THE FACTORS INFLUENCING THE IMPLEMENTATION OF GREEN CREDIT IN CHINA MERCHANTS BANK: A CASE STUDY OF BEIJING HAIDIAN SUB-BRANCH

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AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION
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This Independent Study Has Been Approved as a Partial Fulfillment of the Requirements for the Degree of Master of Business Administration

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ABSTRACT

The effective implementation of green credit policies by banks is crucial for ensuring the development of green finance. Government authorities continue to regard green credit policies as an effective measure for advancing green finance, encouraging commercial banks to actively implement these policies. China Merchants Bank (CMB) is actively pursuing sustainable development through green credit initiatives. However, several constraints currently hinder the full development of CMB's green credit business. This study aimed to conduct an in-depth analysis of the factors influencing its green credit performance, identify existing challenges, and propose enhancement strategies to improve operational effectiveness. The research objectives were specifically manifested in the following dimensions: 1) To examine the impact of government policy orientation on China Merchants Bank's green credit implementation; 2) To examine the impact of bank management mechanism on China Merchants Bank's green credit implementation; 3) To examine the impact of corporate green development on China Merchants Bank's green credit implementation; and 4) To examine the impact of financial environment on China Merchants Bank's green credit implementation.

This study adopted a quantitative methodology featuring a specially designed structured questionnaire survey. This study adopted a completely anonymous format, distributing questionnaires via the "Wenjuanxing" online survey platform. A total of 187 responses were collected. After excluding unreliable submissions, 180 valid questionnaires remained, yielding an effective response rate of 96.3%. The regression analysis indicated the statistically significant impact of all four key factors on green credit implementation.

Based on the data analysis results, this study proposed the following measures to facilitate the implementation of green credit: accelerating the construction of legal framework for green credit, establishing an effective information - sharing mechanism and enhancing the green credit incentive framework

Keywords: green credit, government policy orientation, bank management mechanism, corporate green development, financial environment, China Merchants Bank

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Finally, I would like to extend my appreciation to all the faculty members and staff of Siam University who have contributed to my growth and development as a student. Their unwavering support and encouragement have been a source of inspiration and motivation to me.

WU ZIFENG

DECLARATION

I, Wu Zifeng , hereby declare that this Independent Study entitled "*The Factors Influencing the Implementation of Green Credit in China Merchants Bank: A Case Study of Beijing Haidian Sub-branch*" is an original work and has never been submitted to any academic institution for a degree.

(Wu Zifeng)

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Chapter 1 Introduction

1.1 Background of the Study

The rapid development of the global economy has triggered significant environmental challenges. Extensive economic growth models have exacerbated problems including environmental pollution, ecological degradation, and unsustainable depletion of natural resources. In October 2017, the 19th National Congress of the Communist Party of China outlined a strategic direction to "prioritize green industry development," advocating for vigorous expansion of green economy, circular economy, and low-carbon economy to achieve synergistic progress in both socioeconomic development and ecological conservation (Ding et al., 2021). Financial institutions wield substantial influence over environmental outcomes, with the capacity to either accelerate or impede progress toward environmental sustainability (Liu, 2022). Their lending decisions, such as whether to finance green technologies or polluting industries, demonstrate this critical role. As primary capital allocators across all economic sectors, banks and financial institutions possess exceptional leverage to facilitate the transition to a green economic model.

Over the past 25 years, international banks and investors have addressed environmental issues through voluntary codes of conduct, such as the United Nations Environment Programme Finance Initiative, the Equator Principles for project financing, and the UN Principles for Responsible Investment (Ma, 2016). Participation in these voluntary initiatives helps signatories enhance their reputation, gain public recognition, and improve risk management, along with adopting stricter standards and increasing transparency. The Equator Principles adopted by international financial institutions have significantly influenced the operational philosophy of Chinese financial institutions, leading to the introduction of green credit policies. To guide financial institutions in optimizing resource allocation and integrating economic development with environmental governance, government agencies have utilized financial instruments to promote sustainable development and foster a green economy (Wang, 2019).

The effective implementation of green credit policies by banks is crucial for ensuring the development of green finance. Government authorities continue to regard green credit policies as an effective measure for advancing green finance, encouraging commercial banks to actively implement these policies (Wang & Wang, 2021). With the outstanding balance of green credit showing consistent annual growth. In 2013, the green credit balance of 21 major Chinese commercial banks reached 5,198.31 billion

yuan. Subsequently, the China Banking Regulatory Commission (CBRC) intensified its support for green credit initiatives, requiring commercial banks to increase lending for green projects while reducing financing for high-pollution, energy-intensive industries (Jiang et al., 2020). This policy guidance has successfully channeled capital toward environmentally sustainable sectors. By June 2017, the green credit balance of these 21 commercial banks had expanded to 8,221.968 billion yuan, demonstrating the substantial scale of green credit adoption in China's banking sector (Mao, 2018).

1.2 Questions of the Study

China Merchants Bank (CMB) has established itself as a vanguard in green finance development. While pioneering innovative green deposit products, the bank has significantly increased capital allocation to environmentally sustainable sectors, with strategic focus areas including energy conservation, clean production, renewable energy, ecological protection, green infrastructure upgrades, and green services (Shi et al., 2022).

CMB is actively pursuing sustainable development through green credit initiatives. The bank plans to gradually phase out loans to high-pollution and energy-intensive enterprises while reducing non-performing loan ratios, supporting green industry development, and facilitating local economic transformation. To strengthen its green credit framework, CMB has adopted the Equator Principles to standardize green lending operations. Unlike traditional commercial bank credit that primarily focuses on financial profitability, green credit requires comprehensive evaluation of both economic returns and potential environmental and social impacts (Su & Yi, 2022). However, several constraints currently hinder the full development of CMB's green credit business. Therefore, conducting an analysis of the factors influencing CMB's green credit practices is crucial for identifying existing challenges and formulating targeted solutions, which will play a pivotal role in advancing the bank's green credit development.the financial environment.

1) How does government policy orientation affect the green credit implementation of China Merchants Bank?

2) How does bank management mechanism affect the green credit implementation of China Merchants Bank?

3) How does corporate green development affect the green credit implementation of China Merchants Bank?

4) How do the financial environment affect the green credit implementation of

China Merchants Bank?

1.3 Objectives of the Study

The green credit policy mandates that banks provide financing for environmental protection, emission reduction, and energy efficiency projects while restricting loans to high-pollution, high-emission, and overcapacity industries (Li et al., 2016). Beyond mitigating environmental damage, this policy aims to reduce the identified financial risks associated with heavily polluting sectors, with the anticipated ancillary benefit of enhancing stability in the financial sector.

As a key financial institution in China's national-level technological innovation hub, China Merchants Bank's Haidian Sub-branch in Beijing possesses distinctive geographical advantages and strategic significance. Serving as a policy innovation pilot, the sub-branch actively participates in the central bank's green finance reforms, implements Zhongguancun's dual "technology + green" pilot policies, and functions as the primary settlement bank for Beijing's carbon emission trading.

This study aims to conduct an in-depth analysis of the factors influencing its green credit performance, identify existing challenges, and propose enhancement strategies to improve operational effectiveness. The research objectives are specifically manifested in the following dimensions:

1) To examine the impact of government policy orientation on China Merchants Bank's green credit implementation.
2) To examine the impact of bank management mechanism on China Merchants Bank's green credit implementation.
3) To examine the impact of corporate green development on China Merchants Bank's green credit implementation.
4) To examine the impact of the financial environment on China Merchants Bank's green credit implementation.

