MEST Journal
DOI 10.12709/mest.10.10.02.03

GREEN LOANS AND ECO LOANS IN THE BANKING SECTOR UNDER THE CONDITIONS OF CLIMATE CHANGES

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JEL category: **E5, E58, G21, G33**

Abstract

Environmental pollution and depletion of non-renewable resources are major problems at the international, national, regional, and local levels that endanger biological diversity, human health, and the further development of the economy. The economic and financial impact of climate change can lead to considerable future losses for banking financial institutions and environmental degradation is becoming a crucial dilemma globally. Climate change has become a threat to sustainable development. Mitigation and adaptation should be a priority of national policy. The increasing tendency of excessive consumption of natural resources due to intensive economic activity of corporations has led to a significant increase in greenhouse gas emissions, leading to global warming and, ultimately, to global climate change. These issues present the scientific community with the dilemma of finding a compromise between economic development and its impact on climate change. The main aim of the research is to emphasize the importance of responsible lending by promoting green banking products as green and eco loans, identify the potential environmental impact of negligent financing under the conditions of climate change, give definitions of this topic, consider current trends in the banking sector and prospects of development. Also, based on international experience, the authors tried to identify the main aspects of the environmental management policy of ProCredit Group and examine the share of the green loan portfolio at the group level, determine the environmental impact and subtract the improvement strategies and methods for implementing green lending in the Republic of Moldova.

Keywords: *banks, financial stability, green loans, environment, climate change, credit risk.*

1 INTRODUCTION

Nowadays, in the conditions of climate change responsible banking is becoming the most important direction that should be promoted among financial institutions to build a long-lasting and sustainable economic development.

By promoting and stimulating green project investments in financial institutions it is possible to reduce negative environmental impacts and increase positive ones. The growing demand for financial products that support sustainable economic-, social-, and environmental

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development has created a need for adequate tools such as green and eco loans, which allow companies to finance initiatives that have a clear positive environmental impact.

Currently, environmental aspects play a crucial role in lending activities and rising concerns among banking institutions. One can explain that phenomenon by the expected fundamental climate changes in the following decades will presumably have a significant financial impact on world economic stability. Moreover, it will affect the availability and quality of water resources and press the planet's natural ecosystems, especially in coastal areas. Accordingly, it will influence all economic activities such as energy production and consumption, tourism and infrastructure, changes in demand for industrial products, and, in general, will affect the economic life of different geographical regions. All these effects imply the costs of services related to the environment and the named activities and indirect costs to public health and environmental pollution. Climate change has become a threat to sustainable development, and mitigation and adaptation measures must become a priority in national policies. The increasing population and consumption of material goods significantly contribute to the growth of the negative impact on the environment. (Stern, 2008)

Excessive consumption of natural resources has generated considerable growth in greenhouse gas emissions, causing global warming and ultimately global climate change. These issues put the scientific community facing the dilemma of finding a compromise between economic development and its effects on climate change. Finding this compromise will mean the sustainable development of humanity.

Climate and environmental risks have increasingly become important topics for central banks and financial regulators. Environmental risks can have a material impact on financial and macroeconomic stability. It is broadly accepted, and many central banks have started to develop micro and macro-prudential frameworks that incorporate risks related to climate change and the environment.

Following different analyses, climate risk is a growing financial risk worldwide. Therefore, it is necessary to take immediate and coordinated actions, at the international and national levels to mitigate the negative consequences of climate change by reducing greenhouse gas emissions and helping all countries to adapt to this impact which has already become inevitable. Unfortunately, the main problem is that most companies perceive climate change as a distant and irrelevant concept and are predominantly concerned about increasing their profitability at any cost rather than paying attention to the socio-environmental impact they could produce.

The main aim of the research is to emphasize the importance of responsible lending by promoting green banking products as green and eco loans, identify the potential environmental impact of negligent financing under the conditions of climate change, give definitions of this topic, consider current trends in the banking sector and prospects of development. Based on international experience, this research intends to identify the main aspects of the environmental management policy of ProCredit Group - in the Republic of Moldova, examine the share of the green loan portfolio (GLP) at the Group level, determine the environmental impact, and summarize the improvement strategies and methods for implementing green lending.

