DOI: 10.55643/fcaptp.6.47.2022.3885

ESG RISK MANAGEMENT IN UKRAINIAN BANKS

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ABSTRACT

The purpose of the study is a structural analysis of sustainability risks by components, taking into account the specifics of the banking business. The main results of the study are the streamlining of approaches to the systematics of ecological, social, and managerial risks, proposals for creating an additional mechanism for managing such risks, and determining the key role of the supervisory authority in encouraging banks to transform. Ukrainian banks are still at the beginning of the path to a full-fledged business model based on the principles of sustainable finance. The culture of risk management requires unification and a free transfer of experience between banks and supervision in the dissemination of good practice. There is no need to create a new organizational structure within the bank, but it is enough to enrich all three lines of risk protection with new functions and responsibilities. Today, too much attention is paid by the banking community, regulators and analysts to climate risks. The least developed in terms of methodology remains the component of corporate governance, as a result of which it is perceived as artificially attached to environmental and social aspects. Integration of ESG in banks' strategies and investment policies means an offering of ESG-related products (sustainable, green, and social bonds, green project finance etc.) for the markets. There is a danger of withdrawing debt capital from industries that are recognized as "dirty", but where the owners of the business are trying to really clean them up by modernizing technologies. Therefore, a practical solution for a modern bank is not simply a refusal to finance certain sectors of the economy, but to a greater extent a reorientation to projects that involve energy saving and energy efficiency, reducing emissions of greenhouse gas into the atmosphere, declining consumption of water and other resources.

Keywords: sustainable finance, ESG risks, banking, bank supervision

JEL Classification: G21, 28, 32

INTRODUCTION

Sustainable finance presents such a manner of business that takes into account environmental (E), social (S), and governance (G) aspects for making profound considerations for investment and credit decisions, as well as for borrowing funds from financial institutions. We observe the phenomena of "sustainabilisation", when globally banks and their investors state, with controversial impact on capital markets: growth combined with reduction. Consideration of the environment over climate change mitigation and adaptation, the general environment, such as biodiversity, pollution prevention and the circular economy. The social (S) component refers to inequality, inclusiveness, work conditions, labour conflicts, human capital development, and respect for human rights. The governance includes organisational structure, employee relations and executive remuneration. The article focused on two topics – the identification of sustainability risks and the framework for ESG risk management in banks.

By far regulatory bodies in various jurisdictions give disproportionate attention to climate risks and climate finance, even forgetting the overall environmental aspects, while the social and governance pillars are moved to the second priority. The novelty of the manuscript consists in a comparative analysis of ESG risk culture in Ukrainian banks and abroad, based on public disclosure of this information in annual reports and corporate web portals, as well as reviewing data on loan portfolios and loan products, and published corporate policies. In this regard, modifying the functions of the three lines of defence looks expedient.

Received: 25/11/2022
Accepted: 24/12/2022
Published: 30/12/2022

LITERATURE REVIEW

Firstly, we have to state a common acknowledgement by practitioners and scientists globally of the fact, that the financial position of banks depends on environmental, socioeconomic and governance variables, which are referred to as ESG factors and correspondingly ESG risks.

So far, the European Commission [4; 8; 17; 20] and the European Banking Authority (EBA) [10; 13; 16; 19] are the pioneers in the regulation of sustainability risk management, which have prepared reviews of bank innovations and supervisory practice, and developed requirements for conducting stress tests and risk assessments. The European Central Bank (ECB) developed jointly with the national competent authorities the guide with the aim of providing greater transparency regarding the ECB's understanding of the safe and prudent management of climate-related and environmental risks, to enhance the industry's awareness of and preparedness for managing climate-related and environmental risks [9]. This progress is promoted by the efforts of the Basel committee on banking supervision [5; 6]. Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the World Business Council for Sustainable Development (WBCSD) jointly developed universal guidance for enterprises on how to manage and disclose ESG risks [11].

Moreover, leading consulting and audit companies [12; 18; 23], as well as various rating agencies dedicated studies for the systematization of ESG risks, with the purpose to react on demand from the side of investors.

In particular, the study "Development of tools and mechanisms for the integration of ESG factors into the EU banking prudential framework and into banks' business strategies and investment policies" (2021) explores the integration of ESG factors into banks' risk management processes, business strategies and investment policies, as well as into prudential supervision [8]. It provides a comprehensive overview of current practices and identifies a range of best practices for the integration of ESG risks within banks' risk management processes and prudential supervision. Riso, A. (2021) presents an overview of the most recent practices and experiences in the light of the policies most recently adopted in particular by the European Central Bank and the European Banking Authority [21].

For domestic scientists, the very topic of sustainable finance is relatively new. It is worth noting the policy for the development of sustainable financing, developed in 2021 by the National Bank of Ukraine [1]. The purpose of this document is to determine the key principles for the development of sustainable financing and the actions of the National Bank of Ukraine necessary for their implementation in the banking system. However, to date, the central bank as a regulator has not outlined specific requirements for the organization and management of sustainability risks.

Among new publications, it is expedient to mention the article by I. Vasylchuk, which recognizes the term "sustainable development finance" in academic discourse and offers a definition of "sustainable finance", and describes the motivation of providers of financial capital [3]. O. Prutska reveals the content of the "sustainable financing" categories and the functions of the central bank in ensuring a sustainable financial sector and measures for the effective use of financial resources in ensuring sustainable development [2].

At the same time, the framework for sustainable risk management remains an understudied area of knowledge, especially in terms of a clear and common understanding by bankers and regulators of the nature of these risks, measurement and reporting. There is no research dedicated to the practical adoption of ESG risks as a crucial component of the general risk management framework.

AIMS AND OBJECTIVES

The purpose of the study is a structural analysis of sustainability risks by components, taking into account the specifics of the banking business.

METHODS

We ground the methodology of research on such methods as thematic analysis to understand general themes in the data and how they are communicated, and content analysis to study textual data collected from literature reviews. By generalization, writers identify the most eligible global practice, that deserves to be implemented by domestic banks and central banks as a bank supervisor.