1.4 Scope of the Study

Based on the theoretical framework and a systematic analysis of the current development status of green credit, this study identified four key dimensions influencing the implementation of green credit by commercial banks: government

policy orientation, bank management mechanisms, corporate green development, and the financial environment. To empirically examine the impact mechanisms of these factors, this research adopted a quantitative methodology featuring a specially designed structured questionnaire survey.

This study conducted a questionnaire survey targeting 187 management personnel and credit specialists of CMB Beijing Haidian Branch. As key implementers of CMB's green finance strategy, these participants serve dual roles as both policy executors and market innovators, whose professional competence and practical experience directly determine the effectiveness of green credit policy implementation.

1.5 Significance of the Study

1.5.1 Theoretical Significance

This study provides theoretical support for constructing a green finance theoretical framework by analyzing the influencing factors of commercial banks' green credit implementation. Although China's green credit has developed rapidly, it remains at an immature stage with various institutional mechanisms still needing improvement, and several problems have emerged during its development process. For example, incentive and constraint mechanisms such as green credit policy subsidies and penalties for non-implementation remain incomplete and require further adjustment and supplementation. As the main practitioners of green credit business, commercial banks significantly influence green credit development. Green credit requires banks to provide funds for environmentally friendly projects at relatively favorable loan interest rates, which inevitably sacrifices some of their profits. However, as a special type of enterprise, banks primarily aim for profit maximization. When conflicts arise between profitability and social responsibility, behavioral game theory emerges regarding whether banks implement green credit policies. Therefore, this study provides a valuable reference for formulating better green finance policies and improving the management of commercial banks' green credit operations in the future.

1.5.2 Practical Significance

Amidst the flourishing development of green credit business, marketing strategies among different financial institutions exhibit remarkable heterogeneity. Taking China Merchants Bank's Haidian Sub-branch in Beijing as a case study, its distinctive regional advantages and strategic positioning provide unparalleled conditions for formulating differentiated green credit marketing strategies. The sub-branch's ability to leverage these advantages through

implementing specialized green credit marketing approaches to achieve predetermined operational objectives precisely reflects the uniqueness of its strategic positioning.

This study analyzes the factors influencing the bank's green credit practices, aiming to provide both theoretical support and practical guidance for developing more precise and effective enhancement strategies. Furthermore, the research outcomes are expected to offer valuable references for other financial institutions seeking to advance their green credit initiatives.

1.6 Definition of Key Terms

1) Green Credit

A financial instrument whereby commercial banks and other financial institutions, in compliance with national environmental policies and sustainable development requirements, provide differentiated credit measures (such as preferential interest rates and prioritized lending) to fund environmentally compliant green enterprises, green projects, or low-carbon industries, while restricting or denying loans to high-pollution and energy-intensive projects.

2) Government Policy Orientation

It refers to a series of top-level designs and institutional arrangements formulated by national authorities and regulatory bodies to achieve green development goals. These policies guide financial institutions' resource allocation through a combination of regulatory constraints and market-based incentives.

3) Bank Management Mechanism

It refers to a systematic and standardized set of operational methods and control processes established by commercial banks within their defined governance framework to achieve business objectives. Its core function is to ensure efficient banking operations and effective risk management through the integration of institutional design, process optimization, and technological applications.

4) Corporate Green Development

It refers to a business growth model wherein enterprises integrate ecological and environmental protection into their core development strategy through technological innovation, management optimization, and strategic transformation during production and operations.

5) Financial Environment

It refers to the aggregate of external conditions and institutional frameworks that influence

financing activities and financial resource allocation across economic entities.

Chapter 2 Literature Review

2.1 Theoretical Foundation

2.1.1 Sustainable Development Theory

The concept of sustainable development first appeared at the 1975 United Nations Symposium on Human Environment, forming a branch of environmental economics theory (Shi & Shi, 2022). Environmental economics is an interdisciplinary field combining environmental science and economics, studying the interconnections between global economic development and environmental issues. By analyzing the contradictions between economic growth and environmental protection, it seeks to identify more rational and effective approaches to create cleaner and more comfortable living environments for humanity. Sustainable development represents humanity's reflection on industrial civilization, a conscious choice made to address the environmental, economic and social problems arising from industrialization, particularly global environmental pollution and ecological degradation (Shu & Yang, 2015).

With the deepening research on sustainable development theory, economists have recognized that merely requiring producers to provide economic compensation for environmental damage caused by economic activities fails to address the fundamental nature of human-induced environmental problems. Consequently, scholars have proposed integrating ecological considerations into economic development, emphasizing that socioeconomic progress must both meet basic human needs and remain within environmental carrying capacity. When economic development exceeds environmental limits, it compromises the regenerative capacity of natural resources and diminishes the environment's self-purification ability, leading to severe ecological degradation that ultimately undermines sustainable socioeconomic development. Therefore, the development process must actively maintain the environment's productive, restorative and self-cleaning capacities while ensuring rational utilization of natural resources to foster truly sustainable economic growth (Shu & Yi, 2022).

Commercial banks operate under substantial policy constraints when implementing green credit initiatives. The fundamental objective of these policies is to reshape corporate financing and production behaviors through specialized financial instruments, particularly by offering preferential loan rates for environmentally beneficial projects while imposing restrictive financing terms for polluting activities (Wang et al., 2012).

When dealing with enterprises that generate positive environmental externalities, such as energy conservation and environmental protection companies, commercial banks provide

development support through concessional interest rates. In contrast, for industries producing negative environmental externalities, particularly those categorized as high pollution, high energy consumption and overcapacity sectors, financial institutions implement strict credit evaluations accompanied by higher interest rates and reduced credit limits (Shu & Yang, 2015). This strategic financial approach serves to encourage these industries to progressively transition toward more environmentally sustainable business models.

2.1.2 Commercial Bank Efficiency Theory

"Profitability, liquidity, and security" constitute the three fundamental principles that commercial banks must adhere to. Among these, profitability serves as the core principle, requiring banks to maximize returns while minimizing costs (Shi, 2016). Liquidity refers to a bank's ability to maintain sufficient solvency to meet customer withdrawal demands. Security entails the effective management of operational risks to safeguard the bank's assets, liabilities, and credit standing against potential threats. Generally, commercial banks should pursue profitability optimization while maintaining appropriate levels of liquidity and security (Wang et al., 2012). Only by achieving among these three principles can banks enhance their operational efficiency, thereby improving their credit allocation effectiveness.

Currently, China's economic development has entered a new normal phase marked by accelerated interest rate liberalization and financial supply-side reforms, with green and low-carbon economic development becoming the mainstream trend. This complex and evolving market environment presents new challenges for banks in balancing the three fundamental principles of banking. Green credit has emerged as a vital tool for commercial banks to achieve the dialectical unity of these three principles under the new economic conditions. By engaging in green credit business, commercial banks can effectively mitigate environmental risks stemming from increasingly stringent environmental policies, thereby enhancing their security position (Weng et al., 2019).

With strong national support for green finance, the rapid development of green projects and industries is gradually expanding the profit potential of green credit operations, which in turn strengthens banks' profitability. From a long-term perspective, green credit helps reduce commercial banks' liquidity risks while improving their risk management capabilities, simultaneously meeting their liquidity requirements (Zhang & Lian, 2019). Therefore, green credit enables commercial banks to achieve dialectical unity among the three principles, improves overall banking efficiency, and consequently enhances credit allocation efficiency. This comprehensive approach allows banks to better adapt to the demands of sustainable economic development while maintaining sound financial operations.

2.2 Green Credit

Green credit is a concept unique to China, and its corresponding English term was translated by Chinese scholars but has not been widely adopted internationally. Foreign scholars primarily define similar concepts under the frameworks of the green economy, corporate social responsibility of financial institutions, and sustainable ecological economic development.

