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Research on the Development of SPDB's Green Finance Business from the Perspective of Green Economy

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Abstract

Currently, China is at a critical stage of restructuring its economy and transforming its development model. The development of green finance can further optimize the industrial structure, allocate socio-economic resources in a rational and efficient manner, continuously promote the green and healthy upgrade of industries, and deeply facilitate the sustainable development of China's economy and society. Green finance is increasingly becoming a new trend in the development of financial institutions, especially in the banking industry. As one of the first commercial banks to engage in green finance, Shanghai Pudong Development Bank (SPDB) offers valuable insights for the study of green finance development, providing a reference for other commercial banks. This article analyzes the current state of SPDB's green finance development, identifies existing challenges, and proposes countermeasures for the development of SPDB's green finance business.

Keywords

Green Economy; Green Finance; SPDB.

1. Introduction

From the perspective of business sustainability, green development is a key component of the "Five Development Concepts" and has received high-level national attention. The "13th Five-Year Plan" highlighted the establishment of a green financial system as a national strategy. Commercial banks are a crucial funding source for enterprises, and by engaging in green finance, they can guide companies to reduce energy consumption, significantly lower pollution levels, and achieve industrial restructuring and upgrading. This is an essential support for implementing China's green development strategy. Currently, banks are joining the "green wave," with the development of green finance showing a trend of growth across multiple sectors, including primarily green loans and green bonds, as well as products like green insurance, green funds, and green trusts etc.

As of January 2022, a total of 1,259 green bonds had been issued nationwide, with an aggregate scale of RMB 1.746753 trillion, making China the second-largest issuer globally. Of these, 235 green bonds were issued for financial institutions, amounting to RMB 756.87 billion, while non-financial enterprises issued 1,024 green bonds, totaling RMB 989.883 billion. The 19th National People's Congress pointed out that China's economy has transitioned from a phase of rapid growth to a phase of high-quality development focused on green development. Vigorously promoting green finance and implementing green development measures are effective ways to deepen supply-side structural reform in the new era and are essential components of leading high-quality economic growth. As a commercial bank with national influence, SPDB actively responds to national policies and conducts relevant research to effectively promote the green finance market's development. By conducting in-depth studies on the connotation and extension of green finance, SPDB can better understand and adapt to this emerging financial model, thus creating more opportunities and benefits for its business operations. Green finance

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is not only a risk management tool but also helps banks optimize resource allocation, improving their operational efficiency and quality, thereby furthering sustainable development. In summary, SPDB's research on green finance is driven by global environmental concerns, China's emphasis on green finance development, and the bank's strategic needs. While achieving both economic and environmental benefits, SPDB actively participates in and leads the development of the green finance market. [2]

2. Analysis of the Current Status of SPDB's Green Finance Business

Since SPDB began its green finance initiatives, it has achieved a series of accomplishments, pioneering multiple innovations in green finance within China. The bank has continually enhanced and diversified its green product offerings, expanded the scope of its green finance business, and refined its green finance system. SPDB has frequently been the first to launch green finance products in China, highlighting its role as a leader in the development of green finance, driving and guiding the rapid growth of green finance domestically, and making significant contributions to China's green finance sector.

2.1. SPDB's Five Key Green Finance Sectors

2.1.1. Energy Efficiency Financing

Energy efficiency financing provides financial services aimed at enhancing efficiency and resource utilization on the energy demand side. Key applications include energy-saving retrofitting of industrial boilers and kilns, fuel-efficient internal combustion systems, motor system energy-saving upgrades, and waste heat recovery.

2.1.2. Clean Energy Financing

Clean energy financing focuses on financial services for the energy supply side, supporting clean energy utilization, primarily targeting areas such as wind power, hydropower, nuclear power, solar power generation, and solar thermal utilization.

2.1.3. Environmental Protection Finance

Environmental protection finance provides financial services aimed at environmental management, covering water resources, air pollution, solid waste, and urban environmental governance. Key areas of application include water treatment and air pollution control etc.

2.1.4. Carbon Finance

Carbon finance offers financial services for carbon emissions rights and emissions trading. SPDB's main carbon finance cases include carbon trading financial advisory and international carbon factoring finance etc.

2.1.5. Green Equipment Supply Chain Financing

Green equipment supply chain financing provides financial services primarily for manufacturers within the green equipment supply chain, covering critical areas such as new energy vehicles, ships, aircraft, and smart grids etc.