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RESULTS

An over-emphasis on climate risk hinders a comprehensive vision and even narrows demand for related financial products. Environmental, Social, and Governance (ESG) risks include risks of non-compliance with environmental, social and corporate governance standards, which generates losses for banks. On the one hand, ESG risks have a direct impact on the bank itself when it suffers losses due to natural disasters or management admits a violation of equity standards in personnel work, or reveals a systemic misrepresentation of financial statements. Also, these risks affect the clientele of banks directly - worsening access to natural resources, a drop-in sale due to a decrease in demand for the use of coal and a decrease in profitability. An indirect result of the realization of such risks is a decline in the bank's reputation, stagnation in lending, an increase in the level of defaults, and deterioration in access to borrowed resources. By their nature, in terms of measurement and impact, such risks are closer to compliance risk. In our opinion, it would be fair to reconsider the entire hierarchy of risks in banks, since ESG risks manifest themselves through other financial risks. It would be wrong to forget about the essence of operational risk since it includes the events of natural disasters.

Sustainability risks are also referred i-n the literature as environmental, social or governance (ESG) risks. For the purpose and content of this publication, the authors use the terms "ESG risks" and "sustainability risks" as synonyms.

Profile of ESG risks varies by country, sectors of the economy, financial institutions, business line, and type of clients, as well as the level of national economy's development. ESG is necessary to distinguish between factors and the risks themselves: in the first case, we are talking about the causes of losses or other negative effects, and in the second case, about the variety of risks themselves. The European Banking Authority determines factors that are subject to uncertainty and that may have both positive or negative impacts on the financial performance or solvency of an entity, sovereign or individual [7]. The interpretation of factors becomes more understandable if we refer to the recommended list by types of risks (Table 1).

Table 1. Components of ESG risks. *(Source: [7])*

ENVIRONMENT	SOCIAL	GOVERNANCE
Climate Change	Employee Relations	Boards Structure
Waste & Pollution	Working Conditions & Safety	Staff & Executive remuneration
Resource Depletion	Local Communities	Corruption & Bribery
Greenhouse Gas Emissions	Health & Safety	Sponsorship & Lobbying
Deforestation	Conflicts	Tax discipline

ESG risks represent the probability of losses for the entity caused by the materialization of factors.

We reckon this classification should be amended. In particular, the presented typology of factors raises many questions regarding the completeness of their coverage. In particular, the Governance component lacks options for internal audit and protection of shareholder rights; in the social component there are no problems of poverty and inequality, social responsibility, and in the governance component there are no public disclosure of information, protection of the rights of shareholders, relations with stakeholders. Moreover, the inclusion of sponsorship in governance is controversial, and it would be appropriate to attribute it to the social sphere.

Sustainable corporate governance is a skeleton for environmental and social sustainability in economic entities. Within the frames of this article, we do not consider the Governance component in detail, but only mention, that this component has no taxonomy and is less measured by quantitative indicators. Otherwise, artificial constructions would have to be invented by regulators or standard developers, such as the optimal level of corruption, the degree of tax evasion, or the proportion of women in government.

A fundamental part of evaluating and measuring ESG risks in a comparable manner is to establish common definitions of ESG factors and to understand how these factors translate into financial risks that may impact institutions individually and the financial system as a whole. Actually, financial institutions rely on various international frameworks and standards defining ESG factors, while some of them use their own definitions. For the classification of factors (drivers) of sustainability risk, we may refer to Table 2.

Table 2. ESG factors that are common in the financial sector in the EU. *(Source: [11])*

	Environmental	Social	Governance
European frameworks	Greenhouse emissions Energy consumption and efficiency Exposure to fossil fuels Water, air, soil pollutants Water usage, recycling and management Land degradation, desertification, soil sealing Waste production and management (hazardous, nonrecycled) Raw materials consumption Biodiversity and protection of healthy ecosystems Deforestation	Implementation of fundamental ILO Conventions Violation of UN Global Compact Principles Inclusiveness/Inequality Exposure to controversial weapons Discrimination Insufficient whistleblower protection Rate of accidents and number of days lost to injuries, accidents, fatalities or illness Human rights policy Investment in human capital and communities Trafficking in human beings	Anti-corruption and anti-bribery policies Excessive CEO pay Diversity (unadjusted gender pay gap and board gender diversity)
Industry	Consumption of materials, energy and water Production of GHG emissions, other emissions to air and water Production and management of waste and wastewater Protection of biodiversity Research and development in low-carbon and other environmental technologies	Quality and innovation in customer relations, rights of customers to gain information about environmental issues Human rights Labour practices: human resource management and employee relations, diversity issues, gender equality, workplace health and safety considerations Access to credit and financial inclusion Personal data security	Set of rules or principles defining rights, responsibilities and expectations between different stakeholders in the governance of the entity/sovereign Executive pay Board of Directors' independence Board composition and structure Shareholder rights Internal audit Compensation Bribery and corruption Integrity in corporate conduct/conduct frameworks

In our opinion, the division of factors into two levels - European and sectoral - creates some confusion in the content. Taxation has been removed from the Governance component, but a mention of gender equality in board remuneration has been added, although this is more related to the Social sphere.

Banks face ESG risks directly in their work and indirectly through the services they provide to their customers. For example, a bank, as a lender, finances client projects in the oil or coal industry, or those sectors of the economy where child labour is widely used. If these risks are ignored, then their materialization will deteriorate the financial position of the bank and its reputation, and therefore restrict access to new funding, with pressure on liquidity.

Normally all banks are exposed to regulatory risk as the supervisor issues circulars and guidelines. Banks can worsen or strengthen their perception in the market due to its sustainability rating, so they are required to show how to manage risks effectively by disclosing information about efforts to mitigate or prevent these risks.

In last years, the dominant topic in the ESG risk universe is climate risk. KPMG experts recognize that due to the current political debates, presumably also due to materiality considerations, the focus is currently on the environmental risks and the sub-topic of climate change [9]. Nevertheless, from a standpoint of common sense, we should admit that even the consolidated struggle of the world community to prevent warming will ideally lead to a slight decrease in average temperature by 1-2 degrees. At the same time, we should not forget about the long period of plodding in the history of mankind, as well as naively ignore natural cataclysms currently and in future (for example, the eruption of a large volcano, which is not preventable, but only predictable) or a large-scale military conflict that are able to nullify these efforts. Elevating climate warming to the rank of priority tasks should not lead to the refusal of financing and the decline of those industries that contribute to climate warming, but are vital for the normal functioning of the economy. An example of such a problematic issue is the development of energy when alternative energy sources turned out to be clearly insufficient to reliably meet the needs of many countries.

