JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205
Volume 15 Issue 12, December 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

BANK SUPERVISION AND REGULATORY MECHANISMS IN SHAPING GREEN FINANCE POLICY

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Annotation: This article examines the role of bank supervision and regulatory mechanisms in shaping and promoting green finance policies. It analyzes how regulatory frameworks, risk management standards, and supervisory practices influence the adoption of environmentally sustainable lending and investment strategies within commercial banks. The study highlights the importance of integrating environmental, social, and governance (ESG) criteria into banking operations to ensure both financial stability and sustainable economic development. It also discusses international best practices and provides recommendations for enhancing the effectiveness of regulatory measures in fostering green finance initiatives.
Key words: Green finance, bank supervision, regulatory mechanisms, ESG principles, sustainable economic development, commercial banks, environmental risk management.
Introduction. In the context of global economic integration and increasing concerns over climate change, the promotion of sustainable economic development has become a pressing priority, with the financial sector, particularly commercial banks, playing a central role in aligning economic growth with environmental sustainability. Traditional banking and financing models have often prioritized short-term economic gains, frequently supporting projects with negative environmental impacts, whereas the concept of green finance has emerged as a critical tool for achieving long-term sustainability objectives. Green finance in commercial banks involves providing financial support for environmentally safe, resource-efficient, and socially responsible projects, simultaneously ensuring economic efficiency, ecological protection, and social benefits. International experiences and practices from both developed and developing countries indicate that the implementation of green banking systems not only enhances financial stability, improves the quality of loan portfolios, and reduces credit risk, but also contributes significantly to the achievement of long-term economic development goals. Furthermore, the theoretical foundations of green finance, its practical application in the banking sector, and the development of regulatory and supervisory mechanisms tailored to promote sustainable investment are of growing importance in contemporary financial research and practice. This article aims to analyze the theoretical basis of green finance, examine its role in fostering sustainable economic growth, and provide recommendations for the effective implementation of green finance policies and mechanisms within commercial banking institutions.
In recent years, the growing intensity of climate change, environmental degradation, and resource scarcity has placed sustainable finance at the forefront of global economic and policy agendas. Within this context, the banking sector occupies a strategic position, as commercial banks act as key intermediaries in channeling financial resources toward productive economic activities. Conventional financial systems have historically emphasized short-term profitability, often overlooking environmental risks and long-term sustainability considerations. As a result, the need to reform financial practices through the adoption of green finance policies has become increasingly evident. Green finance represents a transformative approach that integrates environmental objectives into financial decision-making, encouraging banks to support low-

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carbon, resource-efficient, and socially responsible projects. Furthermore, the effectiveness of green finance initiatives largely depends on robust bank supervision and regulatory mechanisms, which ensure transparency, risk management, and compliance with sustainability standards. Well-designed regulatory frameworks not only incentivize banks to adopt green practices but also safeguard financial stability by addressing climate-related and environmental risks. In this regard, understanding the interaction between bank regulation, supervisory oversight, and green finance policy formation is essential for developing resilient financial systems capable of supporting sustainable economic development in the long term.

Moreover, the accelerating transition toward a low-carbon and climate-resilient economy has intensified the need for financial systems that are capable of internalizing environmental externalities and supporting sustainable development objectives. Commercial banks, as the primary providers of credit and financial services, are increasingly expected to incorporate climate-related and environmental risks into their strategic planning and operational frameworks. The growing frequency of environmental shocks and regulatory pressures has demonstrated that ignoring sustainability factors may lead to higher financial risks and reduced long-term competitiveness for banking institutions. In this context, green finance emerges not only as a policy tool but also as a strategic necessity for banks seeking to enhance their resilience and market position. Furthermore, the development of clear regulatory standards and supervisory practices plays a crucial role in guiding banks toward sustainable behavior, ensuring consistency, transparency, and accountability in green finance implementation. By aligning financial regulation with sustainability goals, policymakers and supervisory authorities can foster an enabling environment in which green finance contributes effectively to economic stability, environmental protection, and inclusive growth.