While there is no direct equivalent to "green credit" abroad, the Equator Principles closely align with its meaning. International scholars often examine the impact of the Equator Principles on commercial banks, the influence of green finance on banking development, and the social responsibilities of financial institutions in balancing economic growth with environmental protection (Zhao, 2022). For instance, Zhang and Lian (2019) explored how companies may sacrifice some profits to fulfill environmental and social responsibilities, aiming to enhance their reputation with governments and investors while reducing pollution caused by their operations.

Deng (2007) was the first to formally propose the concept of green credit, which refers to commercial banks providing loan services to green enterprises, green industries, or green projects. Projects or enterprises receiving green credit must meet specific eligibility criteria for approval. Shi (2016) discussed green credit from the perspective of commercial banks' corporate social responsibility (CSR). As specialized financial institutions, commercial banks support national energy conservation and emission reduction strategies by efficiently allocating social capital, thereby facilitating the transition toward a green economy and sustainable development.

The former State Environmental Protection Administration (SEPA) elaborated on green credit in the Opinions on Implementing Environmental Protection Policies and Regulations to Prevent Credit Risks, defining it as a series of policies, institutional arrangements, and practices through which financial institutions utilize credit measures to promote energy conservation and emissions reduction (Liang & Li, 2023). On one hand, green credit involves assessing whether financial policies may negatively impact the environment, harm ecological sustainability, or contribute to pollution. This approach integrates environmental awareness into finance, fostering sustainable financial development and establishing a robust green credit system. On the other hand, it relies on financial institutions' credit mechanisms to shift corporate investment mindsets, providing sufficient funding for environmentally friendly projects, facilitating energy-saving upgrades in traditional industries, and supporting the growth of new green and eco-friendly industries.

In summary, this study defines green credit as a financial instrument whereby commercial banks and other financial institutions, in compliance with national environmental policies and sustainable development requirements, provide differentiated credit measures (such as preferential interest rates and prioritized lending) to fund environmentally compliant green enterprises, green projects, or low-carbon industries, while restricting or denying loans to high-pollution and energy-intensive projects.

In essence, green credit functions as a preferential loan interest rate policy for green enterprises or projects. Commercial banks offer lower interest rates to qualified green projects that meet specific criteria. As the primary implementing vehicle of green credit, commercial banks bear the critical responsibility of connecting governments, enterprises, and society. The implementation of green credit by commercial banks is influenced by multiple factors, including government policy orientation, bank management mechanism, corporate green development, and financial environment (Hu & Tao, 2018).

2.2.1 **G**overnment **P**olicy **O**rientation

Government policy orientation refers to a series of top-level designs and institutional arrangements formulated by national authorities and regulatory bodies to achieve green development goals. These policies guide financial institutions' resource allocation through a combination of regulatory constraints and market-based incentives (Deng, 2021).

Liu et al. (2021) found that government policy orientation serves as a critical factor influencing green credit implementation. Specifically, their study demonstrated that through financial system guidance and subsidy policies for commercial banks' green credit practices, the government establishes a dual mechanism combining incentives and supervision to promote green credit adoption. Similarly, Deng (2021) argued that commercial banks' green credit implementation is significantly correlated with governmental support measures and institutional arrangements, particularly highlighting the direct impact of interest subsidies and loan incentives on banks' green lending behaviors. Liu (2022) conducted a DSGE model-based study to evaluate the effectiveness of green credit incentive policies in China. The research demonstrated that policy instruments such as interest subsidies, relending facilities, and targeted reserve requirement ratio cuts for commercial banks' green credit operations significantly contribute to the expansion of green credit portfolios.

By directing capital toward green initiatives, banks can indirectly drive industrial optimization and upgrading, for instance, facilitating the gradual transition from secondary industries to tertiary sector development. This structural transformation in turn incentivizes businesses to shift toward low-pollution and environmentally

sustainable sectors (Liao, 2022). However, some scholars have also examined constraining factors. For instance, Tan (2021) identified through questionnaire surveys several negative elements hindering banks' green credit operations, including insufficient policy stimulus from the government to effectively drive green credit development.

2.2.2 Bank Management Mechanism

Bank management mechanism refers to a systematic and standardized set of operational methods and control processes established by commercial banks within their defined governance framework to achieve business objectives. Its core function is to ensure efficient banking operations and effective risk management through the integration of institutional design, process optimization, and technological applications (Zhao, 2017). Banks serve as a crucial bridge between governments and enterprises, acting as both implementers of government policies and financial facilitators for corporate development. Zhao (2022) emphasized that while pursuing their own growth, banks must also fulfill social responsibilities, which inherently involves assuming certain operational risks. Improved management mechanisms can effectively mitigate these risks.

From an institutional perspective, Hu & Tao (2018) argued that banks must strengthen internal governance by establishing comprehensive risk assessment systems. This process should begin with rigorous loan approval procedures, conducting thorough enterprise risk evaluations to minimize potential exposures. Throughout the lending cycle, banks should continuously monitor corporate borrowers through information collection, enabling timely risk intervention to prevent escalation. Post-lending supervision through inspection and acceptance procedures is equally critical to ensure capital recovery and prevent non-performing loan formation (Cui & Hu, 2022).

Liu (2015) employed game theory to analyze the determinants of commercial banks' green credit practices, with results indicating that enhancing profitability and reducing operational costs significantly promote green credit adoption among banks. In a related global study, Peng (2023) examined multiple international banks and found that elevating financing thresholds effectively stimulates the growth of environmentally friendly enterprises while constraining high-pollution and overcapacity industries. However, the research also revealed that commercial banks tend to exhibit risk-averse behavior during the initial phases of green credit implementation.

2.2.3 Corporate Green Development

Enterprises serve as the primary drivers of societal development. Their growth and expansion are vital to both public welfare and economic progress. However, if businesses pursue solely financial gains with profit maximization as their singular objective, while neglecting environmental pollution, they risk engaging in short-sighted profiteering that may lead to ecological damage. Such practices ultimately undermine enterprises' own capacity for sustainable and stable development. Corporate green development refers to a business growth model wherein enterprises integrate ecological and environmental protection into their core development strategy through technological innovation, management optimization, and strategic transformation during production and operations (Ren & Zhang, 2018). This approach achieves synergistic enhancement of both economic and environmental benefits.

Recent scholarly research has systematically examined the interplay between green credit policies and industrial transformation in China. Liu (2015) conducted an empirical study revealing that commercial banks' green credit implementation significantly influences industrial restructuring through corporate financing channels, with notable regional variations in its effects. Parallel research by Xiong (2024) demonstrated the constraining effect of environmental regulations on polluting enterprises, while emphasizing the growing importance of corporate environmental responsibility.

Further analysis by Zhao (2017) of bank-government regulatory dynamics identified reputation mechanisms as critical factors inhibiting high-pollution industries and facilitating green credit expansion. Sectoral evidence from Liu (2015) shows concurrent trends of primary sector contraction, secondary sector technological upgrading, and tertiary sector expansion correlating with green credit growth. This transition framework was expanded through a tripartite model illustrating how enterprise-government-finance coordination enables cross-sector green transformation (Zuo et al., 2017).

The 19th Party Congress report explicitly positioned enterprises as key actors in green technology innovation, requiring substantial financial support. This aligns with Tan's (2021) equilibrium model findings that green credit effectively curbs investments in non-compliant enterprises. Complementarily, Liao (2022) established technological innovation as a fundamental driver of financial system evolution, creating a virtuous cycle where corporate green innovation and green credit development mutually reinforce each other.

2.2.4 **F**inancial **E**nvironment

Financial environment refers to the aggregate of external conditions and institutional frameworks that influence financing activities and financial resource allocation across economic entities. Constructing a harmonious financial environment constitutes a critical

measure for enhancing macroeconomic financial regulation, safeguarding financial stability and social development, and fostering sustainable economic growth under new circumstances (Guang et al., 2017).