Moreover, the work is relevant because it illustrates the main aspects and the importance of green loans in the banking sector, and the main barriers and impediments that are slowing the process of green lending among banking institutions. It provides an overview of the environmental management policy in a banking institution considering the main trends in dynamics and the level of implementation of green lending among European and local banking institutions.

The main scope of this paper is to identify the causes, consequences, and methods of anticipating climate change and environmental degradation caused by the intensive economic activity of corporations. The influence of green lending on the quality of the loan portfolio of the ProCredit Group is investigated based on correlation analysis to reach the main subject of the researched topic. The authors used Student's T-test for understanding the level of significance and validation of the obtained results. The research is oriented toward the identification of the main obstacles to a green lending phenomenon in the banking system and the possibility of transition

to a low carbon economy based on a SWOT Analysis of the green lending phenomenon.

The informational support of the research consists of the reports and publications of the international financial institutions (the International Monetary Fund, the Bank for International Settlements, the World Bank, the Basel Committee on Banking Supervision), the normative acts, the publications, and the statistical data on the official website of the National Bank of Moldova, publications on the research theme of central banks in European countries, results of scientific researches published in the Republic of Moldova, Romania and other countries, presentations included in international conferences, etc.

Research methodology is based on fact-finding, comparative analysis, correlation analysis, testing methods based on Student's T-test data validation, scientific observation, quantitative and qualitative analysis, graphic representation, classification, methods of statistics, induction, and deduction methods. The literature review on this topic was conducted by using as bibliography different sources such as legislative and normative acts, monographs and teaching papers, articles from periodical publications, and annual reports of international financial and non-financial institutions.

The value of the research is determined by the theoretical competence and practical relevance of the study, as well as the given recommendations, which implementation will contribute to reducing the negative and increasing the positive impacts on the environment.

2 PROCREDIT GROUP ENVIRONMENTAL LENDING AND PERFORMANCE IMPACT

Currently, the green lending phenomenon is a rapidly growing and promising segment of the global financial market. The analysis of the green lending activity at the level of PCB Group could strongly affirm that it is a development-oriented bank to make a significant contribution to reducing the climate change impact and acting in an environmentally responsible way by considering sustainability and responsible resource management.

Specifically, ProCredit Group consists of 12 legally independent ProCredit banks in 12 countries, Romania, Bulgaria, Serbia, Albania, Kosovo, Ukraine, Georgia, North Macedonia, Ecuador, Moldova, Germany, and Bosnia. Historically, Procredit Group issued the first green loans in 2006 within an EBRD-sponsored energy efficiency program followed by similar KfW-sponsored programs. Due to continued demand after their expiration, the group decided to continue to offer energy efficiency loans and began to develop their green lending methodology. It allowed to determine the eligibility of green investments and to calculate their impact on the Group level. Developing their approach was of high necessity as then was no industry standard for green lending.

Still, there is no harmonized definition for the kinds of lending that can be considered *green*, which makes any intercompany comparison difficult if not impossible. Fortunately, the European Union took up the fight against greenwashing and is currently developing the EU Taxonomy for Sustainable Activities. Procredit Group embedded a green lending approach within a broader green finance institutional framework developed together with the consulting company IPC in which ProCredit has its origin. Apart from definitions of what qualifies as *green*, the framework also includes a green governance structure, which consists of an environmental department in each bank and holding company that reports directly to management. At ProCredit, green lending means considering the environmental and social impact of every aspect of the performed operations and sensitizing, politicizing, and motivating the whole staff. As result, it could be concluded that even though the Group selection green criteria are becoming stricter the overall volume of lending is increasing in dynamics. (ProCredit, 2021)

According to the data analyzed, from 2016 to 2020, ProCredit Group has registered a sustainable development in dynamics focused on lending green banking products mainly to business clients. In 2020, the share of the green loan portfolio to business clients was 98% the same as in 2019.

However, the share of outstanding green loans to business clients remained the same, the volume

of the green loan portfolio to private clients registered an increase by 42%, amounting to 2020 a green loan portfolio of 17 mln EUR. In 2020 the Group focused on private individuals, which resulted in a significant increase in the loans granted to private individuals. By analyzing the total volume of the outstanding green loan portfolio, one can conclude that during the period 2016 to 2020, the total volume registered an increase of 198% compared to 2016. Another aspect that needs to be mentioned is that the green loan portfolio has a positive tendency to increase each year. In 2020, the total growth of the GLP was 24% compared to the 2019 year. In 2019, the growth of the green loan portfolio was 17% in total.

