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STRATEGY FOR THE DEVELOPMENT OF THE FINANCIAL MARKET OF UZBEKISTAN IN THE CONTEXT OF DIGITAL AND GREEN TRANSFORMATION

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Annotatsiya. Ushbu maqolada O'zbekiston moliya bozorini raqamli va yashil transformatsiya sharoitida rivojlantirishning istiqbolli strategiyalari ilmiy jihatdan tahlil qilingan. Tadqiqotda ESG tamoyillari, yashil moliya instrumentlari, barqaror investitsiyalar, fintech innovatsiyalar hamda sun'iy intellekt, blokcheyn va katta ma'lumotlar (Big Data) texnologiyalarining moliya bozori rivojlanishidagi muhim o'rni o'rganilgan. Shuningdek, kapital bozori islohotlari, raqamli moliyaviy infratuzilmani takomillashtirish masalalari hamda ilg'or xalqaro tajriba O'zbekiston amaliyoti bilan qiyosiy tahlil asosida baholangan. Tadqiqot natijalari asosida milliy moliya bozorining raqobatbardoshligi, barqarorligi va investitsion jozibadorligini yanada oshirishga qaratilgan amaliy tavsiyalar ishlab chiqilgan.

Kalit so'zlar: moliya bozori, yashil transformatsiya, raqamlashtirish, ESG, fintech, yashil obligatsiyalar, barqaror moliya, sun'iy intellekt, blokcheyn, O'zbekiston.

Аннотация. В данной статье представлен научный анализ перспективных стратегий развития финансового рынка Узбекистана в условиях цифровой и зелёной трансформации. В исследовании рассмотрены принципы ESG, инструменты зелёного финансирования, устойчивые инвестиции, финтех-инновации, а также значимая роль технологий искусственного интеллекта, блокчейна и больших данных (Big Data) в развитии финансового рынка. Кроме того, на основе сравнительного анализа международного опыта и практики реформирования финансового сектора Узбекистана оценены процессы модернизации рынка капитала и совершенствования цифровой финансовой инфраструктуры. По результатам исследования разработаны практические рекомендации, направленные на дальнейшее повышение конкурентоспособности, устойчивости и инвестиционной привлекательности национального финансового рынка.

Ключевые слова: финансовый рынок, зелёная трансформация, цифровизация, ESG, финтех, зелёные облигации, устойчивые финансы, искусственный интеллект, блокчейн, Узбекистан.

Abstract. This article presents a scientific analysis of promising strategies for developing Uzbekistan's financial market in the context of digital and green transformation. The study examines the implementation of ESG principles, green finance instruments, sustainable investment mechanisms, fintech innovations, and the significant role of artificial intelligence, blockchain technology, and Big Data analytics in advancing financial market development. Furthermore, the research assesses capital market reforms, the enhancement of digital financial infrastructure, and international best practices through a comparative analysis of Uzbekistan's ongoing financial sector reforms. Based on the findings, the article proposes practical recommendations aimed at further strengthening the competitiveness, sustainability, and investment attractiveness of Uzbekistan's national financial market in line with global economic and sustainable development trends.

Keywords: financial market, green transformation, digitalization, ESG principles, fintech, green bonds, sustainable finance, artificial intelligence, blockchain, Uzbekistan.

INTRODUCTION

The global financial architecture is currently undergoing a profound structural transformation driven by two interconnected megatrends: the rapid digitalization of economic processes and the accelerating transition toward environmentally sustainable development models. These trends are no longer viewed as secondary priorities for financial regulators and market participants; rather, they are actively reshaping the mechanisms of capital allocation, risk management, investment behavior, and institutional governance across both

developed and emerging economies [1]. For transition economies such as Uzbekistan, which has implemented comprehensive economic reforms since 2017, this dual transformation creates not only important strategic challenges but also substantial opportunities for sustainable and inclusive financial development.