Currently, researchers operate with two types of climate risk, namely, physical risks and transition risks but in some countries, regulators and banks add a third sub-type of risk – liability risk. Physical risks refer to disruption in the business of the lender or investor due to climate changes, the materialization of

(i) chronic risks, i.e. which causes a steady adverse climate change - reduction of precipitation, increase in average annual temperature, desertification, soil sealing, melting of glaciers, sea level rise, decrease in the filling of rivers, lakes and artificial reservoirs, higher frequency and bigger scale of seasonal natural disasters; and

DOI: 10.55643/fcaptp.6.47.2022.3885

(ii) acute risks (sporadic natural disasters, such as floods, typhoons, tsunamis, droughts, mudflows).

Some risk events may bear both characteristics if acute risk transforms into chronic risks: draughts and floods in many countries becoming regular. In our opinion, any bank is a source of climate risk in consuming energy for regular business; from another point, in lending banks select or filter sectors, projects and borrowers, that are the most vulnerable to climate changes (agriculture, energy generation, construction, transport, tourism), but they are treated as eligible in terms of financial soundness.

Transition risks arise if the business (sector in general, or specific borrower) is affected by radical changes in sectoral standards, and governmental policies, with stricter requirements for "cleanness" of the technological cycle and end-products, the transformation of consumers` behaviour and preferences. In the banking sector, the transition risk relates to regulatory innovations to promote sustainability or ban on unsustainable activities, and shifts in demand and supply for products. We may name this risk also as an adaptation risk because the lender and beneficiary must timely adjust to changes in the business environment, in order to survive. Correspondingly, consumers and suppliers earlier or later migrate to "greening" consumption and production. Among examples of this transformation are the shift from combustion engines to electric ones, the refusal from coal in metallurgy and heating, transfer of air companies to green fuel.

Assignment of "liability risks", as proposed by Carney, M. (2015) [4], and many other researchers, latterly fundamentally provisioned in the report "Liability risk and adaptation finance" (2021) by experts of MinterEllison's Climate Risk Governance team in collaboration with UNEP FI [16]. Liability risks are defined as a result of transmitting climate-related risks from businesses with secondary impacts on the portfolio of the lender and tertiary impacts on financial stability. Liability risk is materialized in losses due to litigations and enforcement measures, sanctions by courts, regulators, with damage to the reputation of both the investment project and investors/lenders involved, as well as with worsening profitability and access to new funding for both parties. Sustainable investors obviously reject the project itself and the recipient of funds, otherwise, further engagement will damage their reputation in the market and incompliance to eligibility criteria for funding. MinterEllison experts suggest, that legal action can act as both a driver of adaptation to physical climate-related risks and as a consequence of maladaptation or a failure to adapt. It is worth noting, that the most common position at present is the inclusion of liability risks in the broader category of "transition risks", as recommended, in particular, by European Central Bank (2020) [10]; European Banking Authority (2020) [11; 12]; European Systemic Risk Board (2020) [12].

For understanding climate risk, banks may use common classifications, such as the EU Sustainable Finance Taxonomy for the classification of climate-related hazards [23]: water, temperature, wind, and mass movements. In addition, EU Taxonomy Compass is offered for European banks for visualization, including climate change mitigation and climate change adaptation [1]. The EU Taxonomy Compass enables bankers to verify activities subject to taxonomy-eligible, objectives to be achieved. In addition, this toolkit covers social standards, that correspond to economic activity. The criteria are provided for each type of activity in the matrix. Another table "Activities by sector" serves for checking activities in the sector as taxonomy-eligible and consider screening criteria.

Banks may develop two kinds of measures to deal with climate risk – mitigation and adaptation. Mitigation should be concentrated on the determination of the reasons for the specific problem rather than focused on its materialization and consequences. The range of mitigation measures varies from templates (conventional) to extraordinary ones. An entity may diminish the effect of climate change by preventive or controlling actions, to the installation of proper equipment to reducing the emission of greenhouse gases. Among typical actions are the transfer to renewable energy, forestation, and prevention of deserting territories. For instance, in many countries, banks implement concessional loans supported by the government and international organisations for farmers operating in risker climate zones.

Adaptation means the development of preventive and reactive measures to neutralize or diminish damage and realize opportunities caused by innovations. Energy-saving house building, construction of dumbs to protect against sea-level rise, irrigation for agriculture – are examples of adaptation. In terms of consumer behaviour, adaptation is presented by efforts to save consumption of scared resources (water, energy, food, land) by households. Ideally, adaptation should be proactive rather than reactive.

The Centre for Climate Finance & Investment (CCFI) developed another climate risk «taxonomy» [23]. The main difference from EU Taxonomy is the recognition of natural capital risks and treatment of mitigation transition risks as regulatory compliance risks to reputational and litigation risks. Therefore, in addition to Physical risks and Transition risks related to adaptation and mitigation, Natural capital risks relate to the probable depletion of resources caused by the change of climate: a shortage of water as an example. The advantage of CCFI taxonomy is a clarification of the financial impact for the entity as profit margin, cash flow, capitalisation and value of the asset. More interesting is the proposed content of Natural capital risk: subsidy loss risks, depletion risks, boundary condition risks and geopolitical risks.

Compared to the environmental component, there is no consensus on the classification of social risks in the world community. This seriously hampers the development of the market for financing social projects and assessing the positive impact of investments on the social sphere. An example is such a parameter as employment. For example, the social effect may be an increase in the number of jobs or the preservation of employment at the enterprise due to technical re-equipment. However, in practice, in most cases, the purchase of the latest equipment leads to a reduction in staff by an order of magnitude. We know the precedent when the program to support small and medium-sized businesses in Ukraine provided for a significant benefit in the loan rate with an increase in the number of staff. In the enterprise, this could easily be achieved by hiring low-paid and low-skilled workers. Therefore, an adequate indicator would be the wage fund.