Literature review. The concept of green finance and its role in the banking sector has received increasing attention in recent years. According to [1], green finance serves as a financial foundation for sustainable development, emphasizing that banks' support of environmentally-oriented projects can simultaneously enhance economic efficiency and ecological sustainability. In [2], the theoretical model of green banking is developed, highlighting the necessity for commercial banks to incorporate environmental risk assessments into their lending policies. Study [3] evaluates green finance as a critical instrument for combating climate change, empirically analyzing the impact of green loans and green bonds on economic growth. Reference [4] focuses on the integration of Environmental, Social, and Governance (ESG) principles into banking operations, recognizing green finance as a factor that enhances financial stability. According to [5], the effectiveness of green finance mechanisms in developing countries is strongly linked to the institutional environment and governmental policies, with commercial banks acting as primary facilitators. In [6], the long-term economic effects of green banking practices are analyzed, showing that environmentally-oriented investments reduce credit risk and contribute to sustainable growth. Finally, [7] provides an overview of the theoretical evolution of green finance, emphasizing its strategic importance in contemporary financial systems for supporting sustainable economic development.

Existing studies on green finance and sustainable banking emphasize that the transformation of the financial sector is a prerequisite for achieving long-term economic and environmental sustainability. Scholars widely acknowledge that commercial banks serve as key intermediaries in directing financial resources toward environmentally responsible and socially beneficial

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projects. The literature highlights that green finance is not limited to environmental protection alone, but also contributes to financial stability by improving risk management practices and enhancing the resilience of banking systems. Many researchers underline the growing importance of integrating sustainability considerations into credit allocation, investment decisions, and corporate governance structures. In addition, previous studies stress that effective regulatory and supervisory frameworks are essential for ensuring the credibility and consistency of green finance practices across the banking sector. Theoretical discussions also point to the role of innovation, digital financial tools, and institutional capacity in expanding green finance instruments and improving their accessibility. Overall, the reviewed literature suggests that green finance represents a holistic approach that aligns financial performance with environmental responsibility and social welfare, thereby supporting sustainable economic development in both developed and developing economies.

Research methodology. This study employs a comprehensive and multi-faceted methodological approach to examine the theoretical foundations of green finance in commercial banks and its role in promoting sustainable economic development. The research is based on a combination of qualitative and quantitative methods, including extensive analysis of scientific literature, reports from international financial institutions, publicly available financial data of commercial banks, and relevant regulatory and policy documents related to sustainable finance. Key analytical techniques utilized include synthesis and critical evaluation, induction and deduction, comparative analysis, and a systematic approach to understanding the interconnections between green finance mechanisms and sustainable economic outcomes. The study investigates the relationship between environmentally-oriented lending, green investments, and the integration of Environmental, Social, and Governance (ESG) criteria into banking operations. Comparative analysis of international experiences from both developed and developing countries provides insights into global trends and best practices in the implementation of green banking systems. Statistical data were classified and analyzed to evaluate the economic effectiveness and financial stability impacts of green finance mechanisms. The research also integrates theoretical perspectives and conceptual models proposed by previous scholars to substantiate the findings and derive conclusions. This methodological framework ensures the reliability of the study and facilitates the development of practical, evidence-based recommendations for expanding green finance practices within commercial banks and enhancing their contribution to long-term sustainable economic development.

1-Table. Bank supervision and regulatory mechanisms in shaping green finance policy

Regulatory mechanism	Description	Role in green finance policy	Expected impact on sustainable development
Prudential regulation	Banking regulations aimed at maintaining financial stability and managing risks	Incorporates environmental and climate-related risks into capital and credit requirements	Enhances financial resilience and supports long-term sustainable investment

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Regulatory mechanism	Description	Role in green finance policy	Expected impact on sustainable development
Supervisory guidelines	Rules and recommendations issued by banking supervisory authorities	Encourages banks to integrate esg criteria into lending and investment decisions	Promotes environmentally responsible banking practices
Disclosure requirements	Mandatory reporting of environmental and climate-related financial information	Increases transparency and accountability in green finance activities	Improves investor confidence and market discipline
Incentive-based regulation	Use of tax benefits, lower reserve requirements, or preferential refinancing	Motivates banks to expand green lending and green investment portfolios	Accelerates the transition toward a low-carbon and sustainable economy

