Study on the Motivation and Effect of Green Bond Issuance by Enterprises

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Abstract. With the growing global concern for sustainable development and environmental protection, more and more enterprises are considering the use of green financing tools, such as green bonds. This paper examines a literature review that analyzes the motivation and effects of corporate green bonds in the context of this great economic transformation. The growth of green businesses in China has accelerated recently, which has sparked a lot of discussion in the academic community about the different impacts of green bonds and the reasons behind their issuance, we have studied a large number of literatures, and came to the conclusion that the green premium's existence serves as a driving force behind the issuance of green bonds. This conclusion was reinforced by the literature review, which showed that the green premium's existence is still strong. This paper's objectives are to provide an overview of the great literature, demonstrate the state of green bond research as it stands now and the presence of the green premium, and convey our optimism for the continued growth of green bonds.

Keywords: Green bonds, motivation analysis, effect analysis.

1. Introduction

The Comprehensive Plan for Reforming the Ecological Civilization System was published in September 2015 by the CPC Central Committee and the State Council; it included recommendations for creating a green financial system, researching the issuing of green bonds by commercial banks, investment banks, and other businesses, and supporting the implementation of securities for green credit assets. Since then, China's green bond development kicked off. Green bonds are a special type of bonds used to finance environmentally friendly projects or activities, usually related to sustainable development and environmental protection. Many countries and regions have introduced policies and regulations to support sustainable development and green investment, promoting the development of green financial instruments, including green bonds. 2021 Two documents detailing the Communist Party of China's stance on carbon bonds were released by the State Council of the Central Committee in October 2021: the Full, Accurate, and Comprehensive Implementation of the New Development Idea on Doing a Good Job of Carbon Peak and Carbon Neutrality and the Action Program for Carbon Peak by 2030. And as more and more investors begin to pay attention to environmental, social and governance factors and include them in the consideration of investment decisions, green bonds are also favored by investors as a sustainable investment tool. Realizing the importance of environmental responsibility, in an effort to improve their reputation and social standing, a number of businesses have released green bonds to collect money for environmentally friendly project implementation. The history of green bond issuance can be traced to the escalation of environmental and climate change issues, government policy support, investor demand for sustainable investment, and corporate environmental responsibility awareness. The convergence of these factors has driven the expansion of the green bond market. With China's policies strongly favoring the development of a green economy, the outlook for green bonds is exceedingly promising. This paper examines recent studies on green bonds conducted in China to enhance comprehension of both the implementation and research outcomes associated with green bond issuance, as well as to provide suggestions for future study.

2. Motivation for Companies to Issue Green Bonds

2.1. Internal Dynamics

In the context of China's entry into an economy with socialist characteristics, China's business development has flourished and a large number of enterprises have begun to develop. Green enterprises have also attracted the attention of investors as an emerging force in the market, and in recent decades, the financing scale of green enterprises in the market is expanding year by year, so in order to gain the attention of investors and get their future outlook, for green firms, issuing green bonds is the best course of action. In the study that follows, we come to the conclusion that issuing green bonds can help businesses lower their financing costs and improve their reputation for being environmentally friendly.

2.2. External Environmental Influences

The Communist Party of China's report for the twentieth People's Congress states that "harmonious coexistence between human beings and nature will be fostered, and green development will be promoted. This shows China's determination to develop a green economy. The China Green Bond Standards Committee is set to officially unveil the China Green Bond Guidelines in 2022, a consistent and standardized green bond standard was created in China. It has enormous implications for China's green bond market development. Globally speaking, green bonds have already proven to be a more developed bond market strategy. In 2007, the European Investment Bank, acting as a multilateral organization, issued the first "Climate Awareness Bond" (CAB) dedicated to green projects. The World Bank followed suit in 2008, co-issuing the first "Green Bond" (CAB) with Sweden's Nordea Bank. The first bond to be specifically referred to as a "green bond" was issued by the World Bank and Nordea Bank in 2008. Therefore, from both the Chinese and international perspectives, Businesses that issue green bonds are following the current trend.