By analyzing the total volume of green loans disbursed in dynamic, one can observe that the GLP is growing each year. In 2020, the new paid-off green loans, in total, registered an increase of 180% compared to the 2016 year and 16% compared to the 2019 year. These significant results are due to the efficient and proper internal policy and the high staff qualifications.

From the current analysis, one can see that the share of non - performing green loans during the mentioned period shows a positive tendency in dynamics of decrease. Because the new disbursed green loan portfolio is growing each year, the share of non-performing green loans is decreasing each year - from the non-performing loans share of 0.80% in 2016 to 0.60% in 2020. It is to conclude that the bank is well-performing. The results are proving these affirmations.

Over the last decade, ProCredit institutions have disbursed green loans to SMEs totaling EUR 1.8 bn, and as of the end of 2020, the outstanding green loans made up close to EUR 1bn or 18.7% of our total loan portfolio. With close to 20% of the loan portfolio allocated to green investments, ProCredit performs well in international comparison. The share of green loans in the total portfolio raised continuously since 2016 and it was expected to reach the 20% threshold by the 2021 year. Also, by analyzing the total loan portfolio of the ProCredit Group and the development of the green loan portfolio, one can conclude that the Group has sustainable development in dynamics with a positive tendency of increase both in absolute and relative proportion. The share of Green Loans in the Total Loan Portfolio considerably increased from 9% in 2016 up to 19% in the 2020 year. The positive dynamics of increase are kept mainly due to the internal environmental management system – oriented towards responsible banking with a focus on reducing the negative socio-environmental impact. The sustainable growth of a loan portfolio shows that the bank is more reliable and has a stable position in the market. Based on the performed analysis, we can conclude that ProCredit Bank is a responsible development-oriented bank that performs responsible banking activities. A part of this responsibility is to act by the predefined social, ethical, and environmental standards. A responsible approach to environmental protection[1] is an important part of ProCredit Bank's responsible business and social model and an integrated value in their banking philosophy. (ProCredit, 2021)

By researching the ProCredit Bank's environmental standard, one should outline that it aims to reduce the environmental impact of lending activities and integrate and implement environmentally friendly procedures in a comprehensive operating system. Also, the bank enhances the direct environmental impact on energy savings and decreases carbon dioxide releases. Thus, ProCredit Group continues to play an important role in raising environmental awareness among its employees, customers, and the public. It also supports civic initiatives for environmental protection.

Moreover, climate change risk for ProCredit Group is properly mitigated by numerous measures taken to reduce industrial pollution and enhance environmental protection. Through the actions and activities of its Environmental Committee, the ProCredit Bank is committed to implementing policies that advance the bank's approach to environmental impact management, both for the bank itself and its customers.

[1] Defined in (Law, 1993)

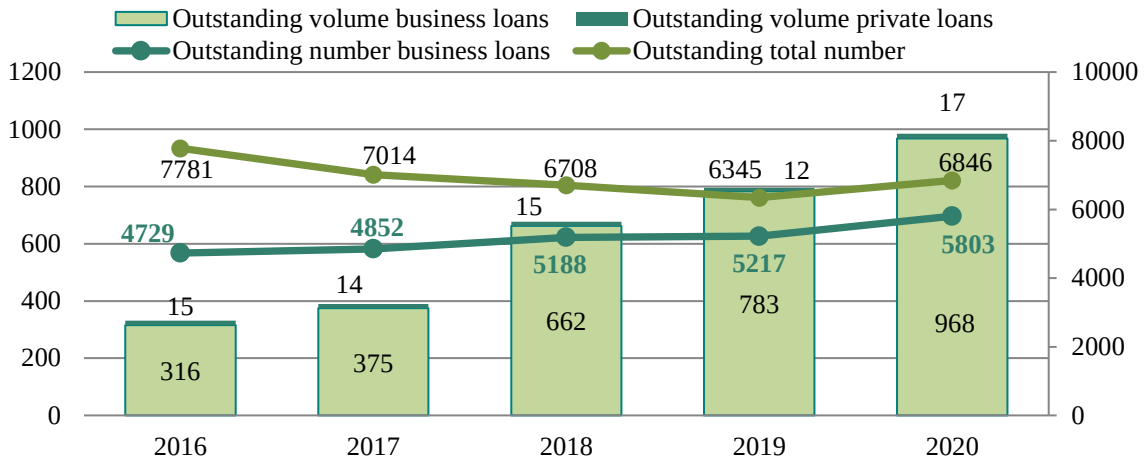

Fig. 1 The green loan portfolio of ProCredit Group during 2016 – 2020.
Source: elaborated by authors.