Ma (2019) posited that green finance development enhances environmental awareness and prevents the unilateral pursuit of economic gains at the expense of ecological resources. Their research demonstrated that green finance facilitates synergistic development between economic and social environments, emphasizing that economic growth must incorporate environmental protection (Wang, 2021). Given China's nascent stage of green finance development amidst economic transition challenges, the study stressed the imperative to establish a comprehensive green financial system with tailored solutions, including calibrated incentive-penalty mechanisms aligned with macroeconomic foundations and policy frameworks.

Empirically, Ma & Chen (2015) employed difference-in-differences methodology to validate the substantive impact of banks' green credit operations on corporate financing patterns. Complementing this, Qian (2016) theorized that robust green financial ecosystems accelerate economic transformation through: (a) strengthened environmental consciousness, (b) technological advancement, (c) optimized governance structures, (d) cost-risk reduction, and (e) strategic reallocation of capital toward green projects, collectively driving high-quality economic growth while improving financial sector externalities.

2.3 China Merchants Bank

China Merchants Bank (CMB) was established in 1987 in Shekou, Shenzhen. As one of China's leading commercial banks, it currently maintains an extensive domestic network comprising 143 branches and 1,756 sub-branches serving over 130 cities across the country. Internationally, CMB has expanded its presence with 6 overseas branches and 2 representative offices. The bank holds a comprehensive portfolio of financial licenses that enable operations in commercial banking, financial leasing, fund management, life insurance, and overseas investment banking services.

As of the end of 2023, CMB achieved notable progress in its green finance initiatives, with green deposits recording a transaction volume of RMB 917 million and an outstanding balance of RMB 420 million. Meanwhile, the bank's green loan portfolio reached an outstanding balance of RMB 447.765 billion, marking a 26.00% increase compared to the previous year-end; In the realm of ESG bonds, CMB has pioneered the world's first blue floating-rate bond issuance in overseas markets; In green wealth

management, CMB has been actively distributing ESG-themed wealth management products and developing ESG-concept financial products; Regarding green investments, the bank consistently implements ESG investment principles through its subsidiaries. CMB Wealth Management prioritizes investments in green financial instruments including green financial bonds, corporate green bonds, green debt financing tools, and green asset-backed securities. By the end of 2023, its green bond investment balance reached RMB 29.286 billion. Meanwhile, CMB Fund maintained 10 ESG-related products with an aggregate scale of RMB 9.321 billion. Additionally, CMB International has been actively promoting green industry transformation and sustainable development, having invested in 8 green finance projects totaling RMB 735 million during the reporting period (Ye, 2023).

CMB Beijing Haidian Branch serves as a key operational unit in the capital's technology hub, leveraging Haidian District's dense concentration of universities, research institutes, and high-tech enterprises to specialize in sci-tech financial services. Anchored in the Zhongguancun National Innovation Demonstration Zone, the branch provides comprehensive financial solutions including investment financing, supply chain finance, and cross-border settlement for regional technology innovators. Through its dedicated technology finance team and digital service platforms, it supports the full lifecycle development needs of enterprises from startup to maturity, positioning itself as CMB's strategic financial gateway for Beijing's International Science and Technology Innovation Center development.

2.4 Conceptual Framework

The conceptual framework is shown in Figure 2.1.

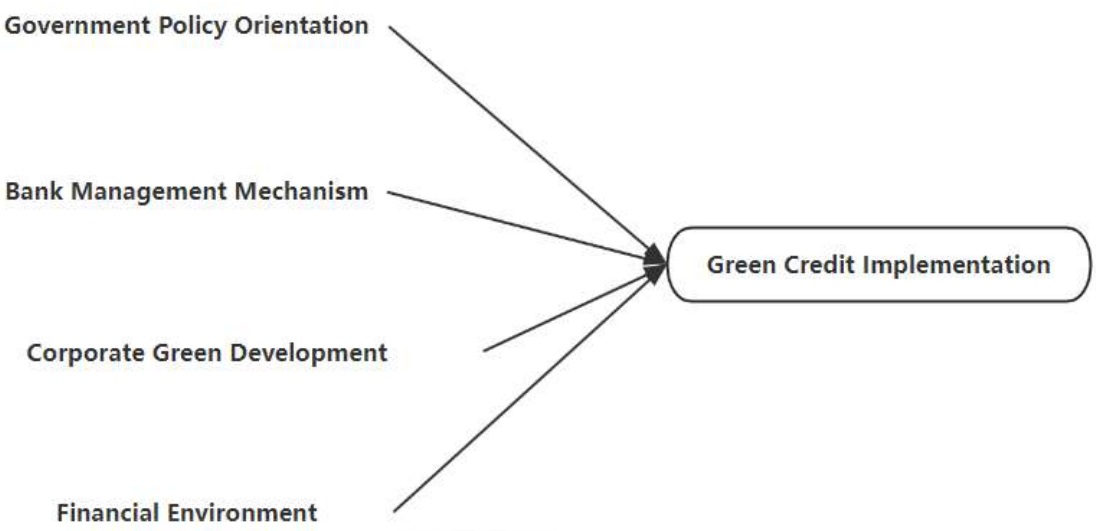

Figure 2.1 Conceptual Framework

Chapter 3 Research Methodology

3.1 Research Design

Based on the theoretical framework established in Chapter 2 and a systematic analysis of the current development status of green credit, this study identified four key dimensions influencing the implementation of green credit by commercial banks: government policy orientation, bank management mechanisms, corporate green development, and the financial environment. To empirically examine the impact mechanisms of these factors, this study adopted a quantitative methodology featuring a specially designed structured questionnaire survey.

The collected data were analyzed using both correlation analysis and multiple regression analysis to validate the determinants influencing China Merchants Bank's green credit implementation.

3.2 Population and Sample

This study conducted questionnaire survey targeting 187 management personnel and credit specialists of CMB Beijing Haidian Branch. As key implementers of CMB's green finance strategy, these participants serve dual roles as both policy executors and market innovators, whose professional competence and practical experience directly determine the effectiveness of green credit policy implementation.

Against the backdrop of China's deepening "dual carbon" strategy, respondents' understanding and operational capabilities in green credit policies not only influence the quality of the bank's environmental risk management but also hold strategic significance in fostering the integration of technology, finance, and industry. The sample covered critical positions including the green finance division management team, corporate banking credit approval committee members, heads of technology-focused sub-branches, and frontline account managers. The composition ensured representation across job functions, seniority, and business specialties, providing comprehensive insights into green credit practices.

3.3 Hypothesis

H1: Government policy orientation has a significant impact on green credit

implementation of China Merchants Bank.

H2: Bank management mechanism has a significant impact on green credit implementation of China Merchants Bank.

H3: Corporate green development has a significant impact on green credit implementation of China Merchants Bank.

H4: Financial environment has a significant impact on green credit implementation of China Merchants Bank.

3.4 Research Instrument

Through a comprehensive review of academic literature and theoretical frameworks, combined with an in-depth analysis of China Merchants Bank's operational context, this study developed a specialized survey instrument to evaluate green credit implementation practices. The questionnaire consists of two integrated components: the first section collects essential demographic information including gender, age, educational background, and work experience, while the second section incorporates a multidimensional assessment scale examining five critical dimensions - government policy orientation, bank management mechanism, corporate green development, financial environment, and green credit implementation.

