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THE DEVELOPMENT OF "GREEN" LENDING IN THE BANKING SYSTEM OF UKRAINE

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The article substantiates theoretical and methodological approaches, as well as the practical aspects, of developing "green" lending in the Ukrainian banking system. The content of "green" finance instruments is examined; a comparative analysis of the main characteristics of "green" lending and lending linked to sustainable development is carried out; and the main principles, advantages and disadvantages of "green" lending are systematised. It has been demonstrated that considering strengths and weaknesses is a key aspect of selecting "green" lending products through which banks enter the market. Based on an analysis of indicators of the state and quality of lending processes within the banking system, trends in changes of volumes, structure and innovations in this segment of the banking market have been outlined. The activities of key players in the "green" lending market – namely, the banks that are most actively implementing environmentally oriented financing instruments and supporting sustainable development projects – are characterised. A set of proposals has been put forward to improve "green" lending in the Ukrainian banking system. Implementing this set of measures will enable banks to increase the availability of "green" loans to a wide range of borrowers, expand their customer base and increase the share of the "green" portfolio within their overall lending portfolios. In a broader context, this will help to strengthen the position of ESG banking in Ukraine and ensure that the banking system contributes to developing an energy-independent, sustainable economy as the country undergoes reconstruction.

Keywords: "green" loan, lending activities, sustainable development, banking system of Ukraine.

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STATEMENT OF THE PROBLEM IN GENERAL AND ITS CONNECTION WITH IMPORTANT SCIENTIFIC OR PRACTICAL TASKS

Amid escalating global environmental challenges and accelerating climate change, "green" lending is taking on strategic importance as a tool for financing sustainable economic development. The transition to a low-carbon economic model requires a significant reorientation of the banking sector away from traditional lending toward financing environmentally responsible projects in renewable energy, energy-efficient construction, organic agriculture, and eco-friendly transportation. Global experience shows that banking institutions that implement the principles of responsible financing and develop specialised "green" lending products gain competitive advantages, strengthen their reputation, and reduce long-term credit risks associated with regulatory and climate factors.

For Ukraine, the development of "green" bank lending is particularly relevant given the country's aspirations for European integration and its obligation to implement EU environmental legislation under the Association Agreement. Under these circumstances, a comprehensive study of the concept, types, and prospects for the development of "green" lending in Ukraine is a scientifically sound and practically significant task, the completion of which will contribute to the formation of an effective mechanism for the "green" transformation of the country's banking system.

"Green" finance is gradually becoming one of the key drivers of the economy's structural transformation. Thanks to "green" finance, it is becoming possible to concentrate capital and direct it toward projects that reduce greenhouse gas emissions, improve energy efficiency in production, promote renewable energy, and strengthen society's resilience to climate change. The banking sector plays a decisive role in promoting "green" finance, functioning as a key financial intermediary that transforms environmental initiatives into concrete investments with real economic impact.

ANALYSIS OF THE LATEST RESEARCH AND PUBLICATIONS

A significant number of publications by domestic and foreign scholars are devoted to the issue of "green" lending, as the impact of climate change can no longer be ignored, and the need for financial leverage of influence is at the forefront of scientific research. Among foreign studies, it is worth noting the

paper by M. Bhatia and A. Tiwari [1], which examines the impact of "green" lending to small and medium-sized enterprises on banks' financial performance (specifically their profitability) and the role of the banking sector in facilitating businesses' transition to environmentally sustainable business models.

The study by J. Li, J.R. Kim and E. Aderbite [2] identifies an increase in "green" lending volumes following the implementation of the Green Credit Guidelines and demonstrates the role of government regulation in incentivising banks. An analysis by M. Bernard, R. De Haas and J. P. Rud [3] of 648 banks in 33 countries assesses the impact of banks' climate risk policies on the financing of enterprises' environmental investments. An analytical study by J. Han, T. Liu and Q. Zhou [4] on the impact of "green" financing on the structure of bank lending assesses the extent to which banks' issuance of "green" bonds leads to a real improvement in the environmental sustainability of their loan portfolios. An important aspect of research on "green" lending is its role in ensuring sustainable development. For example, N. Tomic, M. Jakšić, and P. Stanković [5] examine the role of banks in supporting sustainable development by integrating ESG criteria into banking decisions.

The current state of "green" lending by Ukrainian banks has been examined in the work financing andkova and K. Pavliuk [6], which analyses the mechanisms of "green" financing, the role of the National Bank of Ukraine and commercial banks in the transition to sustainable financing and outlines the prospects for the development of "green" lending products in Ukraine.

M. Zhytar's paper [7] is devoted to sustainable finance in the context of "green" banking in Ukraine; it examines the interconnection between sustainable development and the banking sector, the financial instruments of "green" banking, the regulatory framework for "green" finance, and the challenges of implementing ESG approaches in banking operations.

