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THE ROLE OF BANK FOREIGN EXCHANGE OPERATIONS IN FINANCING GREEN PROJECTS

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Abstract: The transition to a green economy requires substantial financial resources and efficient financial mechanisms. In this context, commercial banks play a crucial role in mobilizing and allocating funds through foreign exchange operations. This paper examines the role of bank foreign exchange operations in financing green projects, with particular attention to cross-border capital flows, green financial instruments, and currency risk management. Using a conceptual reporting framework for green finance, the study analyses how green debt securities and green listed shares are issued, held, and transferred across sectors. The results highlight the growing importance of foreign exchange operations in ensuring transparency, mitigating currency risks, and supporting sustainable financing under conditions of financial globalization and digitalization.

Keywords: green finance, green economy, foreign exchange operations, commercial banks, sustainable development, currency risk.

1. Introduction

In recent years, the global economy has been undergoing a gradual transition toward sustainable and environmentally responsible development. Green projects aimed at renewable energy, energy efficiency, waste management, and environmental protection require stable and long-term sources of financing. Due to the capital-intensive nature of such projects, domestic financial resources are often insufficient, making access to international financial markets increasingly important.

In this process, commercial banks act as key intermediaries between global financial markets and domestic green initiatives. A significant share of green projects is financed through foreign investment, international credit lines, and development institutions, which necessitates the active use of foreign exchange operations. These operations enable banks to convert, transfer, and manage foreign currency flows, thereby facilitating access to international green finance.

At the same time, green financing through foreign currency instruments exposes both banks and project sponsors to exchange rate volatility. Currency risks can significantly affect the financial sustainability of green projects, especially those with long payback periods. Therefore, the role of foreign exchange operations extends beyond settlement functions and includes currency risk management, hedging, and optimization of international financial flows.

Against this background, the aim of this study is to analyse the role of bank foreign exchange operations in financing green projects and to assess their significance within a structured green finance reporting framework.

2. Literature Review

The relationship between green finance and banking foreign exchange operations has attracted increasing attention in international academic literature. Researchers emphasize that commercial banks play a critical intermediary role in mobilizing international financial resources and channeling them toward environmentally sustainable investments.

Mishkin (2021) highlights that banks' international and foreign exchange operations are essential for facilitating cross-border capital flows and financing large-scale investment projects. According to the author, foreign exchange transactions allow banks to efficiently manage

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international funds, which is particularly relevant for green projects relying on foreign capital. Mishkin also stresses that exchange rate volatility poses a serious threat to long-term investments, making hedging instruments such as forwards, swaps, and options indispensable in project financing.[1]

Another important contribution is provided by the Basel Committee on Banking Supervision (2022), which examines the growing exposure of banks to climate-related financial risks. The Committee emphasizes that cross-border green financing involves combined climate and currency risks, requiring enhanced prudential regulation and transparency. Foreign currency lending and international settlements are identified as key channels through which banks support environmentally oriented projects, especially in emerging economies.

Overall, the literature confirms that foreign exchange operations are a fundamental component of green financing mechanisms. They support international capital mobilization, reduce transaction costs, and help mitigate currency risks, thereby contributing to the financial sustainability of green projects.

3. Methodology

The study employs a conceptual analytical approach based on a green finance reporting framework that distinguishes between issues, holdings, and from-whom-to-whom financial relationships. The first stage of the analysis focuses on identifying green financial instruments, particularly green debt securities and green listed shares. These instruments are classified according to their issuance characteristics and recorded at both nominal and market values.

The second stage examines the holdings of green financial instruments across sectors, with particular emphasis on commercial banks. This stage enables an assessment of how green securities are held, valued, and traded through foreign exchange operations, capturing the dynamics of cross-border capital flows and currency-denominated assets.

The third stage applies the "from-whom-to-whom" approach to trace financial flows between issuers, banks, and final investors. This method allows for a systematic analysis of the intermediary role of banks in channeling foreign currency resources toward green projects.

4. Results and Discussion

The analysis shows that foreign exchange operations play a central role in financing green projects by linking international investors with domestic project developers. Green debt securities and foreign currency loans are key instruments through which banks mobilize international resources for sustainable investments.

Valuation of green instruments at market value and the analysis of net transactions provide a more accurate picture of cross-border financial flows. This is particularly important for assessing currency exposure and the effectiveness of hedging strategies applied by banks. The results indicate that banks increasingly use foreign exchange derivatives to manage exchange rate risks associated with long-term green projects.

The "from-whom-to-whom" dimension further demonstrates that banks serve as critical financial intermediaries, ensuring the efficient allocation of foreign currency resources across sectors. This enhances transparency and supports financial stability by improving the monitoring of international green finance flows.

[1] Mishkin, F. *The Economics of Money, Banking and Financial Markets*. Pearson, 2021.