2.1 IMPACT OF GREEN LOANS AND ECO LOANS ON THE QUALITY OF PROCREDIT GROUP LOAN PORTFOLIO

We can define green banking as banking that takes account of environmental risks, including risks from climate change, which may have a material impact on the short and long-term stability and development of the financial sector and the macroeconomy. Financial investments are directly or indirectly affected by climate change and the harmful environmental effects of industrial processing such as air, water, and land pollution that should account for these in their risk assessments.

Environmental damages and climate-related risks affect the stability of banks, insurance firms, and other financial actors, and they need to be of concern for central banking. So far, only a few central banks and financial regulators have dealt with environmental risk, and even fewer considered it part of their systemic risk framework, although climate change risks can pose significant systemic risks to the financial sector and the economy. To determine the impact of green lending on banking activity[2] it is necessary to consider how the portfolio of bad loans changes depending on the presence of green loans in the structure of the total loan portfolio because the NPL is an indicator of the banking portfolio effectiveness of default risk management policy. The main objective of this study is to determine the impact of the green lending policy on the quality of the ProCredit Group Loan Portfolio. Using a sample of 12 banks, we examine how ProCredit banks' green lending affects credit risk. The study was conducted based on an eleven-year dataset of ProCredit Group from 2010 to 2020. The study contains an empirical assessment of the Green Credit Policy's success. (ProCredit, 2021) We used the non-performing loan ratio as a performance indicator for credit risk. An NPL is a loan when the debtor fails to make scheduled payments for at least 90 days. The research objective is to understand the financial risks of green lending compared to conventional lending. To find whether a higher green loan ratio reduces the share of the group non-performing loan ratio, the researchers used the panel regression techniques that include two-stage least square regression analysis and random-effect panel regression. Consequently, this study analyzes the impact of the green credit ratio on the loan NPL ratio. We checked the hypothesis that a higher ratio of green lending decreases the NPL ratio. The share of the green loan portfolio in the total loan portfolio was an exogenous variable because it affects the share of non-performing loans, and the share of NPLs will be recorded as an endogenous variable as it is influenced by exogenous:

a. share of green loan portfolio – exogenous variable (X).
b. share of non-performing loans – endogenous variable (Y).

[2] (Law, Law on banking activity nr. 202 from October 06, 2017, 2017)

Based on the correlation analysis, we can see an indirect linkage between the share of GLP and NPL ratio of the PCB group because they tend to change in the opposite direction as the tendency to increase one variable determines the decrease of the other. By calculating the correlation coefficient *(r)* among the share of GLP and NPL ratio of the PCB Group, we obtain the following:

$$r_{xy} = \frac{n\sum x_i\ y_i - \sum x_i \sum y_i}{\sqrt{[n\sum x_i^2 - (\sum x_i)^2\ ]\ [n\sum y_i^2 - (\sum y_i)^2\ ]}}$$

The results show *r(X, Y)*=-0.94077, which means a strong correlation among variables. So, there is a strong interlinkage among analyzed variables. But, to calculate the influence of exogenous on the endogenous variable, it is necessary to calculate the coefficient of determination r^2, which in this case is r^2= 0.8850. We can conclude that the endogenous variable – non-performing ratio is influenced by the exogenous variable – share of the green loan portfolio, in the proportion of 88,50%.