Based on this research, the paper of Yu. Khudolii and A. Kuilnich [8] substantiated the role of "green" lending in the development of sustainable finance, emphasising the importance of bank loans in financing environmental projects and in adapting international experience with "green" loans and "green" bonds.

Thus, a review of the academic literature indicates that "green" lending and "green" banking are important components of the banking system's transformation toward sustainable development. The analysed studies demonstrate the absence of a unified approach to organising "green" lending; however, most scholars emphasise the need to combine financial instruments, government regulation, and ESG approaches. Close attention is paid to financing environmental and energy-efficient projects and accounting for climate risks in banks' operations. At the same time, international studies confirm the potential positive impact of "green" lending on environmental outcomes and banking operations. Ukrainian researchers emphasise the need to improve the regulatory environment, strengthen the regulator's role, and encourage greater participation by banks in financing "green" projects.

Therefore, the further development of "green" lending requires expanding the range of relevant banking products, refining the criteria for assessing their environmental focus, and determining the impact of "green" lending on banks' financial performance and the sustainable development of the economy.

PURPOSE AND MAIN TASKS OF THE PAPER

The purpose of the article is to conduct a comprehensive study of the theoretical foundations and methodological approaches to organising "green" lending, as well as to identify promising areas for its development in Ukraine's banking system of during wartime and the subsequent economic recovery.

RESULTS AND DISCUSSIONS

Financial institutions can no longer afford the far-reaching consequences of climate change – for their own operations, broader financial practices, and the fulfilment of their social mission. In this context, "green" banking emerges as a promising avenue for integrating sustainability principles into the financial system, with a view to shaping the environmentally oriented economy of the future. "Green" banking is "a systematic approach to banking that accounts for environmental impact at all levels – from internal energy consumption to external financial transaction and investment decisions" [9].

"Green" lending is the key instrument of "green" banking. "Green" loans are a specific form of bank financing designed to support projects that meet environmental standards and contribute to the decarbonisation of the economy. Alternatively, ensure long-term environmental sustainability. The fundamental difference between such loans and the traditional ones lies not only in the intended use of the funds, but also in the principle of responsibility for future generations that underlies them [10].

Typical examples of "green" lending include projects in renewable energy and sustainable construction, as well as initiatives to implement circular economy models. By financing such areas, banking

institutions not only fulfil their social function but also gain access to new, promising market segments that are developing rapidly amid the global environmental transition. However, by no means do all environmentally oriented projects demonstrate high profitability, and the need to factor in environmental risks during credit decision-making may narrow the scope for returns. Thus, "green" banking is not merely a passing trend, but an efficient driver of the financial sector's evolution. For banking institutions, this represents a real opportunity to help solve the pressing environmental challenges of our time, whilst simultaneously creating new growth opportunities and strengthening their competitive positions in a rapidly transforming economy.

The category of "green" economy financial instruments can be viewed both in a narrow sense – "green" bonds, "green" loans, environmentally oriented investment funds, and "green" incentives (Table 1) – and in a broader sense, encompassing online banking, blockchain technology, social bonds, and other related instruments. Whilst acknowledging the existence of various approaches to classifying particular instruments as "green", within the scope of this study and guided by a practical approach, it is proposed that "green" financial instruments be defined as those whose use creates effective incentives for legal entities and individuals to adopt environmentally responsible behaviour and to reorient their production activities towards the principles of sustainable development [11].

Table 1

Key financial instruments in "green" finance

Instruments	Characteristics
"Green" loans	Earmarked bank loans to finance environmentally responsible projects: renewable energy, "green" construction, the circular economy
"Green" bonds	Debt securities, the proceeds from the issuance of which are directed exclusively towards financing environmental projects (energy efficiency, "green" infrastructure)
"Green" deposits	Bank deposits, the funds raised from which the bank undertakes to direct solely towards environmental projects with verified "green" status
"Green" investment funds	Collective investment schemes whose portfolios consist of assets from environmentally focused companies or projects that meet ESG criteria
"Green" insurance	A type of insurance product designed to manage environmental and climate risks, providing cover for renewable energy facilities, energy-efficient buildings and "green" infrastructure, as well as compensation for losses resulting from climate-related disasters and incentivising policyholders to adopt environmentally responsible behaviour through reduced premiums
Securitisation of "green" assets	A mechanism for converting a portfolio of "green" assets ("green" loans, solar panel leasing, etc.) into tradable securities to raise additional capital
"Green" tax incentives	The use of tax incentives for businesses that utilise clean energy sources and invest in renewable energy

Source: grouped based on [11; 12]

To uncover the essence of "green" loans as a key instrument for transforming the economy on a sustainable basis, it is necessary to examine the nature and architecture of the "green" lending mechanism and identify its fundamental differences from traditional forms of bank financing. Despite their conceptual similarities, "green" loans and loans linked to sustainable development are distinct financial instruments with different characteristics. At the same time, in practice, the term "green loan" is often used as an umbrella term for both categories. The key distinguishing feature of a classic "green loan" is the strict earmarking of the funds raised – exclusively for the implementation of projects with a proven environmental impact. To illustrate the key differences between traditional and "green" lending, let us turn to a comparative analysis (Table 2).

