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Global Economic Challenges, Esg and The Risk Management Role of Banks

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ABSTRACT

The contemporary financial system faces increasing uncertainty as a result of climate issues, geopolitical developments, technological progress, and evolving social expectations. These challenges have significantly expanded the spectrum of risks faced by commercial banks and have highlighted the need to reconsider traditional approaches to risk management. In this context, environmental, social, and governance (ESG) factors are no longer perceived as secondary or reputational issues, but increasingly influence the financial stability and strategic sustainability of banking institutions.

This article explores how ESG principles have become integrated into the risk management systems of commercial banks and how they transform established risk assessment and decision-making practices. The study traces the evolution of ESG from the concept of corporate social responsibility and emphasizes its transition into a practical management framework. A particular focus is given to ESG banking, a field where financial institutions fulfill a dual role. They are subject to investor scrutiny while actively steering sustainable development through their lending and investment strategies. The research delves into non-financial risks, with a special emphasis on climate and governance concerns. These risks are distinguished by their indirect transmission channels, considerable uncertainty, and long-term ramifications.

Using international guidelines such as the UN Sustainable Development Goals and TCFD recommendations, the article demonstrates how ESG risks are transmitted into traditional banking risk categories, including credit, operational, market, reputational, and strategic risks. Special emphasis is placed on the relevance of climate risks for emerging economies, where environmental vulnerability may significantly affect borrowers' financial performance.

The study argues that effective ESG risk management cannot rely solely on classical quantitative methods. Instead, it requires a combined approach that integrates financial indicators with expert judgment, qualitative analysis, scenario modeling, and ESG ratings. The use of ESG ratings is considered as a practical tool for improving credit portfolio diversification and reducing exposure to environmentally harmful sectors. The findings confirm that the integration of ESG principles into bank risk management enhances resilience, supports more balanced decision-making, and contributes to long-term sustainable development.

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ინფორმაცია სტატიის შესახებ

საკვანძო სიტყვები:
ESG რისკები, მდგრადი განვითარება, ESG საბანკო საქმე, კლიმატური რისკები, რისკების მართვა, ESG რეიტინგები, კომერციული ბანკები

აბსტრაქტი

თანამედროვე ფინანსური სისტემა მზარდი გაურკვევლობის წინაშე დგას კლიმატური საკითხების, გეოპოლიტიკური განვითარების, ტექნოლოგიური პროგრესისა და სოციალური მოლოდინების ცვლილების შედეგად. ამ გამოწვევებმა მნიშვნელოვნად გააფართოვა კომერციული ბანკების წინაშე არსებული რისკების სპექტრი და ხაზი გაუსვა რისკების მართვის ტრადიციული მიდგომების გადახედვის აუცილებლობას. ამ კონტექსტში, გარემოსდაცვითი, სოციალური და მმართველობითი (ESG) ფაქტორები აღარ აღიქმება მეორეხარისხოვან ან რეპუტაციის საკითხებად, არამედ სულ უფრო მეტად მოქმედებს საბანკო ინსტიტუტების ფინანსურ სტაბილურობასა და სტრატეგიულ მდგრადობაზე.

ეს სტატია იკვლევს, თუ როგორ ინტეგრირდა ESG პრინციპები კომერციული ბანკების რისკების მართვის სისტემებში და როგორ გარდაქმნიან ისინი რისკების შეფასებისა და გადაწყვეტილების მიღების დამკვიდრებულ პრაქტიკას. კვლევა აკვირდება ESG-ს ევოლუციას კორპორაციული სოციალური პასუხისმგებლობის კონცეფციიდან და ხაზს უსვამს მის გადასვლას პრაქტიკული მართვის ჩარჩოში. განსაკუთრებული ყურადღება ეთმობა ESG საბანკო საქმიანობას, სფეროს, სადაც ფინანსური ინსტიტუტები ასრულებენ ორმაგ როლს. ისინი ექვემდებარებიან ინვესტორების კონტროლს, ხოლო აქტიურად წარმართავენ მდგრად განვითარებას თავიანთი სესხებისა და საინვესტიციო სტრატეგიების მეშვეობით. კვლევა ჩაულრმავდება არაფინანსურ რისკებს, განსაკუთრებული აქცენტით კლიმატისა და მმართველობით საკითხებზე. ეს რისკები გამოირჩევა არაპირდაპირი გადაცემის არხებით, მნიშვნელოვანი გაურკვევლობითა და გრძელვადიანი შედეგებით. საერთაშორისო სახელმძღვანელო პრინციპების, როგორიცაა გაეროს მდგრადი განვითარების მიზნები და TCFD-ის რეკომენდაციები, გამოყენებით, სტატია აჩვენებს, თუ როგორ გადადის ESG რისკები ტრადიციულ საბანკო რისკების კატეგორიებში, მათ შორის საკრედიტო, ოპერაციულ, საბაზრო, რეპუტაციულ და სტრატეგიულ რისკებში. განსაკუთრებული ყურადღება ეთმობა კლიმატური რისკების შესაბამისობას განვითარებადი ეკონომიკის მქონე ქვეყნებისთვის, სადაც გარემოსდაცვითი დაუცველობა შეიძლება მნიშვნელოვნად აისახოს მსესხებლების ფინანსურ მაჩვენებლებზე.