Testing the significance of the correlation coefficient among the analyzed variable was made based on the Student's T-test in the following way:

1. Formulating the hypothesis:

H_0: *ρ = 0, There is no correlation among variables.*

H_1: *ρ ≠ 0, There is a correlation among variables.*

2. The critical value we took from the Student's *t* distribution table in dependence on the level of significance *α (α*=5% or a value less than 5%*)* and the number of degrees of freedom, *df=(n-2)*. The statistical value *t* we determined according to the formula:

$$t = \frac{r-p}{\sqrt{\frac{1-r^2}{n-2}}} = \frac{-0{,}94077}{\sqrt{\frac{1-0{,}8850}{11-2}}} = \frac{-0{,}94077}{\sqrt{\frac{0{,}1150}{9}}} = -8.32$$

The results show that statistical *t* has a value of - 8.32. The critical value of *t* according to Student's distribution for *α*= 5% and degrees of freedom *df*=9 has a value of *t(0.025;9;)*=2.262. By comparing the *t* values the decision is made as follows:

if|t|<t_(α/2;(n-2);) we will not reject the hypothesis H_0 which stipulates that between variables there is no correlation.

if|t|>t_(α/2;(n-2);) we will reject the hypothesis H_0 which stipulates that between variables there is no correlation.

Respectively: $|t|=|-8.32|=8.32$ is higher than $t(0.025;9;)=2.262$ as $|-8.32|>[\![t]\!](0{,}025;9;)=2.262$. That result shows that we can reject the null hypothesis H_0: $\rho = 0$, which assumes that there is no correlation among variables. With a confidence of 95%, we can conclude that the analyzed variables are in a strong indirect linear correlation.

Studies on green lending suggest that sustainability criteria integration has increased the quality of the credit risk assessment significantly, and it contributed to decreasing the NPL ratio. The results suggest that allocating more green loans to the total loan portfolio does reduce the PCB group NPL ratio. We concluded that developing the green lending industry among financial institutions has a positive effect on reducing the negative environmental impact and improving the financial performance of a banking institution. The study contributes to the stimulation of financial institutions to develop and promote green banking products focusing on reducing the negative environmental impacts and credit risk. By analyzing the correlation analysis results, we concluded that environmentally oriented green projects influence the quality of the loan portfolio. For the clients, responsible banking and green investments have a positive impact. They contribute to the efficient allocation of financial resources intending to reduce the depletion of natural resources. (LMA, 2021)

Based on the researched topic, financial institutions with higher environmental sustainability have less regulatory risks because they have a lower probability of being fined for environmental misconduct and are better prepared to adopt any regulatory changes regarding environmental issues. On the contrary, banks with lower environmental sustainability face higher stakeholder and reputational risks. Perceptions of environmental issues have changed, leading to increased public awareness and media coverage. Thus, no one can longer neglect the ecological aspect. Green lending is oriented towards a long-lasting economic activity through proper funds allocation and increased profitability for both sides – demand and supply.

Thus, we can conclude that nowadays, the environmental aspect should be considered the default risk of a company that could be negatively affected by a lack of ecological sustainability. The banking sector may also significantly influence biodiversity while providing financial support to high-impact sectors such as forestry, mining, oil and gas, fisheries, and infrastructure. In project finance, banks may exercise their powers by assuming roles as environmental policemen to ensure that their borrowers comply with the environmental standards and could enter a partnership with different industries and encourage companies to be more sustainable.

Findings that the effect of green lending on credit risk is positive on the bank development also suggest that mechanisms and platforms for commercial banks to learn from ProCredit banks on risk management in green lending could be beneficial and improve the quality of loan portfolio. In addition, this study contributes to understanding the financial stability of the lending institutions of ProCredit Group as a whole by addressing whether sustainability integration in the form of green lending mitigates environmental risk exposures.

The results suggest that allocating more green loans to the total loan portfolio does reduce the NPL ratio. The study contributes to the literature on the correlation between green lending and credit risks and the impact of institutional pressure on environmental and financial risks. The green credit policy requires banks to offer green credits for ecological protection, emission reduction, energy conservation projects, and restrict loans for high-pollution, high-emission, and overcapacity industries. In addition to reducing environmental harm, the policy also strives to lower the financial risks identified in heavily polluting industries, with the intended added benefit of improving financial sector stability. In the case of banks with a non-significant systemic impact on the banking sector, the plans may contain simplified requirements. When developing such plans, both the commercial bank and the central bank will focus on close cooperation, having as their primary objective the least impact on the country's financial system and the resources of the public budget.