Thus, the data presented in Table 2 clearly demonstrate that "green" lending is a fundamentally different form of bank financing, rather than simply a variation on traditional lending products. Unlike conventional lending, where the borrower's financial capacity is the decisive criterion, "green" lending imposes additional environmental requirements on projects, which must meet established sustainability standards. An integral part of the "green" loan mechanism is enhanced monitoring of project implementation and mandatory verification of environmental outcomes, which fundamentally distinguishes it from the traditional model, which focuses exclusively on financial indicators. Consequently, "green" lending fulfils two functions simultaneously – financial and environmental – transforming the banking sector into an active participant in the global transition to a low-carbon economy. A comparative analysis of the key parameters of "green" lending and lending geared towards sustainable development goals, summarised in Table 3, warrants special attention.

Table 2

A comparative analysis of the key characteristics of traditional and "green" lending

Criteria	Traditional lending	"Green" lending
Objective	To finance any economically viable projects without environmental restrictions	To finance projects with a proven positive environmental impact
Project selection criteria	The borrower's financial capacity and creditworthiness	Compliance with environmental standards and the borrower's financial capacity
Monitoring and reporting	Standard financial reporting, monitoring of debt repayment	Mandatory environmental reporting and verification of archived "green" results
Environmental impact	Not a priority; environmental aspects are not assessed	Mandatory demonstration of the project's positive environmental impact
Benefits for the client	Accessibility, flexible terms, and a wide range of financing objectives	Preferential rates, enhanced reputation, and access to international capital
Interest rate	Determined by market conditions and the borrower's credit risk	Generally lower due to government subsidies and international support
Regulatory framework	General banking legislation and the bank's internal regulations	Green Lending Principles (GLP), the EU taxonomy, ESG standards and international framework agreements
Target audience	Individuals and legal entities without a specific environmental obligation	Companies and individuals implementing projects with a verified environmental impact

Source: grouped based on [9; 13]

Table 3

A comparative analysis of the key characteristics of "green" lending and sustainable development lending

Criteria	"Green" lending	Loans linked to sustainable development
Objective	To finance specific, environmentally focused projects	To encourage improvements in the borrower's overall ESG performance
Use of funds	Exclusively for specified "green" purposes (renewable energy, "green" construction, etc.)	No restriction on the use of funds
Restrictions on use	Strict – funds cannot be used for other purposes	None – the company's overall ESG profile is important
Key indicators	The project's environmental impact (emissions reduction, energy efficiency)	The borrower's sustainable development KPIs (ESG rating, social indicators)
Monitoring and reporting	Reporting on the use of funds and the project's environmental outcomes	Reporting on trends in ESG indicators and KPIs performance
Impact on the interest rate	Preferential rate as an incentive for implementing environmental projects	The rate is adjusted depending on whether KPIs are met or not
Regulatory framework	Green Lending Principles (GLP), EU taxonomy	Sustainable Lending Principles (SLP)
Third-party verification	Recommended to confirm the project's "green" status	Mandatory to verify the feasibility and achievement of the set KPIs
Scope of application	Energy, construction, transport, waste management	Any sector where measurable ESG targets can be set

Source: developed by the authors

The fundamental difference between "green" loans and sustainable development loans lies in the approach to the intended use of the funds raised. Whilst "green" loans require the funds to be strictly channelled towards specific environmental objectives, sustainable development loans do not require the funds to be used for a specific purpose. Instead, their defining characteristic is the structure of the lending terms, which creates effective incentives for borrowers to improve their own performance against pre-defined ESG criteria – environmental, social and governance.

As a relatively new financial instrument, "green" lending combines significant potential for economic transformation with substantial constraints that hinder its full development. A comprehensive understanding of the strengths and weaknesses of its mechanism is a prerequisite for formulating a well-considered strategy for its implementation, both at the level of individual financial institutions and across the national economy.

Table 4 sets out the main advantages and disadvantages of "green" lending.

Therefore, despite the existing constraints, the strategic potential of "green" lending far outweighs its current shortcomings. Most of the problems mentioned – the lack of standards, insufficient expertise among market participants, and the risks of greenwashing – are institutional in nature and can be addressed through the development of the regulatory framework, increased transparency and the introduction of standardised verification methodologies.