In recent years, Uzbekistan's financial market has demonstrated stable growth and increasing diversification. While the national financial system continues to be primarily supported by the banking sector, which accounted for nearly 87% of total financial sector assets in 2023, ongoing reforms are creating favorable conditions for the accelerated development of equity and corporate bond markets [2]. Strategic policy initiatives such as the "Digital Uzbekistan – 2030" program and the "Strategy for Transition to a Green Economy for 2019–2030" clearly demonstrate the country's commitment to integrating digital innovation and environmental sustainability into its long-term economic and financial development agenda [3].

At the same time, the academic literature concerning the interaction between digital transformation, green finance, and financial market development in Central Asia—particularly in the case of Uzbekistan—offers significant opportunities for further research. Previous studies have primarily focused either on digital financial technologies or on green finance mechanisms within developed economies. Therefore, there is considerable scope for expanding scholarly understanding of how transition economies can successfully implement digital and green financial reforms while addressing institutional, infrastructural, and regulatory considerations [4]. This research contributes to the existing literature by providing a comprehensive theoretical and empirical assessment of the strategic directions for developing Uzbekistan's financial market within the framework of digital and green transformation.

The main objectives of this study are as follows:

- (1) to evaluate the current condition and structural characteristics of Uzbekistan's financial market;
- (2) to analyze the influence of modern digital technologies—including fintech, artificial intelligence (AI), blockchain, and Big Data—on financial market development;
- (3) to examine the role of green finance instruments and ESG principles within the national financial system;
- (4) to compare Uzbekistan's reform experience with relevant international practices and models; and
- (5) to formulate evidence-based strategic recommendations aimed at accelerating the modernization, competitiveness, sustainability, and resilience of Uzbekistan's financial market in accordance with global financial and sustainable development trends [5].

LITERATURE REVIEW

The theoretical foundation of this study is based on the intersection of three major areas of academic research: financial market development theory, digital innovation economics, and sustainable finance studies. Although each of these research domains has evolved significantly over the past two decades, their integrated application—particularly within the context of emerging and transition economies—offers substantial opportunities for further scholarly exploration and practical implementation.

The relationship between financial market development and economic growth has been widely discussed since the seminal works of Goldsmith [6] and McKinnon [7], who argued that efficient and deep financial systems contribute significantly to capital accumulation, investment efficiency, and productivity growth. Subsequent studies expanded this perspective by emphasizing the importance of institutional quality, financial regulation, governance systems, and technological capabilities in enhancing the effectiveness of financial markets [8]. Levine's influential review of the finance-growth nexus literature further confirms that financial market depth, including banking sector expansion and securities market capitalization, serves as a strong driver of long-term economic development and structural modernization [9].

Research on digital financial transformation has grown rapidly since the mid-2010s, particularly in response to the expansion of fintech ecosystems and digital banking services. Beck et al. [10] argue that fintech innovations substantially reduce transaction costs, improve financial inclusion, enhance payment system efficiency, and increase access to credit, especially in economies characterized by developing financial infrastructure. Similarly, Buchak et al. [11] examine the application of artificial intelligence technologies in financial services, concluding that AI-based credit scoring and risk assessment systems improve lending efficiency and expand financial opportunities for a broader range of market participants. Furthermore, Catalini and Gans [12] analyze the implications of blockchain technology for financial market infrastructure, highlighting its considerable potential to transform settlement systems, securities issuance, and cross-border transactions through reductions in verification, monitoring, and networking costs.

The literature on green finance originates from environmental economics and the theory of externalities; however, it has gradually developed into an independent interdisciplinary field combining sustainability and financial market analysis. Flammer [13] provides empirical evidence that the issuance of green bonds generates positive market reactions and strengthens investor confidence in firms committed to environmental sustainability.

