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The green transformation of the banking sector: challenges and opportunities for sustainable finance

Zelena transformacija bankarskog sektora: izazovi i mogućnosti za održivo finansiranje

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Abstract: The green transformation of the banking sector is becoming a pivotal component in the transition toward a sustainable economy. As key intermediaries in the financial system, banks bear increasing responsibility and possess significant potential to direct capital toward projects that support environmental protection, carbon emission reduction, and climate change adaptation. This paper examines the role of the banking sector in the implementation of green finance, with a particular focus on the challenges posed by regulatory requirements, the lack of standardization in ESG criteria, and the limited awareness and capacity within the domestic financial system. Furthermore, the paper highlights the opportunities that the green transition offers in terms of financial product innovation, enhanced competitiveness of banks, and increased resilience to climate-related risks. By analyzing relevant strategies and best practice examples from Serbia and the European Union, the study provides insights into future development pathways and offers recommendations for a more effective integration of sustainability into banking business models.

Keywords: Green finance, Banking sector, Sustainable finance, ESG criteria, Climate risks, Regulatory Framework, Economic transition, Financial institutions, Green economy.

Sažetak: Zelena transformacija bankarskog sektora postaje ključna komponenta u tranziciji ka održivoj ekonomiji. Kao ključni posrednici u finansijskom sistemu, banke snose sve veću odgovornost i poseduju značajan potencijal da usmere kapital ka projektima koji podržavaju zaštitu životne sredine, smanjenje emisije ugljenika i prilagođavanje klimatskim promenama. Ovaj rad ispituje ulogu bankarskog sektora u implementaciji zelenih finansija, s posebnim fokusom na izazove koje predstavljaju regulatorni zahtevi, nedostatak standardizacije ESG kriterijuma i ograničena svest i kapaciteti unutar domaćeg finansijskog sistema. Rad takođe ističe mogućnosti koje zelena tranzicija nudi u smislu inovacija finansijskih proizvoda, poboljšane konkurentnosti banaka i povećane otpornosti na rizike povezane s klimom. Analizirajući relevantne strategije i primere najbolje prakse iz Srbije i Evropske unije, studija pruža uvid u buduće razvojne puteve i nudi preporuke za efikasniju integraciju održivosti u bankarske poslovne modele.

Ključne reči: Zelene finansije, Bankarski sektor, Održive finansije, ESG kriterijumi, Klimatski rizici, Regulatorni okvir, Ekonomska tranzicija, Finansijske institucije, Zelena ekonomija..

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INTRODUCTION

In the context of contemporary global climate change and increasingly prominent environmental challenges, the transformation of economic sectors toward sustainable business models has become imperative. The banking sector, as a key intermediary in capital allocation, holds both the potential and the actual power to significantly influence the direction of economic development - not only through financing, but also by shaping business standards aligned with sustainability principles (Peeters, 2003.). In this context, the concept of green finance is gaining prominence as a mechanism for redirecting investments toward projects that contribute to environmental protection, energy efficiency, and the reduction of greenhouse gas emissions (Fu et al., 2023).

The green transformation of the banking sector involves not only the development of new financial products, but also profound changes in strategic planning, risk management, credit assessment, and reporting in accordance with ESG (Environmental, Social, Governance) principles. However, the implementation of sustainable practices faces numerous challenges, including insufficient regulatory alignment, limited access to relevant data, a shortage of professional capacities, and low awareness of climate and environmental risks within financial institutions - particularly in developing countries such as Serbia (Jokić et al., 2024).

Research indicates that the green transition of Serbia's banking sector remains in its early stages, with a low degree of ESG factor integration in strategic decision-making, which poses an additional challenge for regulators and policymakers (Đuričin et al., 2024). On the other hand, successful examples of green banking across Europe and the region demonstrate that timely institutional and regulatory support can significantly accelerate this process.

The aim of this paper is to analyze the main challenges and opportunities associated with the green transformation of the banking sector, with a particular focus on the role of financial institutions in the transition toward a sustainable economy. Through an overview of domestic and international initiatives, regulations, and best practice examples, the paper provides insight into the current state of green finance development in Serbia and identifies key directions for improving its implementation within banking practice.