The main purpose of social taxonomy is to confirm that investment does not worsen the social sphere of life. This is a trap for the investor because without clear criteria, the assessment of the social effect will be opaque and incomparable. In addition, there are many more qualitative aspects in social risks than in the environmental component. For example, gender equality in wages requires taking into account the specifics of specific professions and specific industries. Such equality is easy to observe in office work, but not in the field of material production. It is also difficult to answer the question of why the traditional predominance of women in education and in the light industry is a criterion for achieving social justice. In practice, there are numerous cases where gender equality in management bodies is achieved through the appointment of women to secondary positions. In addition, it makes it difficult for the organization to select eligible candidates for leadership positions or in areas where work is associated with a threat to women's health or such work disrupts their work-life balance (business trips, irregular working hours).

We treat "Social risk" as a (i) direct financial losses due to penalties and (ii) indirect damage to the entity`s reputation due to noncompliance with social standards (equality, gender diversity, security of labour, decent working conditions, fair remuneration). This detalisation corresponds to European practice and draft of social taxonomy. The expert group "Platform on Sustainable Finance" by the order of the EU commission has been working on social taxonomy, its relationship with environmental taxonomy and regulatory environment [14]. Unification in social taxonomy is designed for making investors, lenders, rating agencies, and the general public informed about the social effect of financing. Therefore, clear criteria create a fundament for encouraging responsible finance. It is no less important that just as ecological taxonomy makes it possible to prevent "greenwashing", so social systematics should serve as a tool to counteract social camouflage. On the other hand, environmental taxonomy links to industry specifics, and social taxonomy should be universal. Ideally, appropriate social taxonomy shall identify or exclude financing harmful activities. The expert group has stated important suggestions for the understanding of social taxonomy:

- inclusion of social benefits such as access to quality healthcare or decent work;
- reference to internationally recognized standards;
- indifferent to specifics of sectors, but linked to the economic entity;
- some social aspects are not quantitatively measurable.

Experts focus on making products and services more accessible, doing no harm to efforts to achieve social objectives, including human rights.

An analysis of the experts' proposals allows us to conclude that it is technically impossible at present to develop a unified social taxonomy. Among the main obstacles, we consider regional differences in the regulation of the social sphere and in the level of material well-being in society. Therefore, the authors believe that the main emphasis should be placed not on the specification of indicators, but on the requirements for establishing such criteria, disclosure of information to stakeholders and verification by an independent party in each specific project or investment program. Without this, social taxonomy will only complicate the implementation of socially important projects.

Regarding environmental risk management, Ukrainian banks may design an internal framework with reference to the "Guide on climate-related and environmental risks - Supervisory expectations relating to risk management and disclosure" [10]. It seems tautological to mention in this document climate risks along with environmental risks. The European Central Bank and the national authorities developed this document for a common understanding of appropriate environmental risks management. The ECB expects that financial institutions:

- clearly understand the impact of environmental risks on the business and be able to make informed strategic and business decisions;
- embed environmental risks in business strategy;
- incorporate environmental risks into the overall risk management framework;
- consider environmental risks in lending and on portfolio level;

DOI: 10.55643/fcaptp.6.47.2022.3885

- estimate the potential impact of climate-related events on business continuity reputational and liability risks.

Among state-owned Ukrainian banks, only Ukrgasbank publishes an annual report on sustainable development, as this corresponds to its business strategy of green banking. The latest report for 2020 has been published on the bank's website, as Ukrainian banks are allowed not to publish annual reports under martial law, and there is no more up-to-date information on the results of 2021. In this report, Ukrgasbank publishes non-financial reporting according to GRI standards, disclosing information on the implementation of the Principles of Responsible Banking.

A comparative analysis of the Annual report on sustainable development 2020 of Ukrgasbank [26] and the Sustainability Report 2021 from Danske Bank Group. [23] reveals significant gaps in Ukrgasbank's reporting, namely the absence of:

- no independent verification of the report (in the Danish bank, the Deloitte company confirmed (i) data on ESG performance in accordance with the criteria defined by the reporting principles; (ii) the size of Danske Bank's CO2 emissions for 2021);
- no reference to the regulatory framework and regulatory requirements for disclosure of information on sustainable finance (the Danish bank refers to the Taxonomy Regulation - Delegated Act on Disclosure of Information C2021/4987 in the reporting);
- there is no description of the strategy of sustainable finance - instead, only the general business strategy of the bank and separately of the concept of eco-banking;
- no information on the risk culture, prevention of financial crimes, involvement of employees in management, and climate risk management;
- undisclosed corporate plans for the mission of bonds (green, social or sustainable), despite the fact that for several years the Special Committee of the Board of Directors has been operating in Ukrgasbank for attracting financing on the international capital market through the mechanism of issuing "green" bonds.

The analysis of the content of the reports showed that the Ukrgasbank report covers a lot of information that is not directly related to sustainable finances, namely the history of the bank, a list of financial products by customer segments, partnership with IFC, and the membership of the management bodies. That is why the volume of such a report exceeds 100 pages, while the report to the Danish bank is 52 pages.

It is very important that the report of Ukrgasbank points out the problem of the lack of information at the national level for comparison and forecasts. In particular, state agencies do not collect statistics on the amount of financing of environmental projects by individual financial institutions, each financial institution keeps its own closed statistics on such projects, and there is no aggregated information. However, there is no public information available regarding alternative renewable energy facilities, that is why for the calculation of the share of Ukrgazbank in the market of green financing of Ukraine in 2018-2020, the bank referred to own internal calculations regarding the volume of lending to green energy. Therefore, such kind of report may be treated as manipulation and ruin the trust of investors in the sustainable finance business of the bank.

More interesting to draw attention to the bank with foreign capital. In 2020, Lviv Bank implemented a sustainable smart platform designed by Icelandic company Klappir, that provides access to accurate ESG data in real-time, which is easy to systematize, analyze and act on. The Klappir platform complies with the GRI standard (Global Reporting Initiative, GRI100-400 [15]) and reporting principles (P1-10) of the UN Global Compact (UNGC), which allowed the bank to prepare its first Report in the direction of sustainable development. In 2021, the bank published its first annual sustainability report covering environmental, social and governance (ESG) components [29]. This report is concise but meaningful (32 pages), however, it is available only in English, which means that the bank`s management doesn’t account on domestic users of the information. The report which has been confirmed by Klappir contains a list of strategic goals and specific indicators in the field of sustainable development: reduction of carbon emissions, consumption of water, electricity, and fuel, reduction of waste volume, provision of personnel insurance. Also provided are key indicators with answers to questions about ESG aspects of risk. However, the emphasis in information disclosure is on the environmental aspect. In this case, we observe a conflict of interest when the consultant is both an appraiser or a verifier. In our opinion, these should be different companies.