2.2 BARRIERS TO ENVIRONMENTAL LENDING

However, sustainable investment project financing remains at an early stage of development. The promotion of environmentally related banking products has been underway for nearly a decade in some EU markets. Thus, currently, there are only a few banks that offer dedicated loan products or actively promote the benefits of such investments related to green projects. The main reason for such tendency is mainly due to several potential market barriers that create impediments to the development of green lending. Accordingly, the main barriers to environmentally lending can be categorized as follows:

- regulatory barriers – enabling environment underpinning the environmental lending.
- demand-side barriers – are related to awareness and willingness among end borrowers to invest in ecological activities, and
- supply-side barriers – are related to the capacity and willingness of local financial institutions to develop products and the ability of international financial institutions to support them. (OECD, 2014)

In many countries and markets, the lack of clarity as to what constitutes green lending can be an obstacle for investors, companies, and banks seeking to identify opportunities for green investing. Many companies are interested in investing in green projects but the lack of disclosure of environmental information by companies increases the “search costs” for green assets and thereby reduces their attractiveness. In addition, when a company- or project-level ecological information is available, the lack of consistent and reliable “labeling” of green loans also constitutes a barrier to green investment. In some countries, there is the segregation of data management in different agencies. Data collected by environmental regulators are not shared with banking regulators, and investors also face information asymmetry. Some of the barriers from the regulatory side of environmental lending include (OECD, 2014):

– *Low energy prices*: energy prices are perhaps the most significant factor in determining the level of investment that flows into energy efficiency products. Many markets continue to subsidize the energy costs for either social

protection or industrial competitiveness. That reduces the economic benefits of investing in energy efficiency, lowers the rates of return, and increases the payback periods.

- *Weak regulatory environment:* the environment policy remains weak in encouraging borrowers to access environmental lending. Environmental benefits of clean technologies, such as reduction in greenhouse gas emissions or pollutants, may not be recognized sufficiently in national legislation. Many countries do not have dedicated teams or institutions to support energy efficiency development.

Some progress appeared in addressing information asymmetry. For example, more and more stock exchanges have issued environmental disclosure guidance for listed companies, and several countries have introduced mandatory disclosure requirements. Another important kind of information asymmetry includes a lack of information or knowledge of the commercial viability of green technologies and policy uncertainties on green investment. This lack of information and policy uncertainty results in excessive risk aversion by investors towards projects in renewable energies, new energy vehicles, and energy-saving technologies. Some of the major barriers from the demand side of environmental lending include (OECD, 2014):

- *Lack of understanding of the benefits among the borrowers:* lack of understanding of the main advantages of investing in green projects in the long run as most companies do not consider the efficient allocation and management of natural resources.
- *Lack of willingness to borrow for energy efficiency:* potentially high initial capital costs for energy efficiency equipment can act as a disincentive. The focus is on the short run rather than on the long run. Also, they ignore the environmental aspect and do not consider the negative impact they could cause. The main goal is to increase profitability with lower costs rather than doing a responsible business. Green Project investments require a more period than a standard loan granted as it requires a more detailed analysis of project validation.

The general understanding of the financial implications of environmental risks by financial institutions is still at an early stage. Many banks and institutional investors must develop the capacity to identify and quantify the credit and market risks that may arise from their environmental exposure and often underestimate the risks of "brown" investments and overestimate the risk profile of green investment opportunities. Partly as a result, there remains an overinvestment in polluting and greenhouse gas-intensive projects and underinvestment in green projects. Some of the major barriers to the supply of environmental financing include:

- *Lack of familiarity:* local financial institutions tend to lack familiarity with environmental lending products as engagement in green lending requires training on a timely basis and additional costs. Limited application of sustainable banking principles due to reasons such as the lack of understanding of their importance, the lack of consistency between risk management and green lending guidelines (at the country- or bank level), and the lack of reporting practices, resulting in difficulties in measuring the provision and performance of green lending.
- *Lack of financial institutions' capacity:* environmental lending products have strict technical performance standards. Such banking products require significant investments in terms of staff time, information systems, credit and risk assessment procedures, eligibility checks, reporting procedures, and product marketing.
- *Profitability and resource considerations:* implementing green banking products requires high resource costs. Thus, the profitability of the financial institution may be negative or lower in the early testing and adoption phase because of the above demands. The process of analysis of a green investment loan often requires a higher period and resource allocation than a standard installment loan.
- *Maturity mismatch for green lending:* Some banks are constrained in their ability or interest in extending long-term loans due to relatively short maturity on the liability side of their balance sheets and the need to avoid excessive maturity transformation. On the other hand, many green projects such as water

and waste treatment, clean energy, clean transportation, and some energy-efficient buildings are long-term in nature and tend to have higher capital expenditures and lower operative expenditures than conventional projects. Where capital markets are less developed or banks are not effectively tapping the bond market to increase their sources of long-term funding, such a maturity mismatch could be a major constraint on the financing of long-term green projects.