1. METHODOLOGY

This paper employs a qualitative-descriptive approach aimed at exploring the level of development and implementation of green finance in the banking sector of Serbia, identifying key challenges, and mapping potential opportunities for further progress toward sustainable financing. This methodological approach is justified by the complexity and multidimensionality of the topic, as well as the fact that the field of green banking in Serbia remains relatively new and insufficiently researched (Toto et al., 2023).

The analysis is based on the following methodological steps:

Review of Relevant Literature: To establish the theoretical framework, the study reviewed scholarly articles, institutional reports, and regulations, including works that address sustainable banking in the domestic context, as well as key international documents that define the standards and objectives of the green transition (UNEP FI; European Commission). Particular attention was given to sources analyzing the implementation of ESG factors and regulatory requirements in the banking sector.

Comparative Analysis: Regulatory and strategic approaches to sustainable finance in the European Union and Serbia were compared. The objective was to identify disparities and gaps in the domestic institutional framework, in line with the findings who emphasize the need for harmonizing domestic practices with European standards.

Secondary Data Analysis: Publicly available reports from commercial banks operating in Serbia and the region were examined, along with data on green bond issuance (Climate Bonds Initiative, 2023) and information from international organizations on investments in sustainable projects in Serbia (EIB, 2023; IFC Press Releases 2022, 2024). These data provided insight into the real scope of existing initiatives and helped identify areas with high development potential.

Case Studies: Selected examples of best practices from the EU and Serbia were analyzed, with special focus on banking initiatives involving the implementation of green credit lines, ESG strategies, or participation in international initiatives such as the Sustainable Banking Network (IFC Press Release, 2020). One such example is Erste Bank, which, with IFC support, implemented specific instruments to support the green transition (IFC, 2024).

This multilayered methodological framework enables a comprehensive examination of the current state of the banking sector in Serbia, while also providing a comparative perspective relative to more developed financial systems. The chosen methodology is aligned with the recommendations of contemporary literature, which emphasizes the need for contextual and interdisciplinary analyses in the field of sustainable finance.

2. LITERATURE REVIEW

In recent years, the green transformation of the banking sector has become an increasingly important topic in both domestic and international academic and professional circles. The central focus is on the role of financial institutions in supporting sustainable development, combating climate change, and transitioning to a low-carbon economy. This process is grounded in the integration of Environmental, Social, and Governance (ESG) factors into strategic decision-making and risk assessment within the banking sector (Kuzmina et al., 2023.).

According to the United Nations Environment Programme Finance Initiative (UNEP FI), green finance encompasses all financial activities that take into account environmental protection, climate change, and sustainability in a broader sense. The European Union has further institutionalized this field through its Action Plan on Sustainable Finance (European Commission), which introduces classification standards for sustainable activities (EU taxonomy) and mandates sustainability reporting for financial institutions and corporations (SFDR regulation).

In the context of the banking sector, numerous authors emphasize the lack of standardized frameworks and metrics for evaluating the sustainability of investments as one of the main challenges. Points out that banks can play a crucial role in environmental protection through their lending policies; however, the application of ESG principles remains fragmented and often superficial. Similarly argue that without regulatory pressure and institutional support, banks rarely initiate profound changes in their business models on their own.

In developing countries, including Serbia, the implementation of green finance faces additional obstacles. Research conducted shows that awareness of ESG risks in Serbia’s banking sector is still at an early stage, while the legal framework does not provide sufficient incentives for directing capital toward sustainable projects.

On the other hand, the National Bank of Serbia announced in 2022 the introduction of guidelines for managing environmental risks in banking operations (NBS, 2022, via IFC Press Release, 2022), marking an important, though still under-implemented, step toward alignment with European trends.

Reports from international financial institutions further confirm the significance of banks as key actors in financing the energy transition. For instance, the European Investment Bank (EIB, 2023) reported that €29 million was invested in green projects in Serbia as part of the EU for Green Agenda initiative. Similar efforts are supported by the IFC and the EBRD through partnerships with domestic banks (IFC, 2024), opening up space for stronger integration of Serbia into global green capital flows.