2.2. SPDB's Ten Green Finance Innovative Products

1) IFC Energy Efficiency Loan Product: In partnership with the International Finance Corporation (IFC), SPDB shares the risk of potential losses and provides financial support to green enterprises, energy-saving and environmental protection projects, and clean energy product development etc.

2) AFD Green Intermediary Loan Product: SPDB connects various environmentally friendly, efficient, and green technology projects with funding from the French Development Agency (AFD) through intermediary loans to support project development.

3) ADB Building Energy Efficiency Financing Product: In cooperation with the Asian Development Bank (ADB), SPDB shares risks associated with green building energy efficiency and environmental protection projects. Johnson Controls (JCI) provides some of the environmental equipment and services, making SPDB the first bank in its industry to launch a domestic building energy efficiency financing product.

4) Contract Energy Management Future Revenue Pledge Financing Product: SPDB provides financial support to energy-saving and environmental protection companies with financing needs, using future revenue rights stipulated in energy service contracts as collateral.

5) Contract Energy Management Factoring Financing Product: SPDB recognizes some energy management projects as high-quality, allowing energy service companies to obtain financial support by transferring future revenue rights.

6) CDM Financial Advisory Product: The Clean Development Mechanism (CDM) is a carbon emissions trading mechanism. SPDB collaborates with other institutions to provide a range of carbon finance services for CDM projects.

7) International Carbon Factoring Financing: Under the Clean Development Mechanism, SPDB leverages its carbon finance expertise to offer factoring financing and related financial services for CDM project owners.

8) Pollution Discharge Right Collateral Financing: Pollution discharge rights are used as collateral for financing from SPDB.

9) Green Equity Financing Product: Leveraging a broad capital market platform, SPDB provides diverse support channels for equity financing, including recommending strategic investors and capital operation solutions for energy-saving, environmental protection, and green innovative companies.

10) Green Fixed-Income Financing Product: As the lead underwriter, SPDB assists green technology companies in issuing securities, thereby expanding direct financing channels for these enterprises.

3. Analysis of SPDB's Green Finance Development

3.1. Scale of SPDB’s Green Finance Investment:

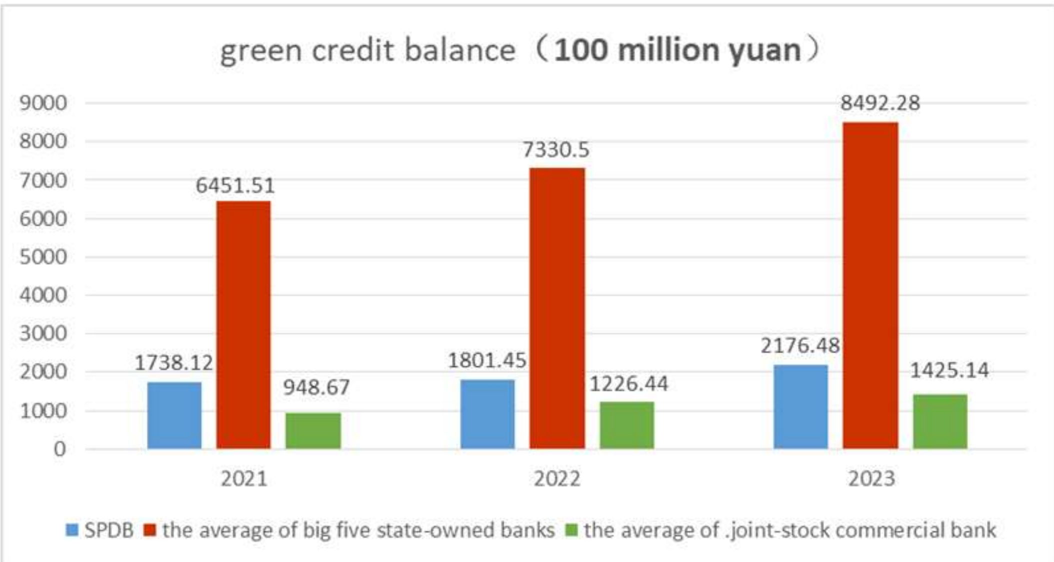

Figure 1. Comparison of SPDB’s Green Finance Investment Scale

Data Sources: China Banking Regulatory Commission, SPDB Social Responsibility Report