Ziolo et al. [14] demonstrate that the integration of ESG (Environmental, Social, and Governance) principles into investment decision-making can reduce portfolio risks while maintaining stable long-term returns, thereby enhancing the attractiveness of sustainable investment strategies. In addition, Dikau and Volz [15] emphasize the growing role of central banks and financial regulators in promoting sustainable finance policies, arguing that financial authorities possess both the institutional mandate and policy instruments necessary to align financial systems with climate and sustainability objectives.

Within the context of Central Asia, and Uzbekistan in particular, academic research on financial market transformation continues to expand and provides valuable insights into ongoing reform processes. Tashmatov and Yusupov [16] examine the structural dimensions of financial market development in Uzbekistan, identifying regulatory enhancement, market transparency, and information efficiency as important areas for further progress and financial deepening. Rakhimov [17] analyzes banking sector reforms implemented after the 2017 economic liberalization process and notes that the observed improvements in lending mechanisms and banking efficiency have created a strong foundation for continued financial market diversification. Moreover, Islamov [18] investigates the prospects for green bond market development in Uzbekistan based on comparative experiences from Kazakhstan and Georgia, concluding that the establishment of a national green taxonomy, ESG disclosure standards, and independent verification mechanisms can significantly strengthen the country's ability to attract sustainable investment capital.

Overall, the reviewed literature provides an important conceptual and empirical basis for understanding financial market modernization processes. At the same time, it reveals promising opportunities for further integrating digital transformation and green finance within a unified analytical framework, particularly in transition economies. This article contributes to the existing body of knowledge by examining how digitalization and sustainability agendas can jointly support the strategic development of Uzbekistan's financial market.

RESEARCH METHODOLOGY

This study applies a comprehensive mixed-methodological approach that combines theoretical analysis, quantitative assessment, and comparative institutional analysis to examine the development of Uzbekistan's financial market within the context of digital and green transformation.

The research is based on a systematic review of academic literature, international reports, and policy documents published between 2010 and 2024. The sources include Scopus, Web of Science, IMF, World Bank, EBRD, the Central Bank of Uzbekistan (CBU), and government strategic programs supporting digitalization and green economy reforms [3].

The quantitative analysis evaluates key financial market indicators, including financial sector assets, stock market capitalization, banking credit penetration, digital payment usage, fintech adoption, and green bond issuance. The data were collected from reliable and internationally recognized sources, including the World Bank, IMF Financial Access Survey, CBU annual reports, the Capital Market Development Agency, and the Climate Bonds Initiative database [19].

In addition, a comparative institutional analysis was conducted using the experiences of Kazakhstan, Georgia, Vietnam, the European Union, Singapore, and China. The comparison focuses on digital financial infrastructure, green finance mechanisms, capital market reforms, and regulatory modernization, allowing the identification of successful practices and policy approaches applicable to Uzbekistan's financial sector development [20].

The integration of these methods provides a robust analytical framework for developing practical and evidence-based recommendations aimed at further enhancing the competitiveness, sustainability, efficiency, and long-term resilience of Uzbekistan's financial market.

ANALYSIS AND RESULTS

1. Current State of Uzbekistan's Financial Market: Structural Assessment

Since 2017, Uzbekistan's financial market has undergone substantial reforms aimed at strengthening financial liberalization, enhancing banking sector stability, and modernizing capital market regulations. Key reforms have included exchange rate liberalization, banking sector recapitalization, and the expansion of legal and institutional frameworks supporting investment and securities market development.

These reforms have contributed to the steady development of the national financial system and have created favorable conditions for further market expansion. While the banking sector continues to play a leading role in the financial system, ongoing policy initiatives are supporting the gradual development of stock and bond markets, as well as broader financial market diversification. In addition, efforts to strengthen financial market depth, increase private sector participation, and expand institutional investor activity continue to create new

opportunities for sustainable financial sector growth.

Table 1 presents the main financial market development indicators of Uzbekistan in comparison with selected peer economies. The comparison highlights both the progress achieved and the significant growth potential associated with market capitalization, banking penetration, digital financial infrastructure, and sustainable finance development (Table 1).