Table 4

An overview of the main advantages and disadvantages of "green" lending

Advantages	Disadvantages
Environmental impact Helps to address global environmental challenges – reducing greenhouse gas emissions, lowering levels of environmental pollution and adapting to climate change	Lack of uniform standards The lack of standardised criteria for assessing the "green" credentials of projects leads to differing interpretations by market participants and makes comparisons difficult
The development of the "green" economy Promotes the creation of an economic model based on the principles of sustainability, clean technologies and corporate social responsibility	Lack of specialist knowledge Effective "green" lending requires specialist expertise from all stakeholders – banks, borrowers, auditors and regulators
Social impact Improves the quality of life for the population by enhancing the state of the environmental infrastructure	High cost of expert assessment The need to conduct technical and financial project verification significantly increases transaction costs and prolongs application processing times
Enhancing reputation Participation in "green" lending enhances the image of both the borrower and the bank, building trust among investors and the public	The risk of greenwashing Deliberately or unwittingly claiming that projects are environmentally friendly without any real basis undermines confidence in "green" financial instruments as a whole
Access to international capital Compliance with international ESG standards opens access to foreign investment, grants and preferential financing from international financial institutions	A limited pool of borrowers Strict environmental requirements limit the availability of this instrument to small and medium-sized enterprises due to the difficulty of demonstrating compliance
Preferential financing terms Government support programmes and international initiatives provide reduced interest rates for environmentally focused projects	Market underdevelopment In some countries, notably Ukraine, "green" lending has not yet become systemic due to the lack of an adequate regulatory framework
Promoting innovation Funding environmental projects accelerates the adoption of clean technologies and contributes to the technological modernisation of the economy	Long-term payback period Environmental projects often have lengthy implementation periods and delayed economic benefits, which complicates standard credit risk assessment

Source: developed by the authors

Systematising "green" lending according to various classification criteria is a prerequisite for a thorough understanding of its nature and operating mechanisms. "Green" loans constitute a heterogeneous category of financial instruments. They can be classified according to a whole range of criteria, depending on the purpose of the financing, the term, the object of the loan and the target audience of borrowers. Such a multidimensional classification allows for a clearer definition of the specific characteristics of each type and the development of a differentiated approach to their practical application. Based on these criteria, the following main types of "green loans" are identified.

A more detailed overview of "green" lending products for retail, corporate and investment banking is set out in Table 5.

Table 5

Classification of "green" lending products for retail, corporate and investment banking

Loan products	Features
Retail banking	
"Green" mortgage	A preferential mortgage loan for the purchase or construction of housing with a high energy efficiency rating. Offers a reduced interest rate provided the property meets environmental standards
Loan for "green" commercial construction	A loan for sole traders for the construction or renovation of commercial property in accordance with "green" building standards
"Green" car loans	Specialised loans for the purchase of electric cars or hybrid vehicles with reduced emissions. These come with preferential terms and government subsidies
Loans for residential energy efficiency	Financing for the installation of solar panels, heat pumps, thermal insulation systems and other measures to improve the energy efficiency of private homes
"Green" credit cards	Credit cards offering cashback or bonus schemes for environmentally responsible purchases. A portion of the revenue from transactions is channelled towards funding environmental initiatives
Corporate and investment banking	
"Green" corporate loans	Credit facilities for businesses to implement environmental programmes: decarbonisation of production, adoption of the circular economy, and reduction of the carbon footprint
Project financing for "green" infrastructure	Long-term financing for major infrastructure projects in the fields of renewable energy, "green" transport and water management, based on project finance principles
Sustainable development loans	Corporate loans with terms linked to the company's achievement of specific ESG indicators: the interest rate is adjusted depending on the fulfilment of set KPIs

Source: systematized by the authors based on [12; 13; 14]

This classification of lending products across retail, corporate and investment banking demonstrates that "green" lending encompasses a wide range of financial instruments – from small consumer loans for individuals to large-scale project finance for the corporate sector. This diversification of the product range enables banking institutions to meet the needs of different categories of borrowers whilst simultaneously contributing to the achievement of environmental objectives at various levels of the economy.

The principles of "green" lending form the conceptual foundation of the entire system of environmentally responsible financing. The main principles of "green" lending are summarised in Table 6.

Green Loan Principles (GLP), developed by the Loan Market Association (LMA), set standards for "green" loans. They require that the funds be used for their intended purpose, along with a clear assessment of environmental projects, their management, and reporting [15; 16]. Any deviation from the intended use of funds constitutes grounds for revising the terms of the loan agreement or imposing sanctions on the borrower. Thus, this principle serves a dual purpose: on the one hand, it guarantees a genuine environmental impact from the financing; on the other, it protects the bank from reputational risks associated with greenwashing.