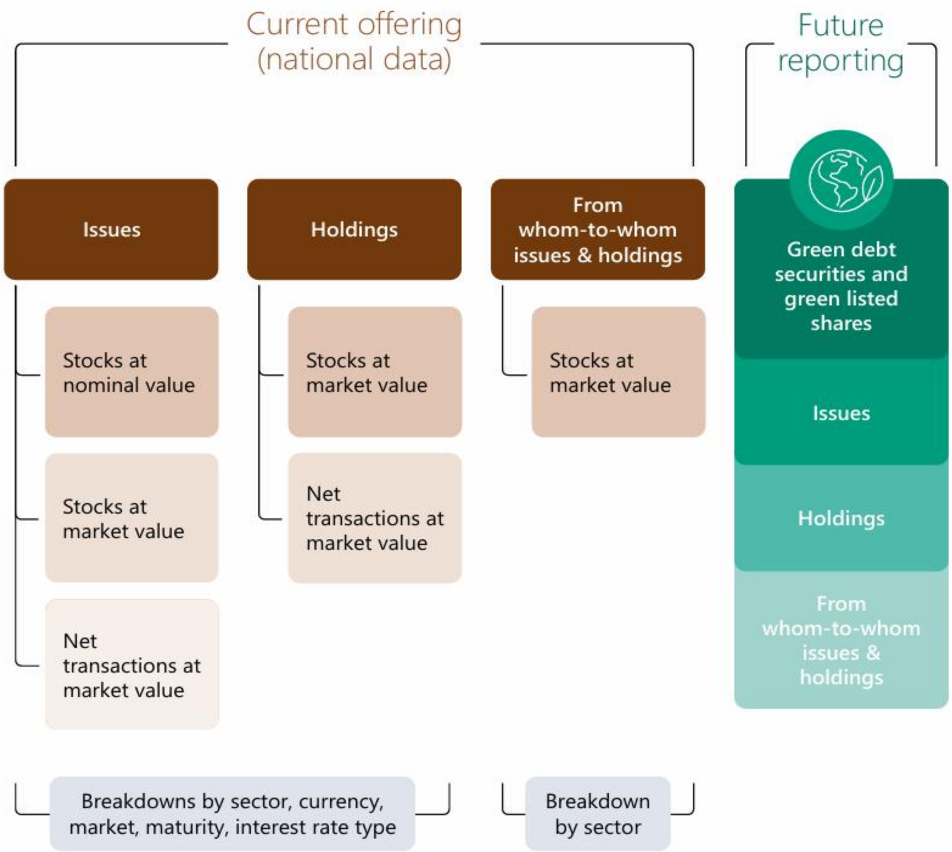

Figure 1. Conceptual framework for reporting green financial instruments[2]

Figure 1 presents a conceptual framework for the reporting and classification of green financial instruments in the context of sustainable finance. The framework distinguishes between current national reporting practices and the prospective future reporting approach focused specifically on green debt securities and green listed shares. It illustrates how green financial instruments are recorded through three key dimensions: issues, holdings, and "from-whom-to-whom" relationships, which together reflect the flow of funds across economic sectors.

The framework emphasizes the valuation of green instruments at both nominal and market values, as well as the recording of net transactions. Such an approach enables a more accurate assessment of cross-border financial flows and the role of commercial banks in facilitating foreign exchange operations related to green project financing. By integrating sectoral and currency-based breakdowns, the framework enhances transparency and supports the analysis of currency risks and international capital mobilization for environmentally sustainable projects.

This study demonstrates that foreign exchange operations of commercial banks play a strategically important role in financing green projects in the context of the global transition toward sustainable development. By facilitating cross-border capital flows, banks enable access to international financial resources that are essential for the implementation of capital-intensive green initiatives. Foreign exchange operations thus function not merely as technical settlement mechanisms, but as a core component of the green finance architecture.

The findings highlight that green debt securities and foreign currency lending are among the key instruments through which banks channel international funds to environmentally oriented projects. The application of market-value-based reporting and net transaction analysis provides a more accurate assessment of cross-border financial flows and currency exposure. In this regard, the increasing use of hedging instruments by banks reflects a growing awareness of currency

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risks associated with long-term green investments and contributes to the financial sustainability of such projects.

Furthermore, the use of the “from-whom-to-whom” reporting framework enhances transparency by clearly identifying the roles of issuers, banks, and investors in the green financing chain. This approach strengthens the monitoring of international green finance flows and supports financial stability by improving the understanding of sectoral and currency-based linkages.

Overall, the results suggest that the effective integration of foreign exchange operations into green finance strategies can significantly enhance the scale, efficiency, and resilience of sustainable financing. Future development in this area requires the continued improvement of regulatory frameworks, wider adoption of digital financial technologies, and deeper international financial cooperation. Strengthening the role of commercial banks in managing foreign exchange operations will be crucial for accelerating the financing of green projects and achieving long-term sustainable development goals.

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