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Analysis of Green Bonds Market in China in Terms of PEST Model

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Abstract: Green finance has grown as a strategy in recent years for attaining sustainable development and resolving the tension between economic growth and climate change. Today, green bonds dominate the ESG (Environment, Social and Governance) themed bond market, and in this new era of green development, China's green bond market is becoming increasingly influential in the international arena. However, the development of green bonds in China is immature, and despite the existence of unified principles in policy this year, the China's green bond market is still relatively inactive compared to foreign countries, and the motivation of issuers and investors needs to be evoked. The PEST model is used to analyze the macro environment of a market or an enterprise, focusing on the four most influential external factors, namely Politics, Economy, Society and Technology, to analyze the macro environment of the Chinese green bond market. This paper therefore applies the PEST model to analyze the domestic green bond market environment and make recommendations for green bonds market in China to reach a higher level of development. By analyzing four major factors in the green bond market - political, economic, social and technological - this thesis is known to show that the current green bond policy tends to improve, the market is growing at a faster rate and the participation of private enterprises in society is low. Therefore, the analysis of the green bond market gives difficulties faced by the advancement and the ways to solve them.

Keywords: green bonds, ESG, green finance, China

1. Introduction

Green bonds are those designed to finance initiatives that enhance the environment and/or the climate change. Known for their low-risk profile and attractiveness to institutional and socially responsible investors, green bonds are becoming increasingly prominent in green finance. The Green Bond Principles published by the International Capital Markets Association (ICMA) (2021) define a green bond as any sort of bond instrument whose funds will only be used to finance or re-finance, in whole or in part, new and/or existing qualifying Green Projects that are in line with the GBP (Green bonds principles)'s four main components [1]. As global issues such as climate warming and environmental pollution deteriorating. Green bonds, one of the key instruments of green finance, have flourished internationally in response to the lack of funds for the growth of the green economy, allowing environmental industries to access greater social resources and reducing investment risk. This essay focuses on the green bond market in China as a foothold and provides a macro analysis of the four

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major external factors affecting the market-political, economic, social, and technological (PEST)-based on an understanding of its current situation. The purpose is to analyze information about the current green bond industry in China from the above four aspects in order to identify the problems that hinder the development and to provide different ways of thinking for scholars to study in related fields, thus promoting the advancement of green bond market in China.

2. Status of China's Green Bond Market

China's green bond market started in 2015, and with the release of the definition of green bonds and related principles and guidelines, the top-level design of China's green bond market has continued to expand. The green bond market in China grew rapidly in 2021, with a year-on-year increase of US$44.4 billion in issuance meeting the CBI's definition of green bonds, leading the global market [2]. China's green bond market will continue to be an indispensable part of the fast-growing global green bond market. In terms of cumulative and yearly issuance of CBI-defined green bonds, China has the second-largest market around the world. However, labelled green bonds (green bonds issued with regulatory approval) account for only about 1% of the overall bond market in China, leaving significant room for growth.

3. PEST Analysis of China's Green Bond Market

PEST is a useful strategic model to understand the growth or decline of a market, business environment, potential and direction of an organization or industry. The political environment is analyzed in terms of how a government intervenes in the economy of that market, for example by issuing policies to drive the market; the economic dimension includes economic growth, interest rates, currency exchange rates, and inflation rates; the social dimension considers factors like safety priorities, population growth rates, age distribution, work attitudes, and health awareness; the technological dimension relates to technological aspects and factors that influence price fluctuations in that industry or market. [3] By examining the four dimensions, one can better understand the external environment of a particular sector and thus develop strategies to drive the development of the sector.