Table 6

Key principles of "green" lending

Principle	Brief description
Targeted use of funds	Loan proceeds are directed exclusively towards financing projects with a verified environmental purpose
Transparency and accountability	The borrower is obliged to provide complete and accurate information on the use of funds and the environmental outcomes achieved
Verification of environmental impact	Mandatory verification of the project's actual environmental impact by an independent third party or a certified auditor
Monitoring and reporting	Systematic monitoring of project implementation and regular reporting on environmental and financial outcomes
Compliance with international standards	Compliance with recognised international frameworks – the EU Taxonomy, the Green Lending Principles (GLP)
The "Do No Significant Harm" principle	Funded projects must not have a negative impact on other environmental or social aspects of sustainable development
Inclusivity	Ensuring the availability of "green" lending to different categories of borrowers

Source: systematized by the authors based on [15-20]

The principle of transparency and accountability requires the borrower to provide the bank with complete, accurate, and timely information on the project's progress and the actual use of the loan funds. This includes disclosing information about the structure's cost, the project's technical specifications, the environmental performance achieved, and any deviations from the originally declared parameters. Transparency is not only a requirement of the lending bank but also a condition for maintaining overall confidence in the "green" finance market. Given the growing public demand for responsible investment, failure to adhere to this principle can have serious consequences not only for the borrower but also for the financial institution's reputation.

The principle of environmental impact verification is a logical extension of the principle of transparency. It requires the declared environmental impact of a project to be verified by an independent third party. The role of verifier may be performed by specialized audit firms, accredited environmental organisations, or international ESG rating agencies. Verification is carried out both at the stage of considering the loan application – to confirm the project's environmental compliance – and after its implementation – to assess the results achieved. This principle is a key tool in combating greenwashing, as it precludes claims of environmental benefits without proper verification.

The principle of monitoring and reporting establishes the need for systematic oversight of the project's implementation throughout the entire loan period. Unlike traditional bank lending, where monitoring focuses primarily on the borrower's financial performance, "green" lending requires the parallel tracking of environmental indicators – such as emission reductions, energy-saving levels, water consumption figures, and so on. Regular reporting by the borrower enables the bank to identify deviations from planned parameters promptly and take appropriate action. Furthermore, aggregated monitoring data serves as the basis for the bank's sustainability reporting and information disclosure in accordance with international standards.

The principle of compliance with international standards ensures the integration of "green" lending into the global sustainable finance ecosystem. For Ukrainian banks, adherence to this principle is particularly important in the context of the country's European integration aspirations and the need to raise international financing to implement "green" recovery programmes.

The "Do No Significant Harm" principle stipulates that financed projects must not cause significant adverse impacts on any component of sustainable development. Even if a project demonstrates a positive effect in one environmental category, it must not cause harm to other categories, particularly to biodiversity, water quality, or social justice.

The principle of inclusivity aims to ensure equal access to "green" finance for different categories of borrowers – regardless of their size, sector or geographical location. In practice, implementing this principle involves developing simplified verification procedures for small and medium-sized enterprises, introducing tailored lending products for different target groups, and banks actively raising awareness of the benefits and mechanisms of "green" lending. Inclusivity is a key prerequisite for a large-scale transition to a sustainable economy, as the broad coverage of sectors and strata of society determines the systemic nature of environmental transformation [18; 19; 20].

Consequently, the combination of these principles forms a coherent architecture for "green" lending, ensuring it is fundamentally distinct from traditional financial instruments. Adherence to these principles is an essential prerequisite for "green" lending to fulfil its primary function – providing genuine financial support for the ecological transformation of the economy – rather than merely labelling banking products as "green" for its own sake.

Since 2020, the domestic banking sector has been operating amid constant turbulence – both economic and security-related – and, accordingly, most processes within the system are geared towards adaptation and survival in today's extremely challenging circumstances. Banks' activities on the credit market play a prominent role in the overall range of banking operations, as they form part of their transformational function, whereby the savings of some customers are converted into credit resources for other customers, and income from the bank's lending activities is regarded as the primary source of profit generation. Accordingly, the state of the credit market reflects both the savings process, through the availability of clients' funds held by banks, and the level of lending to the real sector of the economy, primarily to business entities. Active lending to the real sector of the economy has a positive impact on GDP through increased sales, job creation and improved public welfare (Figure 1).

