a corporate. Research uses CML and β coefficient (B_{ig}) to measure the correlation and relative volatility between asset returns and market portfolio returns, reflects the exposure degree of assets to systemic risks, providing quantitative tools for the pricing of corporate assets and the measurement of equity cost [7].

The factors influencing a company's financing cost include the external macroeconomic conditions and the internal management model of the company itself. The financing cost of the business is significantly influenced by macroeconomic circumstances. The quantity of internal funding that the business has is positively connected with the cost of external borrowing. When the monetary policy is loose, the external financing cost of the company will significantly decrease. Furthermore, the cost of financing is adversely connected with the degree of corporate governance, and the cost of equity financing is more affected by it than the cost of debt financing [6].

2.3 The Relationship Between Green Finance and Enterprise Financing Costs

Green insurance, green funds, as well as green bonds are both crucial green financial tools that help enterprises raise funds. To be more specific, similar to traditional corporate bonds, green bonds have clauses that allocate the proceeds from their issue to programs that promote environmental and climatic change or give businesses access to more advantageous financing conditions for a range of projects with environmental sustainability features, which were issued first by the European Investment Bank in 2007 [8]. According to existing literature, some suggest when fees and compliance expenses are deducted, green bond revenues are probably low or perhaps negative, significantly lower than conventional bonds [8]. While others suggest that issuing green bonds can reduce non-green bonds' credit spreads, which indicates that green bonds can lower corporate financing costs [9].

3 The Impact Mechanism of Green Finance on Corporate Financing Costs

3.1 The Relationship between Risk Management and Corporate Financing Costs

For businesses to anticipate and control their financial expenses, risk management is crucial. Firstly, risk management itself can effectively reduce the financing costs of enterprises. Some studies indicate that the operations and financing of companies that rely on natural resource production or whose production processes have a significant impact on the environment are more susceptible to the influence of climate change. The application of regime-switching models and other financial models can help enterprises effectively avoid related risks, improve the accuracy of their financial product pricing, and make advance preparations for potential disruptions in production and operation caused by climate change [10]. To a certain extent, it reduces the environmental risks of enterprises and the social public opinion risks resulting from poor operation, maintaining long-term profitability [10].

Green finance directly and indirectly enhances the environmental performance of enterprises through technological upgrading. The strengthening of the enterprise's reputation further reinforces this relationship. This indicates that reputation capital amplifies the response of enterprises to green finance initiatives. Similarly, since enterprises with better reputations face lower financing difficulties and costs, green finance's beneficial effects on a company's image will also motivate businesses to take an active role in environmental risk management. and green sustainable development construction.

3.2 Government Policies and Incentive Mechanisms

For the emerging green finance sector, which is full of uncertainties, most governments have introduced policies to support its promotion and development. These range from emissions trading and carbon offsetting schemes to REDD+ programs and the Green Climate Fund. For instance, the People's Bank of China introduced the China Green Bond Endorsed Project Catalogue on 22 December 2015 provides financial support to brown enterprises. Through green bonds, it enhances the banks' credit support for brown industry enterprises that meet environmental protection technical standards and promotes their green technological innovation. This policy does not force enterprises to undergo transformation, and the enterprises that obtain financing are required to disclose environmental information and be subject to multiple supervisions, effectively avoiding short-term and strategic passive innovations and greenwashing behaviors caused by mandatory measures [11].

In addition, the government also offers fiscal incentives to enterprises. Fiscal subsidies provide direct financial support to enterprises for their green research and development expenditures. Tax incentives reduce the tax burden on enterprises, increase retained earnings, effectively encouraging enterprises to increase research and development investment, increase the results of green patents, and at the same time improve

the cash flow of enterprises and reduce their financing costs in green finance as well as their reliance on external financing. Among them, the incentive effect of fiscal subsidies is more obvious than that of tax incentives [12].

Under the encouragement and guidance of government policies, the environmental and climate crisis is becoming a new investment field. The inflow of funds from the government and investors has effectively reduced the financing costs of enterprises.

3.3 Investor Preferences and Market Reactions

The relevant emission reduction regulations encourage investors to choose companies that are more environmentally friendly and better adapted to climate change. To a certain extent, this reduces their financing costs and difficulties [10]. Meanwhile, a study including samples based on more than 3500 listed companies in the US during 2007-2023 finds strong evidence that there is a negative carbon premium (the surplus profits generated by brown businesses relative to their green equivalents), meaning that the green firms perform much better than brown firms in financing and stock markets. This conclusion has been proven to be applicable globally [13].

The advantages of environmentally friendly enterprises and those with higher ESG ratings in terms of financing and obtaining bank credit, as well as the preference of investors for green enterprises, have also driven the entire market to shift towards a direction that encourages sustainability, increasing the benefits and efficacy of green financing even further.