- *Lack of international funds allocated to Green Lending* – there are few international funds allocated through local financial banking institutions for financing such kinds of investment projects that are having as the main goal of reducing the negative environmental impact and optimization of intensive usage of natural resources. Also, due to increased funds attractiveness, there is a high demand for them, and some companies may face a lack of availability of funds.

2.3 SWOT ANALYSIS OF GREEN LENDING

This study used the SWOT analytical tool to assess the strengths, weaknesses, opportunities, and threats of green lending activity within banking institutions. The main identified green lending activity strength is providing considerable environmental support by reducing the carbon and greenhouse gas emissions in the atmosphere. It contributes to the cost optimization of companies as by implementing and investing in green projects the entities obtain a more efficient electricity consumption and have lower operative costs. (Stern, 2008)

As an additional strength, green lending allows for resource savings and proper allocation and management of natural resources, which contributes to reducing industrial pollution. The most important aspect of environmental lending is reducing and mitigating the credit risk. Studies show that the higher the share of the green loan portfolio, the smaller the share of non-performing loans, which leads to a better quality of the bank's loan portfolio. Furthermore, the environmental awareness of a bank implies an improvement in its reputation and has a positive impact on its goodwill.

Analyzing the main weaknesses of green lending, we can identify green investments require huge starting costs because they are based on the long-term business development of the company and require higher costs than the usual investment. This type of investment usually needs more time for project checking and more complex financial analyses, which affect the duration of document processing. Another important aspect related to the negative sides of green lending assumes a shortage of funding and difficulties in accessing funds. This is mainly due to the high demand for such banking products because they have more favorable lending conditions than standard ones. Among weaknesses of green lending, there is conceptual and technical uncertainty, which usually requires employee training to increase the product awareness among banking employees and its client. One of the key opportunities of green lending activities of banking institutions is international recognition as it contributes to the improvement of the reputation. In addition, it leads to the development of a circular economy based on the principles of waste and pollution design, maintenance of products and materials in use, and regeneration of natural systems. Other green lending opportunities include alternative economic opportunities, sustainable and long-lasting development with a long-term business vision, and responsible lending banking practices based on increasing positive environmental output. (LMA, 2021)

The most common threat to environmental lending remains to be the ignorance of the environmental impact aspects and the short-term development vision of business owners that is mostly concentrated on profit maximization with the reduced initial costs. Unfortunately, the human individualistic and self-contributory approach remains to have a considerable barrier to environmental lending activities. A significant role in impediments to the green lending approach of banking institutions has the insufficient support offered by governmental authorities worldwide. An additional factor of influence constitutes the lack of enthusiasm from the supply and demand side due to the increased initial costs in implementing green projects and higher payback period in comparison to a standard loan.

By researching green lending using SWOT analysis, environmental aspects bring more

identified strengths than weaknesses. Moreover, based on this analysis, the investment opportunities provided by green projects outweigh most of the weaknesses identified. Thus, we can conclude that green lending practices offer convenient effects, the implementation of such investments is more rational, and investment efficiency in terms of costs and long-term sustainable development of the company is favorable.

Climate change mitigation is possible through efficient allocation of financial resources towards green investment projects that are having a considerable positive impact on the reduction of carbon and greenhouse gas emissions. We cannot avoid that risk, but if we properly anticipate it, we will have time enough to realize massive collective actions at the national and international levels. Thus, to build a long-term vision of the business development we should take it more seriously and be responsible for our actions. Financial institutions, especially banks, have a unique market position as they have deep market knowledge and experience across all economic sectors. They arguably have one of the widest networks, outreaches, and client bases and can shift consumer behavior by scaling up and redirecting financing flow towards low carbon and climate-resilient investments.

3 CONCLUSIONS

Green lending is part of a comprehensive environmental approach that ProCredit Bank of Moldova is adopting intending to substantially improve its internal and external environmental impacts and, in this way, contribute to climate change mitigation.