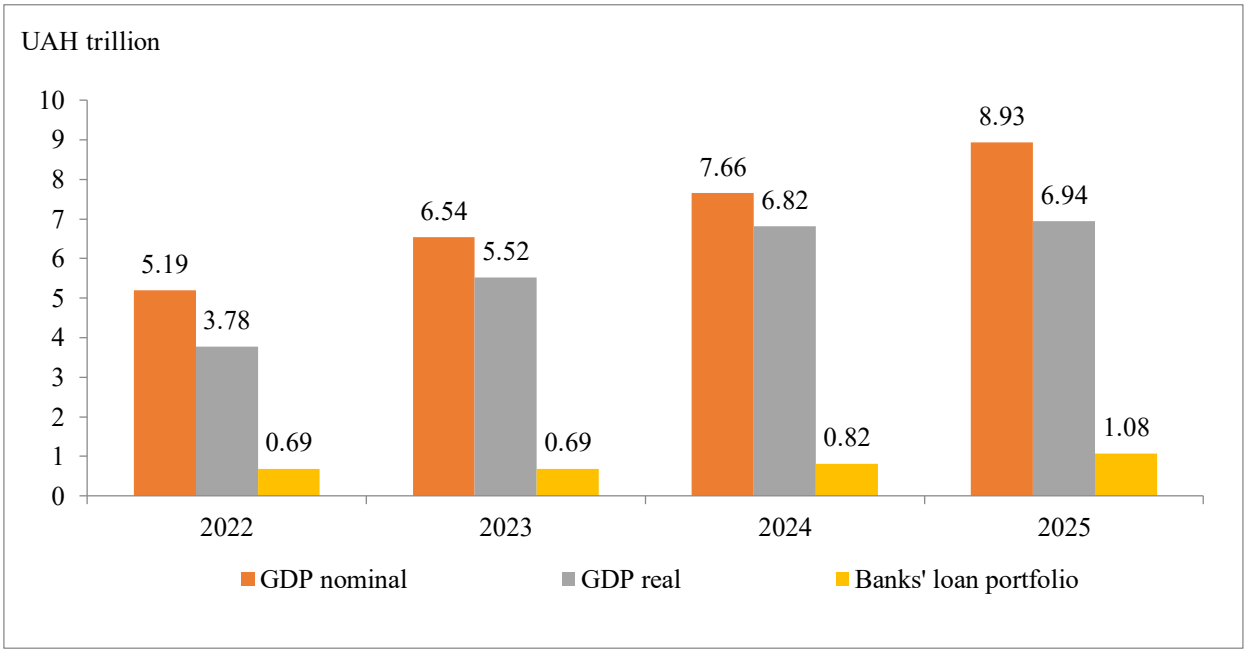


Fig. 1. The dynamics of GDP and the loan portfolio of Ukrainian banks in 2022-2025 (based on [21])]

As a result of the banking crisis in the second half of the 2010s, the number of banks in Ukraine fell significantly; however, lending volumes are gradually increasing, and lending activity has resumed after a temporary halt at the beginning of martial law in 2022. As mentioned before, clients' deposits serve as a source of funds for bank lending (Table 7).

Table 7

A comparative analysis of clients' deposits and the loan portfolio of Ukrainian banks in 2023-2025

Indicators	Years			Deviation, (+/-)	
	2023	2024	2025	2024/2023	2025/2024
Banks' loan portfolio, UAH million	686 635	823 991	1 080 149	+137 356	+256 158
Clients' deposits, UAH million	2 435 437	2 822 656	3 291 280	+387 219	+468 624
Ratio, %	28.19	29.19	32.82	+1.00	+3.63

Source: compiled based on [22]

The trends shown in Table 7 indicate that banks are not sufficiently active in the credit market, as only a third of the funds raised from clients are converted into bank loans.

Next, we will examine trends in the banking system's loan portfolio across client groups (Table 8).

Table 8

The trends in the banking system's loan portfolio in 2023-2025

Indicators	**Years, UAH million**			**Absolute deviation, UAH million**		**Relative deviation, %**	
	2023	**2024**	**2025**	**2024/2023**	**2025/2024**	**2024/2023**	**2025/2024**
Loans and client debt	686 635	823 991	1 080 149	+137 357	+256 158	+20.0	+31.1
- loans of legal entities	527 159	601 633	782 826	+74 474	+181 193	+14.1	+30.1
- provisions for loan impairment of legal entities	(274 930)	(262 486)	(95 658)	-12 444	-166 828	-4.5	-63.6
- loans of individuals	159 476	222 358	297 323	+62 883	+74 965	+39.4	+33.7
- provisions for loan impairment of individuals	(63 114)	(51 922)	(44 525)	-11 192	-7 397	-17.7	-14.2
Ratio of loan to legal entities and individuals, %	3.3	2.7	2.6	-0.6	-0.1	-18.1	-2.7

Source: compiled based on [22]

The data in Table 8 show that loans to legal entities significantly exceed those issued to individuals, by a factor of 3. However, it is worth noting a downward trend in this disparity, indicating a higher growth rate in loans to individuals.

In the context of this study, the focus is not on the banking system's entire loan portfolio, but specifically on the part that channels resources towards the environmental modernisation of the economy – the "green" lending. Since 2014, the global "green" lending market has seen a steady upward trend in the volume of such loans, both in the number of transactions and in their value. This segment experienced its greatest surge in 2023, when the total amount of "green" loans issued reached approximately 2.2 USA billion. An analysis of the market shows that in 2023 we recorded the highest figures: the volume of financing was 2.068 USA billion, whilst the number of loan agreements totalled 661. At the same time, in 2024, we saw a significant decline in these figures: the total value of "green" loans fell to 895 USA million, whilst the number of loans issued shrank to 296. This trend can be attributed to changes in the regulatory environment, a decline in the attractiveness of certain financial instruments, and the market's adaptation to new conditions.