Table 1

Financial Market Development Indicators: Uzbekistan and Comparator Economies (2023)¹

Indicator	Uzbekistan	Kazakhstan	Georgia	Vietnam	EU Average
Bank Assets / GDP (%)	72.4	91.3	78.6	183.4	302.1
Stock Market Capitalization / GDP (%)	5.8	22.7	11.2	67.1	87.6
Private Credit / GDP (%)	38.2	56.4	61.8	124.7	97.3
Mobile Banking Penetration (%)	41.3	73.2	68.9	72.4	89.1
Green Bond Issuance (USD million)	0	285	150	420	—
Fintech Companies (number)	48	210	95	160	—

The analysis reveals several important structural characteristics of Uzbekistan's financial market. First, although the banking sector continues to play a leading role in the financial system, this pattern is also observed in many regional transition economies. At the same time, Uzbekistan's stock market capitalization, equivalent to 5.8% of GDP, highlights significant opportunities for the further development of equity market institutions, corporate transparency, and investor participation [2]. In addition, the ongoing modernization of the financial sector creates favorable conditions for the future introduction and expansion of green bond instruments and other sustainable finance mechanisms, following successful regional experiences [13].

At the same time, digital financial services are developing dynamically. Mobile banking penetration reached 41.3%, while the number of fintech companies increased steadily in recent years. Between 2020 and 2023, mobile banking transaction volumes grew by 218%, and the number of electronic payment users reached 23.4 million, covering nearly 65% of the adult population [3]. These indicators demonstrate the strong potential for further digital financial market expansion and broader financial inclusion.

2. Digital Transformation of Financial Services: Technologies and Impact

The digital transformation of Uzbekistan's financial sector is supported by fintech innovation, artificial intelligence (AI), blockchain technologies, Big Data analytics, and the rapid expansion of digital payment systems [10].

Fintech development has accelerated due to progressive regulatory reforms introduced by the Central Bank of Uzbekistan, including the fintech sandbox mechanism established in 2021. This platform enables financial technology companies to test innovative products under a supportive regulatory environment. By 2023, several fintech firms had successfully launched solutions related to digital lending, online payments, and AI-based credit scoring systems [17].

Artificial intelligence technologies are increasingly being utilized in the banking sector for credit analysis, fraud prevention, and customer service enhancement. Major banks such as Asaka Bank and Ipak Yuli Bank have introduced machine learning models that significantly reduce loan approval times and improve the efficiency of risk assessment processes [11].

Blockchain technology also presents substantial opportunities for financial market modernization, particularly in securities settlement systems and digital bond issuance. The adoption of distributed ledger technologies can reduce transaction costs, accelerate settlement processes, and further strengthen transparency and operational efficiency in financial markets [12].

One of the most significant achievements of financial digitalization has been the rapid development of electronic payment infrastructure. Payment systems such as UZCARD and HUMO have considerably expanded cashless transactions across the country. In 2023, the total value of electronic payment transactions exceeded UZS 628 trillion, reflecting remarkable growth compared to 2020 [3]. This expanding digital ecosystem creates new opportunities for financial inclusion, data-driven credit services, and the development of innovative financial products (Table 2).

¹ World Bank Financial Development Index, CBU Annual Report 2023, IMF, Climate Bonds Initiative.

Table 2

Digital Financial Technologies: Adoption Status and Strategic Potential in Uzbekistan²

Technology	Current Status	Key Application Areas	Strategic Potential
Artificial Intelligence	Early Adoption in Banking	Credit Scoring, Fraud Prevention, Robo-Advisory Services	High
Blockchain / DLT	Pilot Implementation Stage	Securities Settlement, KYC Processes, Digital Bond Issuance	High
Big Data Analytics	Expanding in Payment Systems	Credit Risk Assessment, Market Surveillance, Customer Analytics	Very High
Digital Banking	Rapidly Expanding	Retail Banking, SME Lending, Deposit Services	High
E-Payment Systems	Well-Established (UZCARD/HUMO)	Retail Payments, Government Services, E-Commerce	Medium–High
RegTech	Emerging	Regulatory Reporting, AML/CFT Compliance	High