3. Analysis of the Effects of Green Bonds

3.1. Stock Effect Analysis

According to most research now available, stock prices will benefit from the issue of green bonds by Chinese listed companies. Nowadays, most research concur that the issuing of green bonds by Chinese listed companies will boost stock values. i.e., green financing behavior will bring about a significant positive stock price effect.

Green bonds as a new type of financing means, in keeping with the ideas of sustainable development and the preservation of the environment, bringing in capital funding at the same time might assist businesses in better assuming their social responsibilities, open up new development direction and profit growth point. Nonetheless, China issues relatively few green bonds; the majority are state-owned or large listed companies, and many businesses lack the necessary understanding of green finance, so there is a general problem of green financing enthusiasm is not high. Meanwhile, China's green bond market debuted later than expected, in the bond rating, information disclosure and other aspects of the relevant system is not yet sound, which has a little negative impact on whether enterprises choose green bond tools for financing.

For example, Chen in the study of market response to the release of green bonds, Data on green bonds issued by non-financial listed businesses with A-shares in China and their corresponding placebo bonds from 2016 to 2021 are used in the empirical testing. The experimental results demonstrate that, the issue of green bonds has the potential to significantly impact and raise a company's stock price under specific situations [1]. The issue of green bonds is the cause of this will get excess attention as a way to increase the stock price. In the meantime, various study findings indicate that: (i) following the release of green bonds, the cumulative abnormal return of listed businesses' stocks increases, it suggests that the company's stock price benefits from the issue of green bonds. (ii) To a certain extent, listed firms' green bond issuance can also increase enterprise value, and the financing cost and tax rate have mediating effects in the influence mechanism. (3) Additional investigation reveals that local state-owned businesses, private businesses, and others have a greater influence on enterprise value when issuing green bonds than do central businesses; compared with manufacturing industry and electric power and water conservancy industry, construction industry, wholesale and retail industry, and extractive industry have a more significant impact on enterprise value when issuing green bonds.

3.2. Analysis of Economic Effects

Green bonds will boost the economy and have a number of good effects on the business and society. The concept of the "spillover effect" of green bonds describes how issuing green bonds by businesses will drastically lower the cost of debt financing for other businesses operating in the same industry, which will enable enterprises to invest more efforts to focus on the production of green industries, and is also highly praised and recognized by investors [2].

Compared with traditional finance, green finance focuses more on combining financial business activities with pollution control and environmental protection. Under the advantage of socialist market economy system, China's green financial system is characterized by the organic combination of "active government" and "effective market", on the one hand, solving the negative externality of carbon emission through policy regulation; on the other hand, through financial market development, it can serve the financing needs of real economy in low-carbon transition. On the other hand, through the development of financial market, it serves the financing needs of the real economy in low-carbon transformation. Green financial policies are promoted by top-level design and local exploration, while local governments may lack the motivation of environmental governance due to the pressure of economic growth, even though they have the advantage of environmental information.

Additional research revealed that green bonds can contribute to cities' increased green total factor productivity, which in turn can promote the economy's better development. Aside from emphasizing the significance of green bonds in fostering economic growth and environmental preservation, the paper offers a theoretical framework and policy recommendations to advance the growth of green finance and expedite the shift towards an ecological society [3].

Important conclusions were drawn from a 2015–2021 analysis of green bonds, resource efficiency indexes, and rates of green economic development in 29 nations with developed green finance markets. It was discovered that green economic growth in the agriculture sector can be accelerated by issuing green bonds in tandem with industry-wide green economic growth. The rate at which the green economy is expanding in agriculture and resource efficiency, however, don't seem to be correlated.

3.3. Analysis of Social Effects

The introduction of green bonds will propel the evolution of both the legal and regulatory framework surrounding green bonds, alongside the expansion of the green financial sector within society.

Liu et al. also believe that China's green bond market is developing rapidly, the scale continues to expand, but at the same time there are significant problems such as imperfect market infrastructure, insufficient policy support, and more complex procedures. In the future, to ensure the sound and steady growth of China's green bonds, it is imperative to enhance the applicable laws, rules, and mechanisms [4].