The measurement instrument employs a five-point Likert scale, with response options ranging from "strongly disagree" (scored as 1) to "strongly agree" (scored as 5), including intermediate options of "disagree", "not sure", and "agree". This graduated scaling system enables precise quantification of respondents' perceptions across all measured constructs. The scale design specifically addresses the unique characteristics of commercial banks' green credit operations while maintaining robust psychometric properties for reliable data collection and analysis.

3.4.1 Government Policy Orientation Scale

Regarding the measurement scale of government policy orientation, several representative research outcomes have emerged in academia. The evaluation scale developed by Zheng (2023) consists of five measurement items, though its limitation lies in the failure to distinguish between the two critical dimensions of policy coerciveness and incentivization. Guang et al. (2017) proposed a scale focusing on three core elements: policy clarity, enforcement bindingness, and fiscal support intensity. The strength of this scale is its emphasis on the operationalizability of policy instruments. Building upon the policy implementation theory, Xiong (2024) innovatively

constructed a three-dimensional measurement system encompassing regulatory stringency, incentive effectiveness, and coordination flexibility. This framework was empirically validated for its unique explanatory power in the Chinese policy context. Therefore, the scale of this study comprises seven designed items.

Table 3.1 Government Policy Orientation Scale

Government Policy Orientation Scale	
1	The green credit policies currently issued by the government have clear and well-defined objectives.
2	Fiscal subsidies and tax incentive policies effectively motivate our bank to develop green credit business.
3	The PBC's relending facilities significantly promote our bank's green credit allocation.
4	Environmental information disclosure requirements help reduce information asymmetry risks in green credit.
5	Local governments' green project certification standards are highly consistent with our bank's business criteria.
6	Regulatory environmental risk review requirements have improved our bank's green credit decision-making quality.
7	The green finance reform pilot zone policies provide institutional space for our product innovation.

3.4.2 Bank Management Mechanism Scale

Commercial banks should develop complete systems including risk assessment mechanisms, cost evaluation frameworks, personnel management protocols, professional competency appraisal standards, and information collection procedures while pursuing financial objectives. Nevertheless, certain banks still maintain underdeveloped systems particularly in staff management, operational capability assessment, and cost analysis. A small proportion of commercial institutions have not yet implemented these critical management structures comprehensively.

Regarding the measurement scale of bank management mechanism, Zhao (2011) developed a bank-client interaction management scale from the perspective of credit specialists, building upon previous research. This scale encompasses three key dimensions: process standardization, risk control effectiveness, and service coordination. Given the highly specialized and process-driven nature of bank credit operations, the scale is primarily designed for assessing credit management personnel.

Therefore, the scale of this study comprises six designed items.

Table 3.2 Bank Management Mechanism Scale

Bank Management Mechanism Scale	
8	Our bank has established a comprehensive specialized risk assessment system for green credit.
9	Environmental compliance reviews are strictly implemented in our bank's credit approval process.
10	Executive performance evaluations incorporate explicit green credit indicators.
11	Regular specialized training programs on green finance operations are conducted.
12	The management information system effectively tracks the environmental benefits of green credit.
13	Differential resource allocation is implemented for green credit business operations.

3.4.3 Corporate Green Development Scale

Some enterprises and commercial banks, in pursuit of maximizing profits, neglect environmental pollution issues and disregard social responsibilities, even going so far as to take reckless risks that violate social ethics. Therefore, it is imperative to establish robust regulatory frameworks and accountability mechanism to align financial activities with sustainable development goals (Zhao, 2017). Therefore, the scale of this study comprises four designed items.

Table 3.3 Corporate Green Development Scale

Corporate Green Development Scale	
14	Enterprises participating in green credit have established clear green development strategies and regularly disclose environmental performance reports.
15	Enterprises engaged in green credit maintain strong environmental compliance records, with no major regulatory violations in the past three years.
16	Green credit participants enforce stringent environmental standards in their supply chain management.
17	Companies involved in green credit demonstrate complete and transparent environmental, facilitating banks' risk assessment processes.

3.4.4 Financial Environment Scale

Financial institutions bear the critical responsibility of maintaining financial market integrity, coordinating interdepartmental relations, and overseeing regulatory compliance across relevant sectors. Lax oversight by these institutions could enable certain enterprises and banks to exploit regulatory loopholes, employing improper methods to engage in non-compliant lending activities (Zhao & Liang, 2019). Such practices would disrupt financial and ultimately impede the development of green credit initiatives. Therefore, the scale of this study comprises five designed items.

Table 3.4 Financial Environment Scale

Financial Environment Scale	
18	The current green bond market exhibits sufficient liquidity, facilitating our bank's green asset allocation.
19	The growing activity in the carbon trading market has enhanced the viability of our carbon finance products.
20	The central bank’s green relending tool has effectively reduced our bank’s funding costs for green credit.
21	Accelerated innovation in peer green financial products is driving our bank to optimize green credit services.
22	Green insurance and risk-sharing mechanisms have increased our bank’s risk appetite for green projects.

3.4.5 Green Credit Implementation Scale

By examining the various factors influencing commercial banks' green credit initiatives, we can leverage favorable conditions to enhance implementation while mitigating or eliminating obstacles. Analyzing the outcomes of green credit practices provides both theoretical and practical foundations for governments to address real-world challenges and incentivize commercial banks to actively promote green credit。

Wang et al. (2012) developed a measurement scale for assessing green credit practice effectiveness, which encompasses three key dimensions: environmental risk assessment, credit process integration, and social impact evaluation. In a complementary approach, Liang & Li (2013) constructed a scale focusing on three critical aspects of banking operations: regulatory compliance, strategic alignment, and economic performance. Therefore, the scale of this study comprises six designed items.

Table 3.5 Green Credit Implementation Scale

Green Credit Implementation Scale

23	Our bank strictly implements environmental compliance reviews during pre-loan investigations.
24	The environmental risk assessment system for green credit projects is well-established and operational.
25	Our bank has established a dedicated fast-track approval process for green credit.
26	Green credit business data is integrated into the bank's risk management system in real time.
27	Post-loan management includes community impact assessments for green credit projects.
28	The non-performing loan ratio of our green credit portfolio is significantly lower than that of traditional credit business.

3.5 Reliability and Validity Analysis of the Scale

3.5.1 Questionnaire Reliability Analysis

Table 3.6 Reliability Analysis Results

Scale	N	Cronbach's α
Government policy orientation scale	7	0.738
Bank management mechanism scale	6	0.824
Corporate green development scale	4	0.769
Financial environment scale	5	0.774
Green credit implementation scale	6	0.811

Reliability analysis serves to evaluate the overall consistency of a measurement scale. In social science research, the most widely employed method for reliability estimation is Cronbach's α coefficient. A scale demonstrates satisfactory internal consistency when the α coefficient exceeds 0.7.

The Cronbach's α coefficients for all dimensions exceed 0.7, indicating high internal consistency across each measured construct, thus validating the scale's suitability for subsequent analytical procedures.

3.5.2 Questionnaire Validity Analysis

Table 3.7 Validity Analysis Results

The KMO Values and the Bartlett's Sphericity Test

Number of KMO Sampling Suitability Quantities		0.824
The Sphericity Test of the Bartlett	Approximate chi-square	4231.146
	df	384
	Sig.	0.000

Validity testing evaluates the degree to which survey results correspond with empirical observations, serving as a critical assessment of measurement accuracy. This study examined construct validity using both the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. The established validity thresholds required a KMO value exceeding 0.7 and a Bartlett's test significance level at or below 0.05.

As presented in Table 3.7, the questionnaire demonstrates strong psychometric properties: the KMO statistic of 0.824 significantly surpasses the 0.7 benchmark, while Bartlett's test yields a highly significant p-value of 0.000. These results conclusively confirm the instrument's robust construct validity for subsequent analytical applications.