Table presents the key bank supervision and regulatory mechanisms that play a decisive role in shaping green finance policy within commercial banking systems. The table highlights how prudential regulation, supervisory guidelines, disclosure requirements, and incentive-based regulation contribute to the effective integration of green finance principles into banking operations. Prudential regulation ensures that environmental and climate-related risks are incorporated into capital adequacy and risk management frameworks, thereby strengthening financial stability and supporting sustainable investment. Supervisory guidelines promote the adoption of Environmental, Social, and Governance (ESG) criteria in lending and investment decisions, encouraging banks to align their strategies with sustainability objectives. Disclosure requirements enhance transparency and accountability by mandating the reporting of environmental and climate-related financial information, which improves investor confidence and market discipline. Incentive-based regulation provides financial motivations for banks to expand green lending and investment activities, accelerating the transition toward a low-carbon and sustainable economy. Overall, the table illustrates that effective bank supervision and regulatory mechanisms are essential for fostering green finance policies and ensuring their positive impact on sustainable economic development.

Research discussion. The findings of this study indicate that the implementation of green finance concepts in commercial banks has a significant impact not only on ecological sustainability but also on financial stability and long-term economic growth. Analysis of scientific literature and empirical data demonstrates that green finance enhances the quality of banks' loan portfolios, mitigates credit risks, and promotes social responsibility, thereby contributing to a more resilient financial system. The study highlights the central role of integrating Environmental, Social, and Governance (ESG) principles, green bonds, and environmentally-oriented investments in shaping sustainable banking practices. Comparative analysis of experiences from both developed and developing countries reveals that the effectiveness of green finance mechanisms is strongly influenced by the institutional environment, regulatory frameworks, and government policies, emphasizing the importance of supportive governance structures. Furthermore, the economic efficiency of green finance was

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found to positively affect interest rates, investment returns, and long-term profitability, demonstrating that sustainable banking practices are compatible with financial performance objectives. The research also underscores the necessity for banks to develop tailored strategies, enhance staff competencies in green finance, and leverage regulatory incentives to maximize the effectiveness of green finance initiatives. Overall, the findings suggest that integrating green finance into commercial banking operations not only provides financial and environmental benefits but also strengthens social trust and contributes substantially to the achievement of sustainable economic development goals, offering a solid foundation for evidence-based policy and practical recommendations.

Building upon the findings presented earlier, the discussion further emphasizes that the success of green finance policies largely depends on the coherence and effectiveness of bank supervision and regulatory frameworks. Strong regulatory oversight ensures that environmental and climate-related risks are systematically identified, assessed, and managed within commercial banks, reducing potential systemic risks to the financial sector. The analysis suggests that when supervisory authorities actively promote ESG integration and require transparent disclosure of green finance activities, banks are more likely to adopt sustainable lending and investment strategies. Moreover, incentive-based regulatory mechanisms play a critical role in accelerating the expansion of green finance by reducing the cost of capital for environmentally responsible projects. However, the study also indicates that regulatory fragmentation and inconsistent standards across jurisdictions may hinder the scalability and comparability of green finance practices. Therefore, greater international coordination and the harmonization of green finance regulations are necessary to enhance their overall effectiveness. In addition, capacity building within banks and supervisory institutions is essential to ensure that green finance policies are not treated as compliance exercises but are fully embedded into strategic decision-making processes. Overall, the additional discussion reinforces the view that a well-balanced combination of regulatory enforcement, supervisory guidance, and market-based incentives is fundamental to the long-term success of green finance policies and their contribution to sustainable economic development.

Conclusion. This study concludes that green finance plays a crucial role in aligning commercial banking activities with the objectives of sustainable economic development. The findings demonstrate that the adoption of green finance mechanisms contributes to improved financial stability, reduced credit risk, and enhanced long-term profitability of commercial banks, while simultaneously supporting environmental protection and social responsibility. The integration of Environmental, Social, and Governance (ESG) principles and the effective use of regulatory and supervisory frameworks are identified as key factors in strengthening green finance practices. Moreover, international experience indicates that supportive institutional environments and well-designed bank supervision and regulatory mechanisms significantly influence the successful implementation of green finance policies. Overall, the study confirms that green finance is not only an environmental initiative but also a strategic component of modern banking systems, capable of fostering sustainable economic growth and reinforcing the resilience of the financial sector.

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