3.1. Analysis of the Political Environment

In 2022, the China Green Bond Standard Committee officially released *the China Green Bond Principles*, which clarify the four core elements of Chinese bond issuance - Use of Proceeds, Process for project evaluation and selection, Management of Proceeds, and Reporting [4]. In terms of the use of proceeds, it must be ensured that 100% of the funds raised by green bonds must be used for green industries, green projects, and green economic activities. Secondly, qualified green projects of foreign issuers must meet the relevant requirements of *Common Catalogue of Sustainable Finance and Sustainable Finance Classification Scheme*. In terms of Process for Project Evaluation and Selection, Principles require issuers to specify specific information on green projects, allowing for the possibility of choosing green projects after funding prior to issuance, but still requiring clarity on the evaluation results and selection process for fundraising projects. It is recommended that issuers engage an independent third-party evaluation and certification body to carry out the evaluation and certification. In terms of Management of Proceeds, in line with the GBP requirements, the principle requires issuers to manage the proceeds in separate accounts or to have some formal internal process to ensure that the flow of credit or investment funds for green projects is traceable. In addition, temporarily idle proceeds from green bonds may be managed in cash without affecting the normal use of the proceeds, provided that the duration of a single investment does not exceed 12 months. In terms of reporting, *Principles* require that information on the use of funds raised before they are fully

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invested be kept on file and retained for more than two years after the expiry of the life of the bond, and that the total use of funds obtained, the status of green initiatives, planned or actual environmental advantages, etc. must all be disclosed by issuers on an annual basis. Half-yearly or quarterly disclosure and continuous third-party tracking and assessment certification and disclosure of relevant reports are encouraged.

3.2. Analysis of the Economic Environment

Quoted from *China Green Bond Market Report* (2022), green bond issuance that meets both the Chinese and CBI green definitions amounted to US$68.2 billion (RMB444.1 billion) in 2021, with cumulative issuance reaching nearly US$200 billion (nearly RMB1.3 trillion) by the end of 2021. In 2021, approximately 62% of China's labelled green bonds are included in the CBI green bond database, an increase of 10 percentage points over the same period in 2020 [2]. The data shows rising enthusiasm in the Chinese green bond market.

3.3. Social Environment Analysis

A high proportion of Chinese bonds are issued by Chinese state-owned enterprises, with high ratings but are influenced by policies. Of the 403 green bonds with corporate attributes in the Wind database, 299, or 74%, were issued by central state-owned businesses and regional state-owned businesses, of which 173, or 99.4%, were investment grade bonds with AAand above ratings. In contrast, among the 21,732 outstanding bonds with corporate attributes, 17,603 are issued by SOEs, accounting for 81% of the total, and 16,303 are rated by SOEs, with 16,046 AA- and above, accounting for 98.4% of the total [5]. By 2021, SOEs will account for 97% of green bonds issued in China by a number of issues and nearly 99% by value. The state-owned economy plays a significant role in the growth of China's green bond market today, and its larger percentage makes it easier to carry out governmental programs. For the usage of the funds from green bonds, nearly 90% of the funds raised in 2021 are for renewable energy, low-carbon transport, and low-carbon buildings over the world, and these kinds of projects receive 88.3% of the money raised in China's green bond market. The amount of money raised for renewable energy surged by 3.6 times to US$41.3 billion (RMB 266.4 billion), making up 60.6% of the total amount of money raised on the domestic and international green bond markets in China in 2021. The largest issuance deals to raise funds for renewable energy came from China Development Bank, State Grid and State Power Investment [2].

3.4. Analysis of Technological Dimension

Studies on the dependence of green bonds and financial markets show that green bonds are weakly synchronized with equity and energy commodity markets due to the influence of corporate and fixed income prices of national bonds, show time-varying dependence and weak symmetric tail dependence with equity markets, and exhibit weak tail independence with energy commodity markets [6]. On the other hand, green bonds offer considerable diversification advantages to investors in equity and energy markets. Ng and Tao found that green bonds issued by organizations or projects with high credit ratings have liquidity, which can provide financiers with short-term exit strategies or shorter payback periods, which can diversify risk for the investors base of green projects [7].