3. Green Finance and ESG Integration: Framework and Instruments

The integration of ESG principles into financial market activities has become an important factor in promoting sustainable economic development. For Uzbekistan, which possesses significant potential for advancing environmental sustainability initiatives, including efficient water resource management, climate adaptation measures, and ecological restoration projects in the Aral Sea region, the development of green finance instruments represents a strategic opportunity for long-term growth and resilience [14].

Uzbekistan's green economy policy is based on the "Strategy for Transition to a Green Economy for 2019–2030," which aims to expand renewable energy capacity, improve energy efficiency, and support the transition toward a low-carbon economy. Achieving these objectives creates substantial opportunities for mobilizing private and institutional investment through green financial instruments [3].

Green bonds are widely recognized as one of the most effective mechanisms for financing environmentally sustainable projects. Uzbekistan is currently creating favorable conditions for the future development of an active green bond market. In this regard, the establishment of a national green taxonomy, the introduction of ESG reporting standards, and the creation of independent verification mechanisms can further strengthen investor confidence and support sustainable finance development [15].

At present, ESG disclosure practices in Uzbekistan continue to evolve. The gradual introduction of ESG reporting requirements for state-owned enterprises, listed companies, and large corporations would further enhance market transparency and strengthen alignment with international sustainability standards [20].

4. Capital Market Reforms and Investment Climate Modernization

The development of an efficient and competitive capital market is essential for Uzbekistan's long-term economic growth and financial sector diversification. The ongoing modernization of the national stock market creates significant opportunities for expanding market capitalization, increasing investor participation, and strengthening capital market institutions [2].

The government's privatization program, which includes public offerings of major state-owned enterprises, has the potential to become a powerful driver of capital market expansion. The continued enhancement of corporate governance practices, financial transparency, and the broader implementation of International Financial Reporting Standards (IFRS) will further strengthen market confidence and investment attractiveness [16].

In addition, the improvement of the investment climate remains an important priority. Recent reforms have strengthened investor protection, simplified investment procedures, and enhanced the overall business environment. Continued efforts to improve regulatory predictability, expand risk-management instruments, and deepen financial market infrastructure can further increase the attractiveness of Uzbekistan for domestic and international investors [20].

The development of institutional investors, particularly pension funds and insurance companies, is also critical for creating stable long-term demand in the securities market. Expanding investment opportunities for these institutions in equities and corporate bonds would support market liquidity, diversification, and long-term capital formation [9].

5. International Benchmarking: Comparative Analysis of Financial Market Development Models

² Author's compilation based on CBU Annual Reports, CMDA data, and literature review.

International experience provides valuable lessons for Uzbekistan's financial market modernization. Singapore's regulatory model demonstrates the benefits of fintech innovation support, regulatory sandboxes, and sustainable finance standards in promoting financial sector competitiveness [20].

China's experience highlights the transformative role of digital payment systems and fintech ecosystems in expanding financial inclusion and accelerating the development of modern financial services [10]. Meanwhile, the European Union's sustainable finance framework, particularly its ESG disclosure regulations and green taxonomy system, offers a comprehensive model for integrating environmental objectives into financial markets [15].

Among regional examples, Kazakhstan's experience is particularly relevant. The establishment of the Astana International Financial Centre (AIFC) contributed significantly to capital market development, green finance expansion, and international investor attraction. This example illustrates how specialized financial institutions and modern regulatory frameworks can effectively support financial market modernization in transition economies [18].

6. Strategic Recommendations for Uzbekistan's Financial Market Development

Based on the research findings, several strategic directions are proposed to further accelerate Uzbekistan's financial market development under digital and green transformation conditions.