The First Ukrainian International Bank, as a large bank with private capital, annually publishes the Progress Report for the UN Global Compact. FUIB joined the UN Global Compact community in April 2013. The structure of the report is more in line with international standards than the Ukrgazbank report. With a volume of 31 pages, the report includes a description of the strategy in the field of sustainable development, the implementation of ten principles of the UN global agreement in the strategy and activities of FUIB [28]. A separate section is devoted to ensuring human rights (corporate ethics),

educational projects for business and youth, business support during a pandemic, assistance to hospitals, and financial literacy. The report also includes advances in data security, risk management, and customer relations. The section 'Principles of labour relations' reveals the provision of equal rights and opportunities, labour protection, development and motivation of personnel, and volunteering. The report also includes sections 'Environmental principles' and 'Anti-corruption'.

The disadvantage of this report is the lack of independent verification. As a result, the report is perceived with a lower degree of confidence of users in the reliability of the data. The report is composed in line with the principles of the UN Global Compact. Thus, the disclosure structure refers to a document that is almost 10 years issued.

Today, the Ukrainian Network of the UN Global Compact in Ukraine has 114 participants, including Ukrsibbank and Alfa-bank. In 2021, Ukrsibbank became a member of the UN Global Compact. The Bank confirmed its commitment to comply with the Ten Principles of the Global Compact in the field of human rights protection, labour relations, environmental protection and anti-corruption. The report of Ukrsibbank for 2021 states [27] that the BNP Paribas Group — the main shareholder of the bank— announced the implementation of a strategic development plan until 2025. One of the three key areas of this plan is sustainable financing and the implementation of ESG practices, which should contribute to the desire of customers to transition to a reliable and predictable economy. In its activities, Ukrsibbank adheres to the practices and standards of the parent bank - BNP Paribas and the European Bank for Reconstruction and Development (EBRD), which owns 40% of the bank's shares. The bank recognizes that environmental and social sustainability is a fundamental aspect of achieving results, and therefore projects that contribute to the realization of this goal are the highest priorities of the bank's activities. Ukrsibbank assesses and monitors the environmental and social risks and consequences of its projects, as well as establishes minimum requirements for managing environmental and social impacts and risks caused by projects for which EBRD financing is spent throughout the entire period of their validity.

Ukrsibbank conducts its business and operations in accordance with the Environmental and Social Policy of the EBRD: requirements for operational efficiency and working conditions. In addition to the restrictions in accordance with the sectoral CSR policies of the BNP Paribas Group, the bank also does not participate in any financing and/or investment related to the types of activities identified in the EBRD Environmental and Social Exclusion List (EBRD Environmental and Social Exclusion List).

There are no target indicators in the report, and the text (62 pages) is oversaturated with declarations and has mostly qualitative characteristics rather than quantitative parameters. The bank's report is not verified by an independent appraiser.

Another useful source of information on the sustainable financing of Ukrainian banks is loan portfolio statistics, which were previously published by all banks in their quarterly reports, but are currently available only on the website of the National Bank of Ukraine. It is reasonable to put some kind of official classification as the basis for ranking banks according to the degree of purity of the loan portfolio. There is no global or national standard for ranging economic sectors by the level of pollution.

Therefore, we may consider two approaches to classification: highlighting the dirtiest or so-called 'brown" industries (or sub-sectors) and vice versa - compiling a list of green sectors. In both cases, the segregation would be artificial.

First, the concept of industry encompasses many sub-sectors that vary widely in their impact on climate. For example, energy combines traditional and alternative energy sources, or agriculture includes animal husbandry, which is a source of gases, and crop production, which generates oxygen for the planet. Secondly, even in the dirtiest industry, production capacities may be created that are environmentally friendly, or they manufacture equipment for air and water purification. If we simply put the stigma of 'unacceptability' on a particular industry, then this will mean its death without normal access to finance. Actually, it would a kind of unjustified discrimination. Therefore, it is more correct to rank industries based on official statistics on harmful emissions and waste. On the contrary, these sectors need large investments to modernize their capacities and reduce the negative consequences for the environment.

A similar remark applies to the social sphere. For example, agriculture has a tradition to be based on human labour from an early age, with the farmer's entire family, including his children, working together. The same pattern is observed in the retail trade sector. Therefore, it would be hypocritical to declare this industry as an area in which decent labour is not provided or children are exploited.

And thirdly, the level of pollution by industries in the context of jurisdictions varies significantly. This is determined not only by the general development of the national economy, the activity of social movements but by the established standards that enterprises must comply with. Accordingly, higher requirements for wastewater treatment or emissions into the

DOI: 10.55643/fcaptp.6.47.2022.3885

atmosphere will be in countries with a better culture of interaction between society and business. Moreover, we should keep in mind, that households are the main polluter of the environment.

Thus, it seems impossible to quantify the level of environmental friendliness or sociality, and probably inappropriate. Nevertheless, we suppose it deserves to have a look at the sectoral structure of loan portfolios of the largest banks in Ukraine and the banking system as a whole in order to detect common and specific features, as well as understand exposure to climate risk, that more-less measurable. In our opinion, agriculture, energy, construction and transport are the most exposed to climate and environmental risks in general. Table 3 shows that the banking sector largely focuses on agricultural lending. Banks with foreign capital Raiffeissen, Credit Agricole, OTP and Procredit stand out in this respect. The energy sector is concentrated in three state-owned banks, and this is likely due to lending to large state-owned corporations. The role of state banks is also decisive in lending to the sector of gas extraction. Construction is not the main sector for the absolute majority of large banks, but in terms of its share in the sectoral portfolio of the banking system, state-owned banks (Ukrexim, Privat and Ukrgas) have an excessively large concentration. Based on this, it can be concluded that it is necessary to start implementing ESG risk management in state-owned banks since banks with Western capital already apply the rules established by their parent banks.