4 Case Analysis

4.1 Green Transformation of BYD

Being a prominent company in China's new energy vehicle and battery industry, BYD has achieved remarkable success in its green transformation. By concentrating on the study and creation of batteries and new energy vehicles (such as the Whale Battery technology), BYD has cumulatively applied for over 13,000 green patents, established technical barriers, and responded to the national dual carbon goals by promoting electric transportation solutions. Under the ESG strategic framework, BYD integrates green supply chain management, requiring upstream suppliers to adopt environmentally friendly materials and production processes and establishing a battery recycling system to reduce carbon emissions throughout the entire life cycle. BYD's green transformation has significantly reduced its financing costs. During the transformation process, BYD received government subsidies (such as over 5 billion yuan in special subsidies for new energy in 2022) and issued green bonds to alleviate financial pressure while obtaining an MSCI AA-level ESG rating to attract international ESG investment funds, reducing the equity financing risk premium. Moreover, BYD has expanded its brand awareness and reputation through its highly green production, establishing an environmental pioneer brand image, increasing the valuation of its long-term value by the market and investors, and helping BYD achieve global leadership in new energy vehicle

sales. From 2020 to 2023, the stock price of BYD in the Hong Kong stock market rose by over 300%, confirming the synergy of green technology premium and policy dividends. BYD's successful transformation provides a learnable example for non-state-owned enterprises in China to more efficiently convert environmental responsibilities into competitive advantages through ESG practices, optimize financing costs, and enhance enterprise value [14].

4.2 Swedish Energy-intensive Industries

The entire energy-intensive industrial sector in Sweden is undergoing a sustainable development transformation. Some researchers mainly focus on large and mature enterprises within this sector, indicating that financing issues do not constitute the main obstacle to their green transformation. Most enterprises can cover the main expenditures during the transformation process through traditional financing channels (such as enterprise cash flow and bank loans) and public funds (such as the Industriklivet project of the Swedish Energy Agency and the Innovation Fund of the European Union), and the successful transformation has a relatively significant effect on reducing the financing costs for the enterprises. For example, the oil refining company Preem, due to the stable market brought by the biofuel blending policy, has reduced financing uncertainty [15]. This survey result provides a reference and confidence for the green transformation of other enterprises.

Based on the current development of the global market, companies that are not environmentally sustainable are likely to face hefty fines, policy pressure, and a decline in their corporate reputation. Moreover, in today's era, where there are an increasing variety of green financial products, not engaging in green financing may restrict the company's financing channels and increase its financing costs.

5 Suggestions

5.1 Government

To reduce the financing costs of enterprises, the government can formulate preferential policies, such as tax relief, support for green bonds, and subsidies for green project financing, or establish a green finance development fund to provide guarantees or risk compensation for financial institutions such as banks to persuade them to provide more money to green projects at relatively inexpensive interest rates. At the same time, it is imperative to improve market transparency and fortify oversight of the green finance sector, strengthen the evaluation system for green projects, ensure the authenticity, reliability and sustainability of green projects, reduce information asymmetry for enterprises during the financing process, and enhance the confidence of financial institutions and investors in green projects of enterprises. Last but not least, government should also enhance international cooperation and exchanges and draw on the experiences and other countries' approaches in the area of green financing, in order to inject more vitality into the domestic green financial market.

5.2 Corporate

Enterprises should intensify their efforts in green transformation. By obtaining green certifications, investing in environmentally friendly projects and clean technologies, they can enhance their ESG ratings, thereby more easily obtaining support from green financial products and attracting the attention of investors. Additionally, enterprises can proactively collaborate with banks and other financial institutions, leveraging tools such as green loans and green bonds to help lower finance costs, improve the capital structure, and widen funding channels, while enhancing their competitiveness in the market. Through the guidance of government policies and the proactive transformation of enterprises, green finance can play a role in reducing the financing costs of enterprises and promoting the sustainable development of the ecological environment.

6 Conclusion

Today, with environmental protection and sustainable development receiving increasing attention, green finance, as a financial means for investment and support of environmental protection endeavors, makes it necessary to study its impact on the business operation and development of enterprises. This paper mainly focuses on how green finance affects business financing costs. The research reveals that green finance affects the financing costs of enterprises from aspects such as risk management, government policies, investors and market preferences. Most of the evidence indicates that this influence is positive. The green transformation process of some listed enterprises can also confirm this conclusion. Based on this finding, this article puts forward suggestions for enterprises and the government to promote the effective reduction of enterprise financing costs through green finance.

This article mainly conducts theoretical description and argumentative analysis to investigate how green finance affects businesses' borrowing expenses. However, it lacks data support and verification. The selected analysis cases have limited coverage and sometimes have time limitations. The conclusions may not be applicable to all enterprises. Future research should place more emphasis on the construction of quantitative models for enterprise financing costs and data analysis, and expand the research scope to more regions and industries of different enterprises, especially focusing on the changes in financing costs of enterprises in emerging industries and markets caused by green finance.

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