3.6 Data Collection

To ensure the objectivity and authenticity of this survey while efficiently gathering responses from a large number of employees within a limited timeframe, the study adopted a completely anonymous format, distributing questionnaires via the "Wenjuanxing" online survey platform. The questionnaire explicitly stated the principles of anonymous data collection and confidentiality to encourage participants to provide genuine feedback.

A total of 187 responses were collected. After excluding unreliable submissions, 180 valid questionnaires remained, yielding an effective response rate of 96.3%. The eliminated responses primarily fell into three categories:

1) Questionnaires with uniform answers across all items;

2) Questionnaires where over two-thirds of responses selected the "Uncertain" option;

3) Submissions with abnormally short completion times.

3.7 Data Analysis

The survey questionnaire in this study successfully passed reliability and validity tests, with all metrics meeting established standards, demonstrating good measurement stability and construct validity before being formally distributed to 187 participants from China Merchants Bank. Following data collection, the research team conducted in-depth analysis of the 180 valid responses using SPSS, employing both correlation analysis and multiple regression analysis to thoroughly examine the relationships between various influencing factors and the implementation of green credit at China Merchants Bank. These analytical results provide empirical evidence for understanding the key drivers behind the bank's green credit practices.

Chapter 4 Findings

4.1 Demographic Characteristics of Participants

The descriptive statistics of demographic characteristics including gender, age, educational background, and work experience, are analyzed to understand the respondents' fundamental characteristics. The statistical analysis results are presented in Table 4.1.

Table 4.1 Demographic Analysis Results

Items	Category	Number of Participants	Percentage (%)
Gender	Male	125	69.4
	Female	55	30.6
Age	Below 25 years old	27	15.0
	26-35 **years old**	49	27.2
	36-45 **years old**	78	43.3
	Over 46 years old	26	14.5
Educational background	College diploma	14	7.7
	Bachelor degree	58	32.2
	Master degree	74	41.1
	PHD degree	34	18.7
Work experience	1-5 years	34	18.8
	6-10 years	79	43.8
	11-20 years	42	23.3
	Over 21 years	25	14.1

The demographic characteristics of the 180 management personnel and credit specialists surveyed at China Merchants Bank's Beijing Haidian Branch reveal the following distribution patterns:

Regarding gender composition, male employees account for a significantly higher proportion at 69.4% (125 individuals) compared to female employees at 30.6% (55 individuals), reflecting persistent gender disparities in the banking sector, particularly within credit-related functions. Age distribution analysis indicates that the 36-45 age group forms the core workforce segment (78 individuals, 43.3%), followed by the 26-35 cohort (49 individuals, 27.2%), collectively representing over two-thirds of the sample. Younger professionals below 25 (27 individuals, 15.0%) and senior staff above 46 (26 individuals, 14.5%) provide complementary perspectives, establishing a well-structured professional hierarchy.

Educational attainment analysis demonstrates that master's degree holders constitute the largest group (74 individuals, 41.1%), with bachelor's degree (58 individuals, 32.2%) and PhD holders (34 individuals, 18.7%) forming substantial contingents, while associate degree holders represent the smallest segment (14 individuals, 7.7%). This distribution aligns precisely with the talent requirements characteristic of commercial banks, especially technology-finance specialized branches.

Professional experience manifests a prototypical "center-heavy" distribution, where personnel with 6-10 years of expertise dominate at 43.8% (79 individuals). Early-career staff with 1-5 years' experience (34 individuals, 18.8%) and seasoned professionals with 11-20 years' tenure (42 individuals, 23.3%) constitute significant secondary groups, complemented by 25 veteran experts exceeding 21 years' service (14.1%). This experience profile ensures both operational continuity and innovative capacity.

4.2 Correlation Analysis

Table 4.2 Correlation Analysis Results

Item	Government Policy Orientation	Bank Management Mechanism	Corporate Green Development	Financial Environment	Green Credit Implementation
Government Policy Orientation	1				
Bank Management Mechanism	0.449**	1			
Corporate Green Development	0.491**	0.522**	1		
Financial Environment	0.517**	0.472**	0.469**	1	
Green Credit Implementation	0.524**	0.497**	0.531**	0.643**	1

The correlation coefficient between green credit implementation and government policy orientation is 0.524, significant at the 0.01 level. This indicates a statistically significant positive correlation between the development of green credit practices and the strength of government policy support.

The correlation coefficient between green credit implementation and bank management mechanism is 0.497, significant at the 0.01 level. This indicates a statistically significant positive correlation between the development of green credit practices and the strength of bank management mechanism.

The correlation coefficient between green credit implementation and corporate green development is 0.531, significant at the 0.01 level. This indicates a statistically significant positive correlation between the development of green credit practices and the strength of corporate green development.

The correlation coefficient between green credit implementation and financial environment is 0.643, significant at the 0.01 level. This indicates a statistically significant positive correlation between the development of green credit practices and the strength of financial environment.

4.3 Multiple Regression Analysis

Table 4.3 Multiple Regression Analysis Results

	Standardized coefficient Beta	t	p	R^2	Adjusting R^2	F
(Constant)	-	3.217	0.000	0.524	0.536	79.215
Government Policy Orientation	0.664	4.274	0.014			
Bank Management Mechanism	0.341	4.219	0.021			
Corporate Green Development	0.624	3.514	0.005			
Financial Environment	0.433	3.275	0.007			

Table 4.3 presents the multiple regression analysis results, demonstrating that the four variables - government policy orientation, bank management mechanism, corporate green development, and financial environment - collectively explain 53.6% of the variance in green credit implementation (adjusted $R^2 = 0.536$). The overall model significance reaches $p < 0.001$

(F = 79.215), indicating strong explanatory power of the regression model.

The regression analysis reveals the statistically significant impact of all four key factors on green credit implementation:

For government policy orientation, the standardized coefficient β=0.664 (t=4.274, p=0.014) indicates a strong positive influence, confirming hypothesis H1 that government policy orientation significantly promotes green credit implementation.

For bank management mechanism, the standardized coefficient β=0.341 (t=4.219, p=0.021) indicates a strong positive influence, confirming hypothesis H2 that bank management mechanism significantly promotes green credit implementation.

Corporate green development exhibits β=0.624 (t=3.514, p=0.005), verifying hypothesis H3 that corporate green development drives green credit implementation.

Financial environment shows β=0.433 (t=3.275, p=0.007), indicates a strong positive influence, confirming hypothesis H4 that financial environment significantly promotes green credit implementation.

Chapter 5 Conclusion and Recommendation

5.1 Conclusion

5.1.1 Government Policy Orientation Has a Significant Impact on Green Credit Implementation of China Merchants Bank

The data analysis results indicate that government policy orientation exerts a significantly positive impact on the green credit implementation of China Merchants Bank. As a crucial external driver, government policy orientation enhances CMB's green credit performance through three key mechanisms: establishing institutional frameworks, providing financial incentives, and offering strategic guidance. Specifically, regulatory authorities' green project certification standards offer clear criteria for credit decision-making, relending facilities and risk weight concessions reduce operational costs, while compliance requirements strengthen financial institutions' intrinsic motivation to develop green credit.

A well-developed policy system can systematically optimize CMB's green credit processes, simultaneously fostering innovation in green financial products by reducing policy uncertainty and improving funding allocation efficiency for low-carbon projects. The synergistic integration of top-down government design with market mechanisms proves to be an effective pathway for accelerating the green transformation of the banking sector.

5.1.2 Bank Management Mechanism Has a Significant Impact on Green Credit Implementation of China Merchants Bank

The data analysis results indicate that bank management system exerts a significant facilitative effect on the green credit implementation of China Merchants Bank. As a crucial internal driver, management mechanism effectively enhances the operational efficiency of green credit business.