Table 3. Structure of loan portfolios by economic sectors, September 2022. *(Source: Calculated by authors based on National bank of Ukraine data. https://bank.gov.ua/ua/statistic/supervision-statist)*

Structure of loan portfolio by sectors: banks (share >15% of portfolio)										
	Agriculture	**Extraction of oil & gas**	**Supply of electricity, gas**	**Construction**	**Production of food products**	**Real estate transact-tions**	**Wholesale trade**	**Retail trade**	**Other sectors**	**Total Loan portfolio**
UKREXIM	6.4%	7.0%	18.5%	3.0%	12.2%	8.5%	13.3%	2.4%	28.8%	100.0%
OSCHAD	16.4%	0.0%	26.1%	0.8%	5.0%	12.1%	26.7%	2.5%	10.4%	100.0%
RAIFFEISSEN	35.6%	0.0%	0.3%	0.1%	13.2%	1.9%	20.0%	6.7%	22.3%	100.0%
PRIVAT	6.3%	0.0%	0.1%	3.1%	0.3%	7.4%	16.9%	48.8%	17.2%	100.0%
TASCOM	17.9%	0.0%	7.6%	1.6%	5.0%	7.1%	15.0%	6.7%	39.2%	100.0%
KREDO	23.2%	0.0%	0.7%	5.0%	9.5%	4.4%	21.0%	3.4%	32.9%	100.0%
LVIV	18.1%	0.0%	1.2%	1.7%	7.5%	5.4%	20.3%	10.1%	35.7%	100.0%
PUMB	22.8%	0.0%	4.0%	1.2%	7.8%	3.8%	24.8%	6.2%	29.4%	100.0%
UKRSIB	11.5%	0.0%	0.4%	0.1%	12.4%	0.6%	24.7%	1.9%	48.4%	100.0%
CREDIT AGRICOLE	30.3%	0.0%	4.3%	0.1%	20.3%	3.5%	22.4%	2.6%	16.5%	100.0%
CREDIT DNIPRO	24.6%	0.0%	0.0%	0.0%	14.7%	1.6%	10.4%	1.6%	47.1%	100.0%
ALFA	11.0%	5.8%	10.3%	0.2%	11.0%	22.0%	18.3%	3.1%	18.4%	100.0%
UKRGAS	12.1%	5.7%	18.1%	4.2%	2.5%	8.2%	16.0%	6.3%	26.9%	100.0%
OTP	17.9%	0.0%	0.3%	0.1%	14.8%	5.3%	30.9%	4.2%	26.4%	100.0%
PROCREDIT	47.6%	0.0%	3.8%	0.2%	8.8%	2.3%	13.8%	0.6%	22.8%	100.0%
Total - sample of banks	15.5%	1.8%	8.4%	1.9%	7.3%	7.5%	19.1%	16.0%	22.5%	100.0%
Banking sector	15.0%	1.6%	7.8%	2.1%	7.7%	7.2%	20.6%	14.5%	23.4%	100.0%
Structure of loan portfolio by banks (share >5% of the banking sector)										
UKREXIM	5,2%	53,4%	29,1%	17,1%	19,3%	14,4%	7,9%	2,0%	15,0%	12,2%
OSCHAD	10,3%	0,0%	31,4%	3,5%	6,1%	15,7%	12,2%	1,7%	4,2%	9,4%
RAIFFEISEN	19,2%	0,0%	0,3%	0,4%	13,7%	2,1%	7,8%	3,7%	7,7%	8,1%
PRIVAT	9,9%	0,0%	0,2%	35,0%	1,0%	24,1%	19,3%	79,4%	17,3%	23,6%
TASCOM	1,8%	0,0%	1,5%	1,1%	1,0%	1,5%	1,1%	0,7%	2,5%	1,5%
KREDO	1,7%	0,0%	0,1%	2,6%	1,4%	0,7%	1,1%	0,3%	1,6%	1,1%
LVIV	0,6%	0,0%	0,1%	0,4%	0,5%	0,4%	0,5%	0,3%	0,8%	0,5%
PUMB	7,5%	0,0%	2,6%	2,8%	5,0%	2,6%	6,0%	2,1%	6,2%	5,0%
UKRSIB	1,7%	0,0%	0,1%	0,1%	3,5%	0,2%	2,6%	0,3%	4,5%	2,2%
CREDIT AGRICOLE	7,6%	0,0%	2,1%	0,1%	9,8%	1,8%	4,1%	0,7%	2,6%	3,8%
CREDIT DNIPRO	1,4%	0,0%	0,0%	0,0%	1,6%	0,2%	0,4%	0,1%	1,7%	0,8%
ALFA	3,4%	16,9%	6,2%	0,4%	6,7%	14,3%	4,2%	1,0%	3,7%	4,7%
UKRGAS	6,7%	29,3%	19,3%	16,5%	2,7%	9,5%	6,5%	3,6%	9,6%	8,3%
OTP	4,8%	0,0%	0,1%	0,3%	7,7%	2,9%	6,0%	1,2%	4,5%	4,0%
PROCREDIT	9,2%	0,0%	1,4%	0,2%	3,3%	0,9%	1,9%	0,1%	2,8%	2,9%
Total - sample of banks	91,0%	99,6%	94,4%	80,6%	83,3%	91,3%	81,5%	97,2%	84,6%	88,1%
Banking sector	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

In our opinion, the Risk Management Framework for dealing with ESG risks may be composed on the fundament of the existing organizational structure. Banks are not obliged to create a new risk management function for these risks. First, because the banks manage credit, market, liquidity, operational, and reputational risks, that are interrelated with sustainability risks. The difference is that ESG risks in case of materialization affect both the bank, and its main stakeholders (borrowers, shareholders, depositors, and employees).

Below we provide a view of the intersection of ESG risks and conventional risks, both financial and non-financial (Table 4). Indirect relation means a series of events when a sustainable risk event, through consequences, gives rise to events to materialize another risk. A direct connection is understood as the simultaneous implementation of the ESG and the traditional risk, for example, when a borrower defaults due to a ban on its activities in a given region as damaging nature, or a natural disaster disrupts infrastructure.

Table 4. Interrelations between ESG risks and conventional risk.