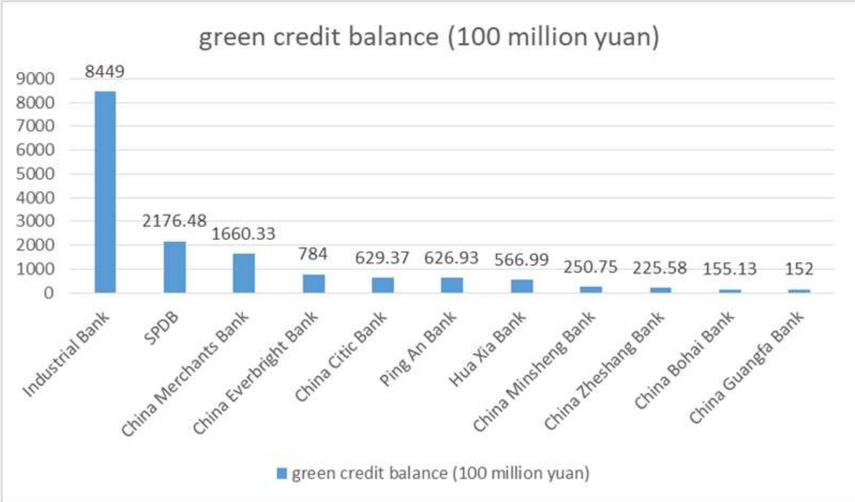

Figure 2. Comparison of Green Finance Investment Scale among Joint-Stock Commercial Banks

Data Source: Social Responsibility Reports of Various Commercial Banks

As shown in Figure 1, although SPDB's green credit balance does not match that of state-owned commercial banks, it is higher than the average green credit balance of other national joint-stock commercial banks. The reason for the gap with state-owned banks is their larger funding scale. The fact that SPDB surpasses the average of joint-stock banks indicates that its green finance investment scale is relatively substantial, demonstrating SPDB's proactive approach to developing its green finance business.

Additionally, a comparison of national joint-stock commercial banks in 2023 (as shown in Figure 2) reveals that SPDB ranks second in green credit investment among these banks, trailing only Industrial Bank. SPDB's green credit balance is RMB 217.648 billion. Although there is some gap with Industrial Bank, SPDB remains a leader among national joint-stock commercial banks in terms of green credit investment.

3.2. Comparison of SPDB's Green Finance Development Speed

Table 1. Comparison of Green Finance Development Speed among Joint-Stock Commercial Banks

Bank Name	Total Assets in 2023 (billion RMB)	Green Credit Balance in 2023 (billion RMB)	Year-on-Year Growth Rate of Green Credit Balance in 2023
Industrial Bank	67116.57	8449.00	24.14%
CITIC Bank	60667.14	629.37	4.27%
SPDB	62896.06	2176.48	20.82%
China Merchants Bank	67457.29	1660.33	5.68%
Ping An Bank	34185.92	626.93	-22.45%
China Everbright Bank	43573.32	784.00	4.67%
Huaxia Bank	26805.80	566.99	6.48%
Bohai Bank	10344.51	155.13	-15.78%
China Zheshang Bank	16466.95	225.58	522.12%
China Guangfa Bank	20352.08	152.00	54.63%
China Minsheng Bank	59948.22	250.75	-16.47%

Data Source: Annual Reports of Various Banks, 2018.

Among national joint-stock commercial banks, there is little difference in overall asset scale, yet green credit balances vary significantly. This indicates that the development of green finance differs across banks; some are advancing more quickly and effectively, while others have slower growth. As shown in Table 1, certain banks even exhibit negative growth in green credit balance, highlighting a polarization in green finance development among national joint-stock commercial banks.

As seen in Figure 3, SPDB's green credit balance growth rate is 20.82%, which exceeds the average green credit growth rate of 16.20% for national joint-stock commercial banks and is significantly higher than the median growth rate of 5.68%. This demonstrates that SPDB's green finance business is growing at a relatively fast pace.