China began issuing green bonds in 2016 and has seen rapid growth in the same year. Ba et al. three develop a utility-maximization model using data on the issuance of green securities in China to verify the environmental externalities of their issuance in China and the factors that influence investors as well as government policies on their rapid growth in a short period of time. Although there are still problems including complex issuance types, lax regulation, information asymmetry, disclosure irregularities, and different policies between regions, the positive factors such as China's promotion of top-down national standards, as well as facilitated issuance and the promotion of state-owned enterprises' policies, will also make green bonds have a promising future [5].

With the successive introduction of green bonds green financial policies, government support is also steadily increasing and receiving more widespread attention. Chen et al. studied how businesses are transforming to become more environmentally friendly. found that the policy of the green innovation of brown enterprises has a positive role in promoting.

3.4. Analysis of Environmental Effects

The management and preservation of the environment are greatly aided by the issuance of green bonds.

Zhang et al. conducted a national-level study investigating how green bonds impact carbon emissions reduction and the underlying mechanisms from a macro perspective. Furthermore, they validated the role of green bonds in fostering enhanced economic growth through improvements in green total factor productivity [6].

Meo et al. explored the relationship between carbon dioxide (CO2) emissions and the top ten economies that support green financing: the United States, the United Kingdom, Japan, Denmark, Hong Kong, Canada, New Zealand, Switzerland, Sweden, and Norway. Their findings affirmed that the worldwide community acknowledges that the issuance of green bonds is a beneficial contribution to environmental conservation and demonstrated its adverse impact on reducing CO2 emissions. The study's findings support the notion that the most effective financial tactic for lowering CO2 emissions is green finance [7].

Meanwhile Ye carried the research on the effects of green bonds issuance on the effectiveness of using renewable natural resources between 2012 and 2021 in 15 Asia-Pacific countries. First results, examined using FMOLS (fully modified ordinary least squares), confirm that the issue of green bonds has a good and considerable impact on the efficiency of using renewable resources over the long and short timeframes [8]. However, in the long run, it is more widespread of the impact. Despite its negative short-term coefficient, as urbanization progresses, the utilization of natural resources becomes more efficient, while inflation negatively impacts the effective utilization of renewable natural resources. To address these issues, establishing a green bond market and promoting green foreign direct investment are advised, enhance digital green bonds, and implement effective monetary policies to mitigate inflation rates.

3.5. Science, Technology and Innovation Effect

Li and Zhang conducted a study to examine the theoretical and practical implications of green bond issuance on economic development, aiming to foster a market-driven framework for green technology advancement. Employing the PSM-DID model, we thoroughly analyzed the correlation between green technological innovation at the enterprise level and the utilization of green bonds, considering heterogeneity effects. Our research, using data from A-share listed companies in China's Shenzhen and Shanghai stock exchanges spanning from 2010 to 2019, aligns with the theoretical underpinnings advocating for green bond issuance to stimulate both the quantity and quality of green technological innovations. Additionally, we conducted various robustness tests to validate our findings [9].

In their research, Zhang et al. discovered that issuing green bonds greatly improves a business's capacity for green initiative innovation by lifting financial constraints and promoting transparency, green bonds can bolster a company's innovation capacity in the realm of sustainability. Particularly in businesses facing significant principal-agent challenges and heightened external scrutiny, the impact of green bonds on fostering green innovation capacity becomes more pronounced. In a parallel study, Wang Ying and Feng Jiahao investigate how the encouragement of green financing influences corporate green innovation, specifically emphasizing the role of green bonds and utilizing the twofold difference model. Green bonds demonstrate significant potential to elevate the level of green innovation within the issuing entity, especially with regard to patents for green inventions and green utility models. The promotion effect of issuing green bonds on these two domains exhibits dynamic continuity over time [10].

However, Wu et al. discovered this by gathering information from Chinese listed firms that released green bonds between 2010 and 2019: (i) Significantly increasing enterprise issuance of green bonds, the 2016 "Notice on Pilot Green Corporate Bonds Circular" showcased effective governmental actions. Nevertheless, in general, from 2010 to 2019, the issue of green bonds by businesses did not effectively spur their breakthroughs in green technology. (ii) After the financing of green bonds, the environmental performance of enterprises improved significantly, but did not directly improve the value of the company; following the bond issue, with the advancement of green technology innovation, the value of the company was significantly improved, while the environmental performance did not improve significantly. (iii) From the standpoint of the mechanism, financial limitations, institutional ownership, corporate environmental investment, and green technological innovation, the three main aspects in the corporate issuing of green bonds and the road between are significant. (iv) The promotion of "practical technological innovation" following the issuing of green bonds is more significant than the development of "invention-based" technological innovation.