A sound banking management system can systematically standardize CMB's green credit practices by promoting innovation in green financial products and services through professional division of labor, while simultaneously improving financing efficiency for low-carbon projects via standardized procedures. The organic integration of scientific corporate governance with market-oriented operations provides essential institutional safeguards for the sustainable development of commercial banks' green credit business.

5.1.3 Corporate Green Development Has a Significant Impact on Green Credit Implementation of China Merchants Bank

The data analysis results indicate that corporate green development exerts a significant facilitative effect on the implementation of green credit of China Merchants Bank (CMB). Specifically, as enterprises accelerate their green transformation, CMB's green credit business exhibits systematic improvement. This phenomenon primarily stems from the fundamental differences between green enterprises' financing needs and those of traditional firms, which compel banks to innovate their credit management frameworks.

The underlying mechanisms operate through three key dimensions: First, the financing demand structure of green enterprises demonstrates greater diversification, encompassing both fixed-asset loans for equipment upgrading and working capital needs for technology R&D. This structural shift drives banks to establish dedicated green credit product systems. Second, green technology firms typically exhibit asset-light characteristics, with their core value residing predominantly in patent technologies and environmental benefits. Third, the demonstration effect of leading green enterprises provides banks with replicable risk assessment templates, thereby lowering the cognitive barriers to emerging green industries.

5.1.4 **F**inancial **E**nvironment **Has a Significant Impact on Green Credit Implementation of China Merchants Bank**

The data analysis results demonstrate that financial environment has a significantly positive impact on the implementation of green credit of China Merchants Bank. As a critical external factor, the financial environment primarily encompasses the market infrastructure and institutional safeguards that influence the development of green credit.

In recent years, with the continuous improvement of China's green financial system, ongoing optimizations in financial market mechanisms, including fund pricing, risk sharing, and information disclosure, these have created favorable conditions for commercial banks' green credit operations. Specific manifestations include: the expansion of the green bond market has reduced funding costs on the liability side, the development of carbon trading markets has enhanced the liquidity of environmental assets, and the environmental information disclosure systems has mitigated information asymmetry between banks and enterprises.

5.2 Recommendation

5.2.1 Accelerating the Construction of Legal Framework for Green Credit

The establishment of a comprehensive legal framework for green credit serves as a critical prerequisite for its effective implementation. Only through a well-developed legal system that governs the entire green credit process can all economic entities clearly understand their respective responsibilities. When enterprises generate waste and pollution during production operations, causing environmental damage, legal accountability mechanisms with corresponding stringent penalties must be in place. This compels enterprises to prioritize environmental protection and increase their ecological investments. Currently, banks predominantly focus on their own profitability with limited attention to borrowers' environmental compliance. However, with robust legal liability and penalty provisions, financial institutions will naturally adopt green credit practices to mitigate legal risks. Furthermore, regulatory authorities, empowered by legal mandates, will enhance their oversight of environmental compliance. This includes continuous monitoring of corporate environmental performance and banks' green credit implementation. The legal framework thus creates a tripartite accountability mechanism among enterprises, financial institutions, and regulators, ensuring the alignment of economic activities with environmental sustainability goals.

Government authorities must clearly delineate the respective rights, responsibilities, and obligations pertaining to green credit within existing financial, economic, and environmental legislation. This legal clarification will ensure comprehensive coverage of diverse scenarios and challenges in green credit implementation. As the green credit market matures and expands, dedicated legislation should be developed to specifically regulate this field, establishing standardized operational procedures for commercial banks' green credit businesses and mandating rigorous environmental and social risk assessment protocols.

The proposed legal framework should explicitly define the supervisory roles and jurisdictional boundaries of regulatory agencies throughout the green credit process. Such legislative measures will create a solid legal foundation for effective oversight, ensuring green credit effectively supports sustainable industries while maintaining strict compliance standards for commercial banks. The ultimate objective is to construct a robust legal system that systematically governs all aspects of green credit operations, from risk assessment to regulatory enforcement, thereby facilitating the financial sector's transition toward environmentally sustainable practices.

5.2.2 Establishing an Effective Information - Sharing Mechanism

It is imperative to expedite the establishment of an information-sharing platform among commercial banks, environmental protection agencies, and regulatory authorities.

First, environmental protection departments should actively participate in green credit initiatives by proactively providing enterprises' environmental compliance data to assist banks in loan evaluation and conduct ongoing supervision through random inspections of borrowing enterprises. Second, a dedicated green credit database should be created. The People's Bank of China should incorporate specialized environmental information into the corporate credit reporting system, enabling banks to access relevant green credit data during loan appraisal processes and thereby accelerate approval procedures. Third, city commercial banks should regularly disclose green credit statistics. Beyond including green credit implementation outcomes in annual responsibility reports, they should also make timely disclosures of relevant green credit information to facilitate public and media oversight, which will incentivize banks to actively develop green credit operations.

5.2.3 Enhancing the Green Credit Incentive Framework

A well-structured incentive mechanism for green credit can effectively compensate commercial banks for the economic losses resulting from their withdrawal from financing high-pollution and high-energy-consumption enterprises, while simultaneously stimulating the active development of green credit services. Financial institutions may further enhance corporate engagement by offering environmentally compliant enterprises preferential low-interest green credit products.

Governments should implement a comprehensive policy package combining fiscal subsidies and tax incentives to improve the economic returns of banks' green credit operations. This includes providing tax benefits to banks demonstrating strong performance in green lending while imposing fiscal penalties on those continuing to finance restricted "two-high and overcapacity" sectors. Parallel enterprise-focused measures should incorporate tax reductions and financial support for energy conservation and renewable energy projects, thereby amplifying the environmental value proposition for businesses.

This integrated incentive system creates a mutually reinforcing dynamic: by simultaneously addressing the economic calculus of financial institutions and the operational needs of green enterprises, it establishes a self-sustaining ecosystem that accelerates the transition toward sustainable finance. The dual focus on bank-level and enterprise-level incentives ensures comprehensive market transformation while maintaining regulatory compliance.

References

Cui, W., & Hu, Y. (2022). Analysis of commercial banks' green finance credit models: A case study of Industrial Bank. *Wuhan Finance*, (12), 9-12.

Deng, Y. (2021, January 7). Building green credit for corporate energy conservation and emission reduction. *Shanghai Securities News*, p. 2.

Ding, H., Wang, S., & Zhou, H. (2021). Corporate social responsibility, green credit policy and commercial banks' financial performance: Estimation based on green credit information disclosure in China's banking sector. *Finance & Economy*, (7), 10-20.

Guang, L., Xu, Q., & Wang, H. (2017). Research on the development strategy of green credit in China's commercial banks based on the equator principles. *Wuhan Finance*, (10), 54-60.

Hu, J., & Tao, S. (2018). Research on the dilemmas and countermeasures in the practice of green credit in Chinese commercial banks. *Wuhan Finance, 32*(2), 67-72.

Jiang, H., Wang, W., & Wang, L. (2020). The carbon emission reduction effects of green finance development in China: Evidence from green credit and green venture capital. *Finance Forum, 25*(11), 39-48.

Li, C., Bai, W., Wang, Y., et al. (2016). How to effectively implement green credit policy in commercial banks: Research based on evolutionary game theory and DID model. *Southern Finance, 1*(1), 47-54.

Liang, R., & Li, Y. (2023). Green finance supports ecological industry development in Qinghai. *Qinghai Finance, 2*(1), 28-33.

Liao, H. (2022). Research on the impact of green credit on bank efficiency based on data envelopment analysis. *Management & Administration*, (9), 152-158.

Liu, L., Zhao, G., Wu, Y., & Lan, M. (2021). Bibliometric study on the research frontier of green finance in China. *Credit Reference, 39*(11), 87-92.