First, Uzbekistan could strengthen its national green finance ecosystem through the adoption of a green taxonomy, the development of green bond markets, and the establishment of specialized sustainability-focused institutions.

Second, the country could continue modernizing its digital financial infrastructure by expanding fintech ecosystems, strengthening digital payment systems, introducing open banking mechanisms, and supporting AI-based financial services.

Third, capital market reforms could be further advanced through large-scale privatization initiatives, enhanced corporate governance standards, and broader implementation of IFRS requirements.

Fourth, ESG disclosure standards could be gradually expanded among state-owned enterprises, listed companies, and major private corporations to improve transparency and attract sustainable investment capital.

Fifth, Uzbekistan could further strengthen its fintech innovation ecosystem by expanding regulatory sandbox programs, supporting startup accelerators, and developing legal frameworks for AI, blockchain, and digital financial services.

Finally, deeper international cooperation with global financial institutions and regional partners would support regulatory convergence, strengthen investor confidence, and facilitate greater integration into international financial markets [20].

CONCLUSIONS AND RECOMMENDATIONS

This study demonstrates that Uzbekistan's financial market is entering a dynamic new stage of development under the influence of digital transformation and the transition toward a green economy. Since 2017, substantial progress has been achieved, particularly in banking sector reforms, digital payment infrastructure, and financial sector modernization. At the same time, significant opportunities exist for further advancement in capital market development, fintech innovation, and green finance expansion.

The analysis confirms that sustainable financial market modernization is supported not only by institutional reforms but also by the effective integration of digital technologies, ESG principles, and innovative financial instruments into the national financial system. International experience from Singapore, China, Kazakhstan, and the European Union demonstrates that successful financial market development is strengthened by robust regulatory frameworks, advanced digital infrastructure, sustainable finance standards, and effective institutional governance.

Based on the research findings, six strategic directions were identified, including the development of a green finance ecosystem, modernization of digital financial infrastructure, capital market deepening, ESG integration, fintech ecosystem enhancement, and international regulatory cooperation. The successful implementation of these measures can further strengthen the competitiveness, transparency, resilience, and sustainability of Uzbekistan's financial market while increasing its attractiveness to both domestic and international investors.

Furthermore, the study emphasizes the strategic importance of developing a national green taxonomy, expanding digital financial services, enhancing ESG disclosure standards, and modernizing institutional investment mechanisms. These initiatives can contribute significantly to the long-term development and diversification of the national financial system.

Future research may provide additional insights by evaluating the long-term outcomes of ongoing reforms and examining the practical implementation of green and digital finance instruments within Uzbekistan's continuously evolving financial market environment. Such studies would further support evidence-based

policymaking and sustainable financial sector development.