4. Barriers to the Development of Green Bonds

The first is that greenwashing can seriously disrupt the green bond market and make investors lack confidence in the market. Secondly, the certification process for green bonds is complex and

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relatively costly, and there are currently too few third-party certification bodies in China, with a variety of methods of assessment and certification, resulting in uneven evaluation results.

4.1. Greenwashing

The current regulatory policy primarily demands issuers disclose information on a qualitative level, but does not explicitly state the precise content of projects that must be disclosed, nor does it disclose the evaluation standards for green projects or the procedures for quantitative calculation. Bondholders may have concerns regarding the real use of the invested funds and their influence on the advancement of environmental causes due to widespread greenwashing. Greenwashing is the practice of the frequent misleading of the interested parties occurs due to untrue information about a certain product or service's environmental performance than it actually is [8].

4.2. High Certification Costs and Complex Processes

Labelling green bonds can highlight their environmental friendliness and thus draw investors with ESG mandates [7]. It's crucial to highlight that many potential issuers are still unfamiliar with some capital markets. A professional external verifying body's review can cost anywhere between 10,000 and 100,000 USD. Such large sums could be prohibitive for smaller issuers [8]. The People's Bank of China, the Development and Reform Commission, and the Banking Regulatory Commission have their own systemic requirements for project certification, which can cause problems for investors in identifying projects as 'green'. In addition, there is a wide range of methods used by market certification and assessment agencies, and the assessment and certification index systems are chosen differently and given different weights, which ultimately leads to a large difference in the green rating given by different agencies for the same project and misleads investors in their investment behavior. On the other hand, the disparities between domestic and international institutions' green bond certification criteria, particularly the comparatively shoddy design of domestic second opinion or third-party certification systems, impede the quick expansion of the China’s green bond market.

5. Recommendations

By assessing and planning green projects, the government can provide credit guarantees for the projects, reducing the cost of financing for investors in green projects and addressing information asymmetries to a certain extent. Greenwashing is caused by the use of false disclosures that make the actual effect of a project on the environment far less than the disclosed effect. If the government can strengthen its intervention and review of green projects, the funds raised from green bonds can be used to improve the environment to the greatest extent possible.

The government needs to establish a common process to label and rate more green bonds to prevent the diversification and abuse of labels and to improve investor confidence. Certification is too costly and complex because different certification bodies have their own evaluation systems, and when issuers hire a third party to evaluate a green bond when it is issued, there is no guarantee that a fair assessment of the project will be made. If the government could issue a unified certification process, third party certification constitution could follow the government's procedures for labelling and certifying green bonds, thus regulating the issuance of labelled green bonds.

6. Conclusion

This paper focuses on the four main factors affecting China's green bond market - political, economic, social and technological - and, based on the analysis, points out the shortcomings and offers solutions. In terms of the political environment, China's green bond policy is now largely in line with

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internationally recognized green bond principles, but there are few domestic bond certification bodies. In terms of the economic environment, there has been a significant increase in issuance volumes and the Chinese green bond market is increasingly favored by capital. In terms of the social environment, Chinese green bonds are mainly issued by state-owned enterprises, with most of the funds raised being invested in renewable energy, low-carbon transport and low-carbon buildings. On the technical side, green bonds issued by organizations or projects with high credit ratings have a certain degree of liquidity and can provide financiers with short-term exit strategies or shorter payback periods. On the other hand, despite the fact that the current regulatory policy primarily calls for issuers to disclose information qualitatively, it does not outline the precise project content that must be disclosed. Additionally, it does not disclose the evaluation standards and quantitative calculation methods for green projects, which creates a risk of greenwashing. Two recommendations are given in this thesis. Firstly, the government could set up a certification platform to provide credit guarantees for projects. Secondly, the government should establish a common set of certification standards to label and rate more green bonds. Subsequent research could focus on the extent to which the funds raised by green bonds have an impact on the environment and assess the actual effectiveness of green bonds.

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