ESG Risks	Relation	Type of Risk	Channel for impact
Environmental aspect Social aspect Governance aspect	Direct	Credit risk	Eligible borrowers Probability of default Loan administration
	Indirect	Liquidity risk	Access to funds Cost of funds
	Indirect	Reputational risk	Confidence of depositors Attractiveness for lenders ESG rating
	Direct	Operational risk	Natural disasters Human factor Frauds
	Direct	Regulatory risk	Restrictions and bans Encouragement Penalties
	Indirect	Legal risk	Litigations
	Indirect	Compliance risk	Monitoring standards Reporting and disclosure
	Direct	Business (strategy) risk	Business model

From another point, the organization may be soundly resistant to these risks in operations, but its clients and other counterparties are highly exposed to ESG risks, and for the bank, this may be beyond its control. It may treat as a contagion effect, and the bank is able to protect itself simply by avoidance of investments in exposed sectors. However, such a primitive decision is not productive. The main reason is that even most "dirty" sectors of the economy need financing for the modernization of equipment, the adoption of new cleaning and energy-saving technologies.

Designing a proper governance structure for risk management is a crucial point for management. All functions, departments, cost and profit centres should be involved in ESG risk management, in line with the classic three lines of defence model. Obviously, all profit centres and internal project managers should consider ESG risk factors in product development, pricing and selling processes. Especially, the authorized committees of the board should take into account ESG factors in the approval of new products (Tariff Committee), as well as approval of the decision on investing, and lending (ALCO, and Credit Committees).

Unfortunately, we have to state that in domestic banks there is a serious discrepancy between the declaration and the real state of affairs in conventional risk management. The solution to this problem is greatly hampered by the lack of independent assessments of sustainability, and this problem requires pressure from the supervision agency (central bank in Ukraine). For this purpose, the management board (and Board of directors) in the commercial bank has to adopt a new Risk management policy, with a clear definition of ESG risk appetite and allocation of roles by functions.

The senior management of the bank should encourage heads of cost centres, as the first line of defence to update risk management processes, especially for qualitative risk assessment of customers and their projects.

For the second line of defence, the risk controller (chief risk officer) should develop the toolkit for assessing ESG risks, compile relevant risk inventory, and compose regular internal reporting for management bodies and engaged departments.

DOI: 10.55643/fcaptp.6.47.2022.3885

Internal audit function as the third line of defence plays a traditional role in reviewing the operation of cost and profit centres in an adequate manner with a due focus on ESG risks.

The examination of reputational risks in the know-your-customer process is an important point also because there are a lot of precedents when a client (borrower) of the bank is recognized later by regulators or government agencies as non-compliant with the environment or social standards in running a business. Therefore, the financial monitoring function (and compliance unit) in addition to review for decision-making, is obliged to conduct ongoing monitoring of counterparties, in particular, for corporate clients.

The bank management should facilitate the profiling of ESG risks with the composition of risk inventory and base on a common taxonomy.

One of the obstacles for the installation of a proper ESG risk framework is a human factor, namely proper skills and motivation. To assess and control these risks the bank1s management has to facilitate special training staff holistically, covering all three lines of defence. The remuneration scheme for managers of all levels and for subordinated staff should incorporate key performance indicators related to ESG components.

So far, European regulators recognize, that assessment of climate risks is complicated due to the lack of data available [7]. This becomes difficult to compare deliverables and performance in sustainable finance.

In addition to taxonomy and recommendations for banks, Ukrainian banks encouraged by the central bank could apply to the European experience. Since 2020, the EU exercises climate risk assessment in 10 countries represented by 29 banks, that hold about half of the EU banking sector's total assets. These banks provide raw data on non-SME corporate exposures to EU domiciled obligors [17]. The annual exercise identifies and quantifies exposures mainly to transition risk.

The National bank of Ukraine is a key promoter in developing scenarios and methodology to ensure the comparability of results. It is the best way to study the approbation of stress testing in the EU. The ECB developed a stress test toolkit in 2021, however, limited to physical risks, that were considered much more severe than transition risks over a 30-year horizon. Under conditions of stress test, EU financial institutions should analyze the impact of physical on the value of assets and credit rating of customers, take into account sector-specific modelling of PD shifts, resulted from transition climate risks, and draw special attention to the largest exposures. In 2022, the European Central Bank introduced climate risk stress testing for portfolios of banks [31]. Ukrainian banks may use this toolkit with consideration of domestic specifics in scenarios of climate change, and innovation in regulation.

It is a good practice to segregate risk management measures as preventive and responsive. In this term, ESG risk management looks similar to the operational risk framework. The choice of actions by the management depends on the scale and specifics of the individual bank. They range from setting limits, exclusion and/or inclusion criteria, e.g. for loan and investment portfolios with ESG relevance up to divestments from companies that do not meet the ESG goals.

Preventative measures mean strict compliance with corporate requirements to assess ESG risks in business processes, not only for investments but also for customer relationships. The range of decisions includes approval/disapproval of loans, investments, divesting money from projects with a poor reputation, and regular revision of the exclusion list by sectors and regions.

Responsive measures usually are more expensive for the bank, because follow by additional expenses for restoration. This range of actions includes prompt reaction on the deterioration of the ESG rating of borrowers, and investees, an increase in scale and regularity of natural disasters, or transformation of acute risk events into chronic ones. Moreover, the reaction of the bank management should be proactive on regulatory innovations, because in most cases changes in prudential rules or sector standards are not made suddenly, but after a sufficient period of consultations with engaged parties and a prolonged period for being enforced.

Transparency on ESG risk exposure and mitigation measures throughout the bank is required for long-term relations with investors and a positive image of the organization. Therefore, the bank`s management should give a clear message to concerned departments on the development of regular internal, prudential and public templates of reports, along with external verification of published data.

The study arranged by EU Commission provides an assessment of current practices for integrating environmental, social and governance (ESG) factors into the EU banking prudential framework as well as into banks' risk management, business strategies, and investment policies [5]. Among key findings are the following:

- the incorporation of ESG factors in banks' risk management, as well as prudential supervision, is at an early stage;
- regulatory efforts are crucial in promoting integration, alongside voluntary and market-based initiatives;

- there is no common and granular definition of ESG risks among banks;
- banks to assess ESG risks through both financial materiality and the material impacts on environmental and social issues ("double materiality");
- there is no mapping for interaction between ESG factors and financial risks;
- climate-related risks are usually mapped to financial risks;
- other ESG risks are mapped to reputational or strategic risks.