REFERENCES

1. Carney, M. (2021). *Value(s): Building a Better World for All*. New York: PublicAffairs. 600 p.
2. Capital Market Development Agency of Uzbekistan (CMDA). (2023). *Annual Capital Market Report 2023*. Tashkent: CMDA Publishing. 128 p.
3. President of the Republic of Uzbekistan. (2021). Decree No. PF-6343 "Digital Uzbekistan – 2030" Strategy. Official Gazette of the Republic of Uzbekistan. Tashkent.
4. Volkov, D., & Nurullayev, A. (2022). Financial Sector Development in Central Asian Transition Economies: A Comparative Assessment. *Journal of Comparative Economics*, 50(3), 712–731. <https://doi.org/10.1016/j.jce.2022.01.004>
5. International Monetary Fund (IMF). (2023). Republic of Uzbekistan: Financial System Stability Assessment. IMF Country Report No. 23/147. Washington, D.C.: IMF. 89 p.
6. Goldsmith, R.W. (1969). *Financial Structure and Development*. New Haven: Yale University Press. 561 p.
7. McKinnon, R.I. (1973). *Money and Capital in Economic Development*. Washington, D.C.: Brookings Institution Press. 184 p.
8. Acemoglu, D., & Zilibotti, F. (1997). Was Prometheus Unbound by Chance? Risk, Diversification, and Growth. *Journal of Political Economy*, 105(4), 709–751. <https://doi.org/10.1086/262091>
9. Levine, R. (2005). Finance and Growth: Theory and Evidence. In: *Handbook of Economic Growth* (Vol. 1A, pp. 865–934). Amsterdam: Elsevier.
10. Beck, T., Chen, T., Lin, C., & Song, F.M. (2016). Financial Innovation: The Bright and the Dark Sides. *Journal of Banking & Finance*, 72, 28–51. <https://doi.org/10.1016/j.jbankfin.2016.06.012>
11. Buchak, G., Matvos, G., Piskorski, T., & Seru, A. (2018). Fintech, Regulatory Arbitrage, and the Rise of Shadow Banks. *Journal of Financial Economics*, 130(3), 453–483. <https://doi.org/10.1016/j.jfineco.2018.03.011>
12. Catalini, C., & Gans, J.S. (2020). Some Simple Economics of the Blockchain. *Communications of the ACM*, 63(7), 80–90. <https://doi.org/10.1145/3359552>
13. Flammer, C. (2021). Corporate Green Bonds. *Journal of Financial Economics*, 142(2), 499–516. <https://doi.org/10.1016/j.jfineco.2021.01.010>
14. Ziolo, M., Fidanoski, F., Simeonovski, K., Filipovski, V., & Jovanovska, D. (2017). ESG and Financial Performance: Aggregated Evidence from More than 2,000 Studies. *Journal of Sustainable Finance & Investment*, 7(4), 1–8. <https://doi.org/10.1080/20430795.2017.1402283>
15. Dikau, S., & Volz, U. (2021). Central Bank Mandates, Sustainability Objectives and the Promotion of Green Finance. *Ecological Economics*, 184, Article 107022. <https://doi.org/10.1016/j.ecolecon.2021.107022>
16. Tashmatov, A., & Yusupov, B. (2020). Financial Market Development Challenges in Uzbekistan: An Institutional Analysis. *Iqtisodiyot va innovatsion texnologiyalar*, (3), 45–59.
17. Rakhimov, O. (2022). Banking Sector Reform in Uzbekistan: Progress and Remaining Challenges. *O'zbekiston iqtisodiy tahlili*, 8(2), 12–27.
18. Islamov, B. (2021). Prospects for Green Bond Market Development in Uzbekistan: Lessons from Regional Experience. *Moliya va bank ishi*, (4), 32–48.
19. Climate Bonds Initiative (CBI). (2023). *Sustainable Debt Global State of the Market 2022*. London: Climate Bonds Initiative. 55 p.
20. European Bank for Reconstruction and Development (EBRD). (2023). *Transition Report 2023–24: Transitions Big and Small*. London: EBRD. 190 p.
21. Central Bank of the Republic of Uzbekistan. (2024). *Annual Report 2023*. Available at: <https://cbu.uz/uz/press-center/publications/annual-report/> (Accessed: 15-April-2024).
22. World Bank. (2024). *Global Financial Development Database*. Available at: <https://www.worldbank.org/en/publication/gfdr/data> (Accessed: 10-March-2024).
23. Ministry of Finance of the Republic of Uzbekistan. (2023). *Public Finance Statistics and Green Economy Reports*. Available at: <https://mf.uz/en/statistics> (Accessed: 20-February-2024).
24. United Nations Environment Programme Finance Initiative (UNEP FI). (2023). *Principles for Responsible Banking: Progress Report 2023*. Available at: <https://www.unepfi.org/banking/bankingprinciples/> (Accessed: 05-March-2024).

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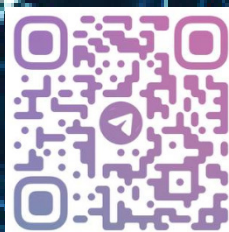
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