4. Conclusion

The green bond market of China is expanding quickly and is aligned with the country's efforts to transition to a carbon neutral future, and its impact on the economic and social environment is of great significance. First of all, in order to achieve the social responsibility of environmental protection and the goal of sustainable development strategy, enterprises themselves need to issue green bonds to raise funds to accomplish the set goals. Secondly, the guidance and promotion of the government's carbon emission policy, one of the factors being taken into account is the opinion of investors and their concern for social responsibility and environmental preservation. Additionally, the market's recent explosive growth for green bonds has driven businesses to start issuing green bonds. Green bonds will also have the following consequences simultaneously. Businesses that issue green bonds may find favor with investors and see an improvement in their standing and image, which will boost the value of their stock. By issuing green bonds, enterprises can obtain funds for environmental protection projects, promoting the effective allocation of resources and sustainable economic development. Businesses that issue green bonds contribute to improving their reputation in society, lead the development direction of the industry, and promote the development of society in a more environmentally friendly and sustainable direction. The use of funds from green bonds for environmental projects helps to reduce pollution, save resources, preserve the natural environment and establish the groundwork for future sustainable development. Issuing green bonds has the potential to foster creativity in the creation of environmentally friendly machinery and technology, as well as advance scientific and technological advancements.

This study can provide guidance for enterprises in green bond financing, as well as an important reference for governments, investors and other stakeholders on green finance and sustainable development, which may encourage the market for green bonds to grow healthily. The shortcomings of the main study may include insufficient analysis of the differences between different industries and regions, and limitations in data collection methods. This can be addressed by strengthening cross-industry and cross-region comparative studies, adopting more diverse data sources and analytical methods, and improving the comprehensiveness and credibility of the study.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

References

[1] Chen F.G., & Zhang Y.H. Can Green Bond Issuance Trigger Positive Market Reactions? --The Policy Incentive Effect of the "Dual Carbon" Target. Securities Market Herald, 2022, (07): 48-60.

[2] Wu Y.H., Tian Y.N., Chen Y.Y., & Xu, Q. A Study on Spillover Effects, Role Mechanisms and Performance of Green Bond Issuance. Management World, 2022, 38 (06): 176-193.

[3] Zhang K., Xiong Z.Y., & Huang X.J. Green Bonds, Carbon Emission Reduction Effect and High Quality Economic Development. Finance and Economics Research, 2023, 49 (06): 64-78.

[4] Liu W.C., Liu W.R., & Peng G. l. Research on Improvement of Green Bond Rules and System Optimization in China. Finance and Economics Theory and Practice, 2022, 43 (06): 64-71.

[5] Ba S.S., Cong Y.J., & Zhu, W.H. Analysis of Green Bond Theory and Market Development in China. Journal of Hangzhou Normal University (Social Science Edition), 2019, 41 (01): 91-106.

[6] Zhang K., Xiong Z.Y., & Huang X.J. Green Bonds, Carbon Emission Reduction Effect and High Quality Economic Development. Finance and Economics Research, 2023, 49 (06): 64-78.

[7] Meo M.S., Abd Karim M.Z., Saeed A.F., & Zaini A. The role of green finance in reducing CO2emissions: An empirical analysis. BORSA ISTANBUL REVIEW, 2022, 22: 169-178.

[8] Ye X. Rasoulinezhad Ehsan. Assessment of impacts of green bonds on renewable energy utilization efficiency. RENEWABLE ENERGY, 2022, 202: 626-633.

[9] Li B.Y., Zhang J.Y., Shen Y. Du Q. Research on the Path and Mechanism of Green Bond Issuance on Green Technology Innovation. Research Management, 2023, 44 (11): 134-142.

[10] Wang Y., & Feng J.H. Research on Green Bonds to Promote Enterprises' Green Innovation. Financial Research. 2022, (06): 171-188.