Building up a strong “green loan” portfolio is one of the main objectives of the environmental strategy of the banks. Thus, green loans promoted by the bank are designed to complement the existing loan offer to business and private clients by financing measures in the areas of energy efficiency, renewable energies, and other environmentally related fields.

For ProCredit Bank of Moldova to achieve a bigger impact on the environment through its operations, it is necessary to improve the environmental lending approach in the country. Thus, the review of the international experience of green lending activity in European banking institutions indicates the following recommendations for the ProCredit Bank of Moldova:

- Increase the awareness of green banking products among local customers by intensification marketing activity by using different advertising channels.
- Emphasize to customers the benefits and advantages of green investments and provide proper consultancy regarding the environmental impact of their business activity and offer the best green solutions for their long-term development.
- Engage in becoming a partnership bank of more international financial institutions to allocate a higher volume of available funds for financing eligible green projects with better lending conditions and a simple application process.
- Improve information communication and a sharing mechanism for environmental protection and financial departments as departments of environmental protection and business crediting should properly divide their work, strengthen cooperation, and establish information-sharing mechanisms through such means as an information platform and a corporate credit information system.
- Establish a separate Green Lending department with a focus on green lending activity to SMEs and PIs. In this regard, the bank will be more efficient in terms of a green lending approach to its clients and will reach a higher increase in the green loan portfolio.
- Develop more attractive own green banking products by offering preferential loan conditions, higher grace periods, longer maturity, and fewer collateral requirements. Green banking products should be diverse, not only installment loans but also green cards, green accounts, etc.
- Establish a structured branding of green financial products and services. It plays a significant role in achieving client loyalty and ensuring that such products are tailored to the local specific needs and requirements. The proper and consistent branding of innovative products and services can play a substantial role in overcoming knowledge and perception barriers sometimes faced by “green” offerings.

- Allocate additional time and financial resources to investments in staff training related to the main aspects of green banking products and eligibility criteria for loan categorization.
- Organize training and conferences for local university students to increase their familiarity with concerning green lending banking products, the need for environmental protection, and climate change risk mitigation.
- Assess existing local green programs that could be implemented in the Moldovan banking system and help banks to identify key barriers to green lending.
- Stimulate the local commercial banks to develop green products and engage in more international financing programs.
- Require clients to consider their environmental impacts and the sustainability of the business activity when receiving the loan and reporting on its use.
- Offer preferential loan conditions to those clients that are performing their business activity in compliance with the socio-environmental requirements and monitor their environmental footprint in terms of CO_2 emissions, water, electricity consumption, and energy savings.

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Received for publication: 11.03.2022
Revision received: 15.04.2022
Accepted for publication: 26.06.2022

How to cite this article?

Style – **APA** *Sixth Edition:*

Ciobu, S., & Sajin, T. (2022, 07 15). Green loans and eco loans in the banking sector under the conditions of climate changes. (Z. Cekerevac, Ed.) *MEST Journal, 10*(2), 26-37. doi:10.12709/mest.10.10.02.03

Style – **Chicago** *Sixteenth Edition:*

Ciobu, Stela, and Teodora Sajin. "Green loans and eco loans in the banking sector under the conditions of climate changes." Edited by Zoran Cekerevac. *MEST Journal* (MESTE) 10, no. 2 (07 2022): 26-37.

Style – **GOST** *Name Sort:*

Ciobu Stela and Sajin Teodora Green loans and eco loans in the banking sector under the conditions of climate changes [Journal] // MEST Journal / ed. Cekerevac Zoran. - Belgrade – Toronto : MESTE, 07 15, 2022. - 2 : Vol. 10. - pp. 26-37.

Style – **Harvard** *Anglia:*

Ciobu, S. & Sajin, T., 2022. Green loans and eco loans in the banking sector under the conditions of climate changes. *MEST Journal,* 15 07, 10(2), pp. 26-37.

Style – **ISO 690** *Numerical Reference:*

Green loans and eco loans in the banking sector under the conditions of climate changes. **Ciobu, Stela and Sajin, Teodora.** [ed.] Zoran Cekerevac. 2, Belgrade – Toronto : MESTE, 07 15, 2022, MEST Journal, Vol. 10, pp. 26-37.