One of the most dynamic instruments of sustainable finance is green bonds. According to the Climate Bonds Initiative (2023), this market has seen significant global growth. However, its application in the Western Balkans remains marginal. Conversely, studies examining the relationship between sustainability and financial performance suggest that the integration of ESG principles can have a positive effect on the competitiveness and reputation of banks.

Finally, examples such as ProCredit Bank, which consistently applies ESG principles and has developed an internal model for sustainable finance, serve as a positive model for other stakeholders in the sector. Such approaches illustrate that the green transition need not be merely a regulatory obligation, but can become a competitive advantage and a source of innovation in banking operations.

3. RESEARCH FINDINGS AND DISCUSSION

The results of the analysis of available literature, regulatory documents, bank reports, and European case studies reveal several key findings that shed light on the current level of development of green finance in Serbia's banking sector, as well as the challenges and opportunities for its further green transformation.

Figure 1 illustrates the green transformation of the banking sector in Serbia. The diagram highlights six key areas influencing this transition: low ESG integration, lack of regulatory pressure, limited green financial products, low client and investor awareness, development opportunities through international funds, and existing pioneering initiatives. Each branch represents critical challenges and potential growth factors that shape the current state and future prospects of sustainable banking in Serbia.

Based on the conducted research and comprehensive analysis of available literature, regulatory documents, bank reports, and European practices, this study identifies the current state and challenges of the green transformation in Serbia’s banking sector. The findings highlight both structural limitations and emerging opportunities for sustainable finance development. The author emphasizes the urgent need for regulatory frameworks, capacity building, and increased awareness to accelerate this transition and align Serbia with global sustainable finance trends.

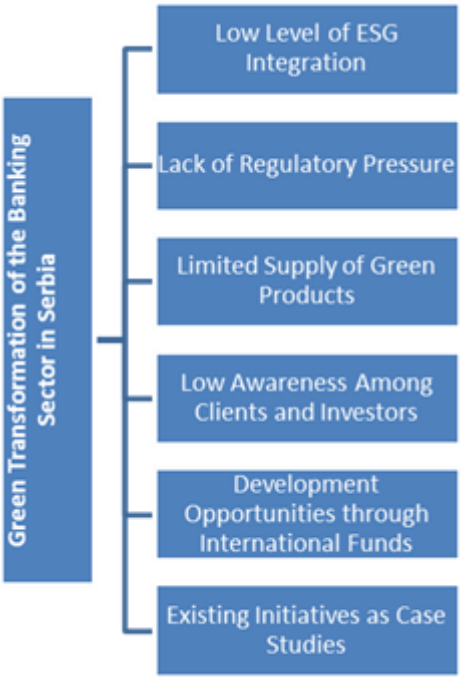

Figura 1. Green Transformation of the Banking Sector in Serbia
Sours: Author on the conducted research

Low Integration of ESG Criteria into Domestic Banking Policies: Although an increasing number of banks in Serbia are formally embracing the principles of sustainable business, the actual integration of ESG criteria into credit policies, risk management, and strategic decision-making remains limited. Analyses show that ESG factors are still predominantly treated as secondary, reputational risks rather than as key determinants of financial stability.

This approach may lead to misjudgment of risks and a loss of competitiveness, particularly given that global investors are increasingly demanding transparency regarding ESG performance.

Lack of Regulatory Pressure and Incentives: Unlike in the EU, where the implementation of regulations such as the SFDR, EU Taxonomy, and CRD/CRR V amendments is mandatory (European Commission, 2018), Serbia's regulatory framework is still not binding for banks in the area of sustainability.

The National Bank of Serbia announced the development of environmental risk management guidelines in 2022, but their full implementation is yet to occur (NBS, 2022). These findings confirm that Serbia's regulatory support is evolving more slowly compared to European practices.

Limited Supply of Green Financial Products: The Serbian market continues to offer a limited range of green financial products, mostly in the form of energy efficiency credit lines supported by international partners such as the EBRD, KfW, and IFC (IFC, 2022; EIB/UNDP, 2023).