The National bank of Ukraine should amend requirements for disclosure of risk culture by banks. Let me remind, that on January 2022, EBA published binding standards on Pillar 3 disclosures on ESG risks [6]. The banks should inform stakeholders about ESG exposures and strategies. The standards provide a green asset ratio and a banking book taxonomy alignment ratio. This innovation is necessary for market discipline and the promotion of sustainable finance.

DISCUSSION

Measurement of ESG risks through quantitative indicators is a challenge both for banks and supervisors. Currently, risk assessment focuses on qualitative suggestions, with simplification in terms of checking processes for the availability of policies and other internal ordinances.

The Ukrainian banking community may take the position of observer and outsider or join the global process gradually. We expect, that Ukrainian banks will go ahead to study and adopt the best practice in ESG risk management, in order to be prepared for the adoption of European standards in advance. There is no necessity for Ukrainian banks to establish sustainability department as a separate function. The solution to this problem is greatly hampered by the lack of independent assessments of sustainability, and this problem requires pressure from the National bank of Ukraine.

One of the most controversial points in climate-related risk management is the segregation of sectors into dirty (brown) and clean (green). The dirty sector is normally identified by greenhouse emissions. We could consider to group economic activities as (i) sectors, mostly affected by unfavourable climate change risk, and (ii) sectors that mostly pollute nature and deplete scarce resources (especially water and energy). Nevertheless, such a suggestion looks too complicated and impractical, because most of the activities belong to both categories. As an example – agriculture, energy generation, and metallurgy.

The authors are not supporters of the ultra-radical approach, which consists in compiling a list of dirty industries as unacceptable for financing. It is precisely these industries that need modernisation. Therefore, on the government level as a high policy decision, it is required to develop a national sustainable finance program for high climate-related risk sectors (and sub-sectors).

The common task for all stakeholders is the enhancement of data coverage, accuracy, and credibility. Without this, the investment attractiveness of banks looks disputable. The taxonomy of ESG risks deserves redesign for practical usage, not only for segregation sectors on "black and white", but rather for more sophisticated classification.

CONCLUSIONS

The global trend in banking and bank supervision is the acknowledgement of considering the environmental and social impact. The mission of supervision should remain on the aggregation of sound practice in risk management, unification of terminology, and assistance to banks in the development of stress tests and scenario analysis. The holistic view of ESG risks means exit beyond climate risk, with credit risk as the most material.

Measurement of ESG risks through quantitative indicators is a challenge both for banks and supervisors. Currently, risk assessment focuses on qualitative suggestions, with simplification in terms of checking processes for the availability of policies and other internal ordinances.

One of the directions is a classification of assets and liabilities (funding) by ESG risk profiling. The most developed component is the Environmental pillar. We expect, that Ukrainian banks will go ahead to study and adopt the best practice in ESG risk management, in order to be prepared for the adoption of European standards in advance. The EU taxonomies for the "E" and "S" pillars are available for experimental implementation now. Without a doubt, such proactive innovation will only strengthen the bank's image in the market, especially in the eyes of foreign investors, and help attract targeted resources in the colossal market.

DOI: 10.55643/fcaptp.6.47.2022.3885

Integration of ESG in banks' strategies and investment policies means an offering of ESG-related products (sustainable, green, and social bonds, green project finance etc.) for the markets. Recently, international banks introduced such innovative products as ESG-linked loans or transition loans for sectors, that seek to adapt to climate change. With this innovation, the problem of restricted access to funding for projects in "dirty" sectors would be solved. It is necessary to start implementing ESG risk management in state-owned banks since banks with Western capital already apply the rules established by their parent banks.

Bankers are able to be ready for the introduction of a unified approach with the industry`s standards for climate-related. Many banks in the world have been reviewing their governance arrangements.

Supervision agency should encourage banks to introduce limits and exclusion lists for loans and investment portfolio with ESG characteristics. Significant divergence in the treatment of sustainability by jurisdictions, banks, and investors really causes information asymmetry amongst market participants. Supervisors in many countries are intensively pushing banks to develop sustainable finance as a modern business model. By the pressure of supervisors, the shareholders of banks shall incorporate KPIs, related to ESG, to go beyond the formula of "risk-return".

In collaboration with rating agencies and other assessors for the verification of sustainability, banking community regulators should unify the disclosure of data related to ESG risks. Market participants expect taxonomy would support the positive perception of ESG activities.

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DOI: 10.55643/fcaptp.6.47.2022.3885

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УПРАВЛІННЯ ESG-РИЗИКАМИ В УКУРАЇНСЬКИХ БАНКАХ

Метою дослідження є структурний аналіз ризиків стійкості за компонентами з урахуванням специфіки банківського бізнесу. Основними результатами дослідження є впорядкування підходів до систематики екологічних, соціальних та управлінських ризиків, пропозиції щодо створення додаткового механізму управління такими ризиками, визначення ключової ролі контролюючого органу в стимулюванні банків до трансформації. Українські банки все ще перебувають на початку шляху до повноцінної бізнес-моделі, заснованої на принципах сталого фінансування. Культура ризик-менеджменту вимагає уніфікації та вільної передачі досвіду між банками й нагляду в поширенні передового досвіду. Немає необхідності створювати нову організаційну структуру всередині банку, але досить збагатити всі три лінії захисту від ризиків новими функціями й обов'язками. Сьогодні банківською спільнотою, регуляторами та аналітиками занадто багато уваги приділяється кліматичним ризикам. Найменш розвиненою з точки зору методології залишається складова корпоративного управління, унаслідок чого вона сприймається як штучно прив'язана до екологічних і соціальних аспектів.

Інтеграція ESG у стратегії банків та інвестиційну політику означає пропонування ринків продуктів, пов'язаних із ESG (стійкі, зелені та соціальні облігації, зелене проєктне фінансування тощо). Існує небезпека виведення боргового капіталу з галузей, які визнані «брудними», але де власники бізнесу намагаються реально їх очистити, модернізуючи технології. Тому практичним рішенням для сучасного банку є не просто відмова від фінансування певних галузей економіки, а більшою мірою переорієнтація на проєкти, які передбачають енергозбереження та енергоефективність, скорочення викидів парникових газів в атмосферу, зниження споживання води й інших ресурсів.

Ключові слова: стійке фінансування, ризики ESG, банківська справа, банківський нагляд

JEL Класифікація: G21, 28, 32