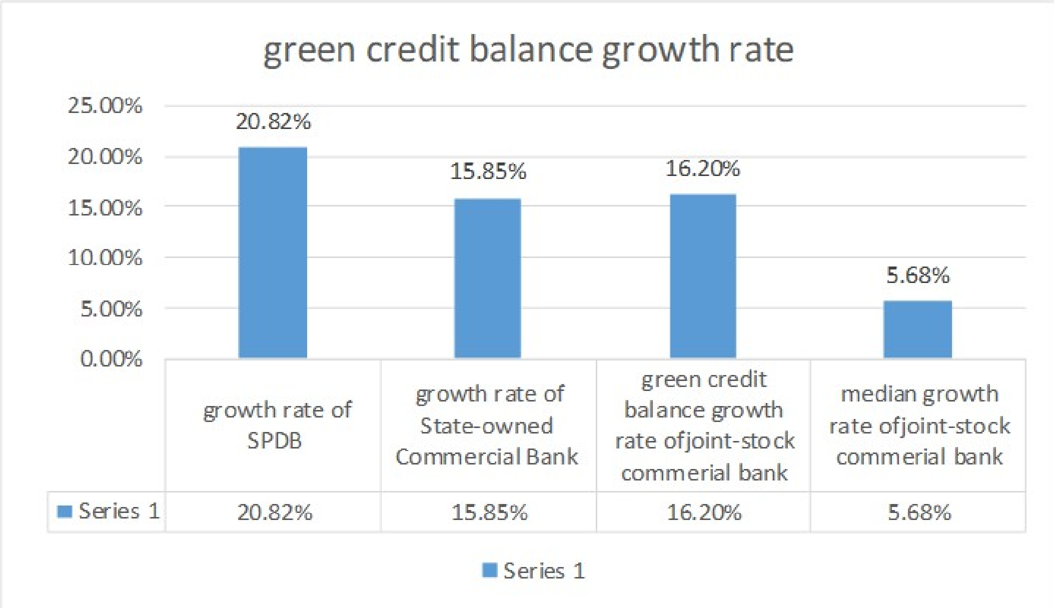

Figure 3. Comparison of SPDB's Green Finance Business Growth Rate

Data Source: Social Responsibility Reports of Various Commercial Banks

4. Successful Experiences in the Development of SPDB's Green Finance Business

4.1. Comprehensive Green Finance Framework Lays a Solid Foundation

SPDB's establishment of a "Five Major Sectors" and "Ten Innovative Products" structure has laid a solid foundation for its green finance business, creating a comprehensive service system that provides a clear direction for developing green finance. Building on this framework, SPDB has continuously innovated, introducing groundbreaking products like China's first "carbon bond" in 2014 and the first domestic green financial bond in 2016. These initiatives filled a gap in China's carbon market for direct financing products, driving substantial progress in green finance from theory to practice. This demonstrates that SPDB's foundational green finance framework plays a positive role in advancing its future green finance operations. [3]

4.2. Flexible Business Innovation Mechanisms Seize Market Opportunities

In the process of developing green finance, SPDB has not only continuously invested resources but has also closely aligned with national policies and market dynamics, adapting flexibly. This approach demonstrates SPDB's ability to stay current with trends and innovate, adjusting its strategies in response to changing circumstances. For instance, SPDB has continuously adjusted and improved its approach, evolving from the "Green Finance Integrated Service Solution 1.0"

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to "Green Finance Integrated Service Solution 2.0" based on market conditions. This responsive mechanism enables SPDB to seize development opportunities repeatedly in green finance, achieving rapid growth.

4.3. Emphasis on International Cooperation and Strong Global Resource Integration Capabilities

In its development process, SPDB has actively sought to expand internationally, increasing its operational scale, while also continuously pursuing collaborations with international financial institutions to promote green finance development. SPDB has demonstrated a strong ability to integrate and utilize international resources. For example, in its IFC Energy Efficiency Loan product, it leverages the global technical resources of the International Finance Corporation to provide international technical assistance and consulting services. In the AFD Green Intermediary Loan product, SPDB relies on low-cost funding from the French Development Agency to enhance project profitability through reduced loan interest rates. Similarly, in the ADB Building Energy Efficiency Financing product, SPDB partners with Johnson Controls, a global leader in building solutions, to offer comprehensive technical support and implementation services for building energy efficiency projects. These initiatives have empowered SPDB to strengthen and streamline its journey in green finance. [1]

5. Analysis of Issues in SPDB's Green Finance Business

Although SPDB's green finance business has developed relatively smoothly and is in a leading position domestically, there are still shortcomings and areas that need improvement.

5.1. Lack of Retail Green Finance Business

Retail green finance can also significantly contribute to green finance development by encouraging broad public participation in energy conservation, emission reduction, and low-carbon initiatives, which is essential for achieving a green transition. Currently, however, SPDB's retail green finance offerings are limited. As shown in Table 2, retail loans accounted for 40.46% of SPDB's loan structure in 2023. Expanding its retail green finance business could greatly enhance SPDB's role in advancing green finance.