Domestic banks rarely develop their own green products, which is attributed to a lack of professional capacity and the absence of market and regulatory incentives. By contrast, banks in the EU are already developing sophisticated ESG-indexed loans, green mortgages, and green bonds that facilitate access to green capital.

Low Awareness Among Clients and Investors: One of the key challenges is the low level of awareness among clients, particularly small and medium-sized enterprises, regarding the importance of green transition and available green financing options.

A similar situation applies to domestic investors, who are still not sufficiently informed about the potential returns and stability of green investments. As emphasized by the Climate Bonds Initiative (2023), market education is a critical component for the development of the green bond market, which remains negligible in Serbia compared to EU markets.

Opportunities for Development: Access to International Funds and Markets: Despite existing challenges, significant opportunities for development have been identified. Domestic banks can take a more active role in international programs (e.g., InvestEU, Green Agenda for the Western Balkans), as demonstrated by recent EIB investments in green projects in Serbia (EIB/UNDP, 2023).

Furthermore, partnerships such as that between the IFC and Erste Bank highlight tangible benefits in terms of technology transfer, strengthening ESG capacities, and improving access to green capital (IFC, 2024).

Case Studies: Early Initiatives in Serbia: Although still relatively rare, there are individual initiatives that may serve as a foundation for broader ESG adoption. For example, Erste Bank and ProCredit Bank have developed internal ESG policies and reporting systems (IFC, 2024). Some commercial banks have also participated in residential energy efficiency financing projects.

Such initiatives demonstrate the potential within Serbia's banking sector, but also point to the need for systematic regulatory and governmental incentives to accelerate the transformation process.

The analysis suggests that the green transformation of the banking sector in Serbia remains in its early stages, characterized by clear structural and regulatory limitations. Nevertheless, international examples and initial steps taken by domestic banks indicate that there is substantial room for accelerated development, provided that regulatory

support, training programs, and access to international green capital are ensured.

The key question is whether Serbia's regulatory bodies and financial institutions will manage to capitalize on the current global momentum in sustainable finance, or whether a lack of timely reforms will result in lost competitiveness and increased exposure to climate and market risks - risks increasingly emphasized in contemporary literature as highly relevant.

CONCLUSION

The green transformation of the banking sector represents an essential step toward establishing a sustainable economy and responding to increasingly pressing climate and environmental challenges. Banks, as key actors within the financial system, hold significant power through their lending policies, investment decisions, and risk management to influence economic development trajectories. The research has shown that in Serbia, this process is still in its early stages, with limited application of ESG criteria, an underdeveloped regulatory framework, and a weak supply of green financial products.

However, there are clear indicators of potential for accelerated progress. Access to international funds, strengthening regulatory pressure, increasing awareness among investors, and the introduction of European standards into domestic practice can all contribute to the development of the green finance market. The green transition is not only a regulatory challenge but also a developmental opportunity for the banking sector to enhance its competitiveness, reputation, and long-term business sustainability.

Based on the analysis and research findings, the following recommendations are proposed to accelerate the green transformation of the banking sector in Serbia: The National Bank of Serbia and relevant ministries should implement binding guidelines for integrating ESG criteria into risk management and reporting, following the example of EU regulations. Training and educational programs for bank employees are necessary to deepen understanding and application of sustainable finance principles. Banks should design specialized products to finance energy efficiency, renewable energy sources, circular economy initiatives, and other green projects. Active participation in projects with EBRD, EIB, IFC, and other donor organizations can improve access to favorable capital sources for green projects. Creating a legislative and market environment that encourages the issuance and trading of green bonds can diversify funding sources for sustainable projects. Banks and regulators should conduct information campaigns and provide technical support to clients - especially SMEs and local governments - about the opportunities and benefits of green finance. Introducing mandatory public reporting on banks' green portfolio shares and ESG performance will contribute to greater transparency and accountability in operations.

If Serbia aims to keep pace with global trends and avoid financial and reputational risks, the green transformation of the banking sector must become a priority rather than a marginal initiative.

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