Liu, X. (2015). Chinese commercial banks should proactively adopt the equator principles. *Southern Finance*, (7), 80-84.

Liu, Z. (2022). Research on the current situation and problems of carbon finance development in Qinghai. *Jiangsu Commercial Forum*, (10), 91-104.

Ma, J. (2016). The development and prospects of green finance in China. *Comparative Economic & Social Systems, 21*(6), 25-32.

Ma, X., & Chen, H. (2015). Risk assessment of green credit. *China Finance*, (10), 23-25.

Mao, Y. (2018). Comparative analysis of green credit development among Chinese banks: Case studies of industrial bank, ICBC, Bank of Communications, and China Merchants Bank. *Finance & Economy*, (20), 113-114.

Peng, W. (2023). An empirical analysis of the impact of green credit on the performance of China's listed commercial banks. *Econ 2025*, 0131.

Qian, L. (2016). The green credit system of China's banking industry. *China Finance*, (22), 70-71.

Ren, K., & Zhang, C. (2018). The heterogeneous impact of green credit on the performance of Chinese commercial banks: Based on panel data analysis of 16 listed commercial banks. *Wuhan Finance*, (5), 18-24.

Shi, B. (2016). Development of green finance in Qinghai. *Qinghai Finance*, (12), 10-12.

Shi, D., & Shi, X. (2022). Green finance and high-quality economic development: Mechanism, characteristics and empirical research. *Statistical Research, 39*(1), 31-48.

Shi, Y., Ren, Y., & Fu, Y. (2022). Deepening green insurance to advance carbon neutrality: Interpretation of "Green Finance Guidelines for Banking and Insurance Industries". *Environmental Economy*, (11), 32-35.

Shu, L., & Yang, L. (2015). Research on the implementation status of green credit in commercial banks. *Friends of Accounting*, (23), 44-50.

Shu, S., & Yi, G. (2022). Establishing a long-term mechanism for green credit to promote its high-efficiency development. *Contemporary Financiers, 21*(3), 122-123.

Tan, M. (2021). Research on green credit products of commercial banks. *Journal of Sustainable Finance & Investment*, *11*(3), 345-360.

Tao, Q. (2016). Discussion on the impact mechanism of green credit on bank performance. *Macroeconomic Management*, (5), 47-50.

Wang, C., Zhao, B., & Lyu, S. (2012). Research on green credit implementation mechanism from the perspective of evolutionary game theory. *Financial Regulation Research, 6*(1), 80-97.

Wang, K. (2019). The development of green credit in China: A case study of Qinghai Bank. *Guangxi Quality Supervision Guide, 4*(7), 95-96.

Wang, S. (2021). Research on influencing factors of green development in ports based on Grey-DEMATEL method. *Maritime Policy & Management*, *48*(5), 678-694.

Wang, X., & Wang, Y. (2021). Green credit policy and green innovation enhancement. *Management World, 37*(6), 173-188.

Weng, Z., Ge, C., Duan, X., et al. (2019). Comparative study of green financial products in China and abroad. China Population, *Resources and Environment, 25*(6), 17-22.

Xiong, X. (2024). Reflections on the transition from traditional finance to green finance. *Ecological Economy*, *33*(11), 60-62.

Ye, Y. (2023). Implementation and management of green credit. *China Finance*, (10), 59-61.

Zhang, L., & Lian, Y. (2019). Green credit, bank heterogeneity and bank financial performance. *Financial Regulation Research*, *86*(2), 43-61.

Zhao, T. (2022). Analysis of commercial banks assisting central enterprises' green industry development under the "dual carbon" background. *ABC Journal*, (3), 41-44.

Zhao, Y. (2017). Theoretical foundations for commercial banks to implement green credit business. *Economic & Trade Practice, 15*(1), 141.

Zheng, C. (2023). Some thoughts on the construction of green credit in China's banking industry. *Zhejiang Finance*, (1), 9-11.

Zuo, Z., Cui, L., & Zhu, Q. (2017). Obstacles to implementing green credit in China. *Finance Forum*, (9), 48-57.

Appendix

Dear Sir/Madam,

Thank you for participating in this academic survey. Your responses will be used solely for research purposes and will remain strictly confidential. This is an anonymous online questionnaire, so please answer all items honestly based on your true perceptions. All collected data will be handled with the utmost confidentiality.

We sincerely appreciate your time and valuable input!

1. Basic information

1) Your gender:	
Male	Female
2) Your age:	
Below 25 years old	26-35 **years old**
36-45 **years old**	Over 46 years old
3) Educational background:	
College diploma	Bachelor Degree
Master Degree	PHD Degree
4) Work experience	
1-5 years	6-10 years
11-20 years	Over 21 years

2. Green Credit Implementation Scale

This questionnaire uses a 5-point Likert scale for all items, where:

1 = Strongly Disagree

2 = Disagree

3 = Not Sure

4 = Agree

5 = Strongly Agree

Please evaluate each statement based on your actual experience and mark "✓" in the position that best reflects your opinion.

Government Policy Orientation Scale		**1**	**2**	**3**	**4**	**5**
1	The green credit policies currently issued by the government have clear and well-defined objectives.					
2	Fiscal subsidies and tax incentive policies effectively					

	motivate our bank to develop green credit business.					
3	The PBC's relending facilities significantly promote our bank's green credit allocation.					
4	Environmental information disclosure requirements help reduce information asymmetry risks in green credit.					
5	Local governments' green project certification standards are highly consistent with our bank's business criteria.					
6	Regulatory environmental risk review requirements have improved our bank's green credit decision-making quality.					
7	The green finance reform pilot zone policies provide institutional space for our product innovation.					
Bank Management Mechanism Scale		**1**	**2**	**3**	**4**	**5**
8	Our bank has established a comprehensive specialized risk assessment system for green credit.					
9	Environmental compliance reviews are strictly implemented in our bank's credit approval process.					
10	Executive performance evaluations incorporate explicit green credit indicators.					
11	Regular specialized training programs on green finance operations are conducted.					
12	The management information system effectively tracks the environmental benefits of green credit.					
13	Differential resource allocation is implemented for green credit business operations.					
Corporate Green Development Scale		**1**	**2**	**3**	**4**	**5**
14	Enterprises participating in green credit have established clear green development strategies and regularly disclose environmental performance reports.					
15	Enterprises engaged in green credit maintain strong environmental compliance records, with no major regulatory violations in the past three years.					
16	Green credit participants enforce stringent environmental standards in their supply chain management.					
17	Companies involved in green credit demonstrate complete and transparent environmental, facilitating					

	banks' risk assessment processes.					
Financial Environment Scale		**1**	**2**	**3**	**4**	**5**
18	The current green bond market exhibits sufficient liquidity, facilitating our bank's green asset allocation.					
19	The growing activity in the carbon trading market has enhanced the viability of our carbon finance products.					
20	The central bank’s green relending tool has effectively reduced our bank’s funding costs for green credit.					
21	Accelerated innovation in peer green financial products is driving our bank to optimize green credit services.					
22	Green insurance and risk-sharing mechanisms have increased our bank’s risk appetite for green projects.					
Green Credit Implementation Scale		**1**	**2**	**3**	**4**	**5**
23	Our bank strictly implements environmental compliance reviews during pre-loan investigations.					
24	The environmental risk assessment system for green credit projects is well-established and operational.					
25	Our bank has established a dedicated fast-track approval process for green credit.					
26	Green credit business data is integrated into the bank's risk management system in real time.					
27	Post-loan management includes community impact assessments for green credit projects.					
28	The non-performing loan ratio of our green credit portfolio is significantly lower than that of traditional credit business.					