Table 2. Structure of SPDB's Loan Business in 2023

Product Type	SPDB	
	Loan Amount (billion RMB)	Proportion (%)
Corporate Loans	21708.63	51.20
Bill Discounting	3534.95	8.34
Retail Loans	17154.25	40.46
Total	42397.83	100

Data Source: SPDB 2022 Annual Report.

5.2. Insufficient Green Credit Scale Compared to State-Owned Commercial Banks

Although SPDB's green credit is at a relatively high level among domestic joint-stock banks, it remains lower compared to state-owned commercial banks. This disparity is primarily due to the difference in scale between joint-stock banks and state-owned banks, placing joint-stock banks at a disadvantage in terms of green credit scale. This is a common challenge faced by most joint-stock banks. For SPDB to achieve a green credit scale comparable to that of state-owned commercial banks, a substantial increase in investment would be required.

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5.3. High Risk of Green Finance Projects

The high risk associated with green finance is primarily due to longer loan cycles, lower profitability, and the smaller size and uncertain profitability of some green environmental enterprises. This can increase the economic costs for lending banks in the short term, creating financial pressure. The high-cost, high-risk, and low-return nature of green finance can also reduce the enthusiasm of some banks to engage in this business. However, SPDB's active involvement in green finance increases its short-term risk. For SPDB, it is very crucial to implement effective risk control measures to keep risks within a reasonable and manageable range.

5.4. Shortage of Specialized Talent

As green finance continues to develop, the demand for specialized, interdisciplinary talent in this field is also growing. Green finance is a complex, emerging business that spans multiple fields and evolves rapidly. Currently, SPDB has a shortage of professionals in this area, which can lead to challenges due to the lack of expertise when expanding green finance operations. To address this, SPDB needs to implement measures to attract and recruit talent, strengthening its professional team to support green finance development.

6. Suggestions for Enhancing SPDB's Green Finance Business Development

6.1. Develop Retail Green Finance Business

SPDB should accelerate the development of its retail green finance business by innovating and creating efficient, distinctive financial products that meet public demand and align with current trends. This could include actively developing green consumer loans, green credit cards, and green financial products targeted at individuals. By establishing a comprehensive retail product system focused on "green and low-carbon" inclusivity, SPDB can both expand green project offerings and enable individual investors to participate in green investments. This approach would make SPDB's green finance business more comprehensive, targeted, and far-reaching, supporting green living and advancing green development. [4]

6.2. Strengthen Innovation in Green Credit Business

To overcome the disadvantages in green credit scale, SPDB should focus on refining, diversifying, and enhancing the convenience and flexibility of its green finance offerings, accelerating the pace of innovation in green financial products. By continually developing unique and innovative green finance products, SPDB can leverage its distinctive advantages to build a differentiated core competitiveness. Increased research and innovation in green finance products can make these offerings more diverse and comprehensive. There are still many underdeveloped or unexplored areas in domestic green finance, such as green funds, insurance, and trusts etc. For instance, SPDB could introduce products like green project receivables securitization and green asset-backed notes, actively promote carbon market development, and encourage the growth of carbon funds, carbon trusts, and carbon futures in carbon finance to stimulate carbon market trading. Additionally, SPDB could explore cross-border transactions in the green finance market to enhance the liquidity of green products.

6.3. Mitigate Green Finance Risks

To mitigate financial risks, SPDB can refer to certain provisions of the "Equator Principles." This includes identifying and assessing potential risks before, during, and after lending, integrating environmental and social risks into project evaluations. Projects that meet criteria should be prioritized, while those that do not should have limited access to loans, minimizing adverse environmental impacts throughout the project lifecycle. By collaborating with government agencies, financial institutions, and enterprises, SPDB can establish a robust risk analysis and early warning mechanism. This will allow green finance funds to be used more effectively and further enhance SPDB's risk management capabilities.

6.4. Strengthen the Development of a Specialized Talent Pool

Specialized talent plays a crucial role in advancing green finance. Therefore, SPDB needs to focus on cultivating and attracting specialized green finance talent, expanding its pool of professionals to provide a continuous source of talent for the development of its green finance initiatives. SPDB can establish dedicated green finance teams or institutions to oversee green project operations and design green financial products, fostering the bank's positive growth in this area. Collaborations with environmental and educational institutions to jointly train green finance talent, as well as enhanced benefits and incentives, can help attract and retain the skilled professionals necessary for sustainable development in green finance.

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