In Ukraine, the "green" finance market is also gradually taking shape, particularly thanks to support for environmental initiatives and financing for sustainable development projects. However, compared with the global trends, the share of "green" loans remains relatively small for the time being, as this segment is in its early stages of development. The further expansion of "green" lending will largely depend on improvements to the regulatory framework, the development of "green" finance instruments, and incentives for environmental projects from both the state and the business sector.

The "green" finance market in Ukraine is at an early stage of development; therefore, particular attention must be paid to selecting effective instruments for implementing "green" banking that are suited

to current economic conditions and the financial sector's capabilities. According to experts, seven institutions within Ukraine's banking system can be identified whose activities most closely align with the principles of "green" banking. These bank institutions include: JSB "UKRGASBANK", JSC "Oschadbank", JSC "ProCreditBank", JSC JSB "LVIV", JSC "Ukreximbank", JSC CB "PrivatBank" and JSC "Raiffeisen Bank" [9]. These financial institutions are most actively implementing environmentally oriented financing instruments and supporting sustainable development projects [23; 24].

It should be noted that since 2015, JSB "UKRGASBANK" has been the first in Ukraine to implement a "green: banking business model fully aligned with modern global practices [25]. JSB "UKRGASBANK" has adopted a strategy of providing services to clients whose activities aim to implement resource-saving technologies and reduce their negative impact on the environment. Focusing on eco-banking, the bank aims to stimulate growth in private and public investment in sustainable development projects. The focus has been on supporting critical infrastructure and supplying energy equipment to state-owned enterprises such as "Ukrenergo", "Ukrhydroenergo" and "Ukrzaliznytsia". The main areas of financing are solar (SPP), wind (WPP) and hydroelectric power plants (HPP), biofuel-fired thermal power plants, heat-generating systems, eco-friendly transport, as well as measures and equipment to improve energy efficiency [26].

In 2024, JSB "UKRGASBANK" rebranded, changing its positioning and corporate identity. The bank now uses a new identity under the slogan "JSB "UKRGASBANK" – the country's eco-bank", accompanied by an updated logo. The brand restructuring considers the new challenges and realities that have arisen during the full-scale war, whilst the core environmental focus remains unchanged [26].

With the growing use of renewable energy sources in Ukraine, more households are switching to environmentally friendly electricity. Considering the results of government energy-efficiency lending programmes, JSC "Oschadbank" has launched the "Green Energy" loan programme for the public, which provides funding for the purchase and installation of equipment for generating electricity from alternative sources, including solar panels, heat pumps, and other energy-efficient systems. The bank also actively cooperates with the European Bank for Reconstruction and Development to implement energy efficiency programmes that support small and medium-sized enterprises. Furthermore, the bank provides loans for home insulation, the installation of energy-saving windows, solar collectors and other technologies that help reduce energy consumption. As part of its "green" financing activities, JSC "Oschadbank" also supports businesses that use renewable energy or are involved in waste recycling [27]. JSC "ProCreditBank" also actively supports environmental initiatives by financing projects in energy efficiency and renewable energy. For example, in 2023, the bank financed 119 environmental projects for Ukrainian enterprises, totalling 15.9 EUR million [28]. JSC JSB "LVIV" places great emphasis on environmental responsibility. In its operations, the bank considers the potential environmental impact of the projects it finances and prioritises working with companies that use energy-efficient technologies and comply with environmental standards [29].

JSC CB "PrivatBank" is also implementing environmental initiatives. The bank actively uses electronic document management, which significantly reduces the paper consumption. To this end, the PaperLess system was developed to enable the electronic creation, signing and exchanging of documents for both the bank's clients and other users. In addition, JSC CB "PrivatBank" offers financial solutions for small and medium-sized enterprises to modernize their production and introduce energy-efficient technologies. To implement environmental programmes, the bank secures funding from the European Investment Bank and the European Bank for Reconstruction and Development. It provides loans to the public for installing energy-efficient equipment, particularly solar panels [30].

Overall, Ukrainian banks are gradually expanding their financing of environmental initiatives, often with support from international financial organisations and government programmes, thereby contributing to the development of "green" banking in Ukraine.

CONCLUSIONS FROM THIS RESEARCH AND PROSPECTS FOR FURTHER EXPLORATION IN THIS DIRECTION

Consequently, "green" lending as an area of development for banks is of great importance to Ukraine, which is striving for European integration and to fulfil its climate commitments under the Paris Agreement and the EU's "Green Deal"; accordingly, the development of "green" lending is taking on strategic significance. In the context of post-war reconstruction, "green" financing is becoming not only a tool for attracting foreign investment, but also the foundation for building a sustainable, energy-independent economy. Considering the current range of "green" lending products on the market, as well as the problems and limitations to their implementation identified during the analysis, a set of new lending programmes is proposed; their introduction will expand the product range, stimulate demand from the

public and businesses, and ensure growth in the share of the "green" portfolio within the overall structure of the lending (Table 9).

Table 9

Proposals for improving "green" programmes

Proposals	Specifications
1. Product Innovations	"Turnkey energy-independent homes" for individuals; loan for "green" commercial construction; eco-friendly auto loans; "green" cards; issuance of "green" bonds
2.Digitalization	Fully online application process (similar to how Monobank already operates); payback calculator plus integration with pricing plans; an equipment marketplace within the bank's app
3. Financial Improvements	A down payment reduced to 10-15%; a grace period (6-12 months); a flexible interest rate based on the "green effect"
4. Partnerships	Collaborations with local communities, international foundations (EBRD), and equipment manufacturers
5. Marketing and Education	Educational campaigns for the bank's clients: "How a solar power plant pays for itself"; "Energy independence during blackouts"; "Real-life stories of clients"
6. ESG strategy	Implementation: "green scoring" of clients; loans with bonuses for reducing CO_2 emissions

Source: developed by the authors

The characteristics of the proposed product innovations are set out in Table 10.

Table 10

The characteristics of lending instruments for product innovation

Loan products	Overview
"Turnkey Energy-Self-Sufficient Home" for private individuals	This is a comprehensive loan programme for financing energy-efficient housing. It enables you to install solar panels and energy storage systems, insulate your home and modernise its building services. The innovative aspect lies in the "turnkey" approach, which combines various energy-efficient solutions into a single financial product
Loan for Green Commercial Construction	Designed to finance the construction of energy-efficient commercial properties (offices, business centres, warehouses). It involves using "green" construction standards that reduce energy consumption and environmental impact. The innovation lies in supporting "green" construction and the adoption of modern energy-efficient technologies in the business sector
Eco-friendly car loans	These are loans for the purchase of environmentally friendly vehicles, in particular electric or hybrid cars. They encourage reducing CO_2 emissions and the development of eco-friendly transport. The innovative aspect lies in facilitating the transition to "green" transport and supporting sustainable transport development
"Green" cards	These are bank cards linked to environmental initiatives. A portion of transactions made using such cards may be channelled towards supporting "green" projects or environmental programmes. The innovation lies in combining familiar financial instruments with environmental responsibility to encourage environmentally friendly behaviour among clients
Issuance of "green bonds"	This is a tool for raising funds to finance environmental projects. The funds raised through the issuance of such bonds are channelled into "green" initiatives, including energy efficiency, renewable energy and environmental projects. The innovative aspect lies in leveraging the financial market to support sustainable development and attract investment in environmental projects

Source: developed by the authors

However, these measures are currently difficult to implement due to a lack of long-term financial resources and low levels of capitalisation among banking institutions. Close attention should be paid to developing a mechanism for issuing green bonds and other securities to encourage the systematic greening of the economy's most polluting sectors.

Consequently, it is essential to step up the state's efforts to create favourable conditions for expanding preferential lending schemes and providing financial support for environmentally oriented initiatives. It is also important to incentivise credit and financial institutions to develop and introduce "green" financial products and services. The development of a separate segment for such products and services in the financial market will not only facilitate the practical implementation of green economy principles but also enhance the overall effectiveness of national environmental policy. This will be made possible through integration with environmentally oriented state financial policy, which provides a strategic framework for supporting sustainable development.

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РОЗВИТОК «ЗЕЛЕНОГО» КРЕДИТУВАННЯ В БАНКІВСЬКІЙ СИСТЕМІ УКРАЇНИ

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У статті обґрунтовано теоретико-методичні підходи та прикладні аспекти розвитку «зеленого» кредитування в банківській системі України. Досліджено зміст фінансових інструментів «зелених» фінансів, проведено порівняльний аналіз основних характеристик зеленого кредитування та кредитування, пов'язаного зі сталим розвитком, систематизовано основні принципи, переваги і недоліки «зеленого» кредитування. Доведено, що врахування сильних та слабких сторін є ключовим аспектом в процесі підбору «зелених» кредитних продуктів, з якими банки виходять на ринок. На основі аналізу показників стану та якості процесів кредитування у банківській системі окреслено тенденції зміни обсягів, структури та інновацій на цьому сегменті банківського ринку. Охарактеризовано діяльність ключових гравців на ринку «зеленого» кредитування – банків, які найактивніше впроваджують інструменти екологічно орієнтованого фінансування та підтримують реалізацію проєктів сталого розвитку. Запропоновано комплекс пропозицій щодо удосконалення «зеленого» кредитування в банківській системі України. Реалізація запропонованого комплексу заходів дозволить банкам підвищити доступність «зелених» кредитів для широкого кола позичальників, розширити клієнтську базу та збільшити частку зеленого портфеля у загальній структурі кредитних активів. У ширшому контексті це сприятиме зміцненню позицій ESG-банкінгу в Україні та забезпечить внесок банківської системи у формування енергонезалежної, сталої економіки в умовах відновлення країни.

Ключові слова: «зелений» кредит, кредитна діяльність, сталий розвиток, банківська система України.