კვლევაში ამტკიცებენ, რომ ESG რისკების ეფექტური მართვა არ შეიძლება დაეყრდნოს მხოლოდ კლასიკურ რაოდენობრივ მეთოდებს. ამის ნაცვლად, ის მოითხოვს კომბინირებულ მიდგომას, რომელიც აერთიანებს ფინანსურ ინდიკატორებს ექსპერტების შეფასებასთან, თვისებრივ ანალიზთან, სცენარის მოდელირებასთან და ESG რეიტინგებთან. ESG რეიტინგების გამოყენება განიხილება, როგორც პრაქტიკული ინსტრუმენტი საკრედიტო პორტფელის დივერსიფიკაციის გასაუმჯობესებლად და გარემოსთვის მავნე სექტორების ზემოქმედების შესამცირებლად. დასკვნები ადასტურებს, რომ ESG პრინციპების ინტეგრირება საბანკო რისკების მართვაში ზრდის მდგრადობას,

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ხელს უწყობს უფრო დაბალანსებულ გადაწყვეტილებების მიღებას და ხელს უწყობს გრძელვადიან მდგრად განვითარებას.

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1. Introduction and literature review

The world is experiencing a rapid and substantial rise in uncertainty, fueled by a web of interconnected issues including geopolitical instability, climate crises, new disease outbreaks like COVID-19, and an increase in cyber risks stemming from accelerated digitalization. This heightened unpredictability has consequently amplified the significance and focus on corporate risk management.

Companies that successfully implement effective risk management practices gain tangible advantages. This continuous and well-coordinated process forms the foundation for informed decision-making, strategic vision development, and the successful achievement of corporate objectives. Consequently, awareness of potential opportunities and threats among all stakeholders improves, operational performance is enhanced, employee and customer safety is ensured, competitiveness is strengthened, and, ultimately, the company's market value increases.

To manage a company effectively and create sustainable value, risk management must be embedded at all organizational levels. This process not only protects existing value but also contributes to its growth. Essential guidelines dictate a thorough methodology, a systems-based mindset, readiness for transformation, the active participation of every team member, a commitment to ongoing refinement, and an awareness of both people and the organizational environment. The foundation for all these actions must be solid, factual information.

As noted by the Institute of Risk Management (IRM), the understanding of risk has a long history dating back to primitive societies. Early human interaction with unpredictable events manifested in simple games of chance, such as dice games, where outcomes were determined purely by randomness. Over time, these games evolved into more complex intellectual strategies, such as chess and checkers, where conscious risk management through rational planning complemented the element of chance.

According to V. Covello and J. Mumpower, early attempts to conceptualize risk can be traced back to the cultural traditions of ancient Near Eastern civilizations. In Mesopotamia, for example, perceptions of risk were closely linked to religious rituals and divination, where forecasting the future played a central role in decision-making. In Ancient Greece and Rome, risk became a subject of philosophical reflection, as thinkers sought to explain theoretically the nature of uncertainty and its influence on human life, social structures, and political processes.

P. L. Bernstein argues that a major breakthrough in understanding the origins of the risk concept occurred through its connection with the adoption of the Indo-Arabic numeral system. He emphasizes that mathematical advances during the Renaissance and the emergence of probability theory in the seventeenth century made it possible to shift from an intuitive perception of randomness to its scientific and quantitative analysis. These developments laid the foundation for the further evolution of approaches to assessing and managing uncertainty.

F. Kloman suggests that risk should be examined within a broad historical context, as the concept did not emerge in isolation but was shaped by significant events that transformed the course of human civilization. According to the author, risk perceptions have been molded by a range of influences. These encompass global and local military engagements, technological breakthroughs, innovations in communication and transport, economic crises like

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the Great Depression, worldwide environmental concerns, and the advent of nuclear technology and arms. Political shifts of the 20th century, including the rise and fall of communism, alongside later financial crises and the growth of environmental advocacy, were also instrumental.

These processes resulted in risk becoming a constant companion across nearly all spheres of human activity, clearly demonstrating the inseparable link between uncertainty and development.

Ideas about the nature of risk are also supported by Uzbek scholars. A. M. Islamov argues that under modern conditions risk should not be viewed solely as a negative factor but rather as a natural companion of development that arises when economies or societies transition to new stages. He emphasizes that uncertainty generated by technological shifts, reforms, globalization, and institutional transformations encourages organizations to rethink their approaches and seek innovative solutions. K. Kh. Umurzakov further develops this idea, noting that in practical activities-particularly in the banking sector-risk represents a dynamic and continuously evolving process. It changes alongside customer behavior, market dynamics, government reforms, and global trends. Therefore, effective risk management requires not only calculations and models but also the ability of management to perceive environmental changes, identify emerging opportunities and threats, and adapt quickly.

According to D. M. Tojiboeva, risk represents a firm's response to incomplete information and unforeseen shifts in the external environment. She emphasizes that within the context of Uzbekistan's rapid economic development, risk is now a fundamental aspect of entrepreneurship, prompting businesses to boost their flexibility, be more attuned to partner concerns, and readily deploy innovative solutions.

Both Kloman's research and the findings of Uzbek scholars demonstrate that risk is not a static category but a living phenomenon that evolves together with society. The more dynamic the changes in technological, economic, political, and environmental spheres, the more complex risk becomes and the deeper its understanding must be.

Thus, the concept of risk has evolved from a basic awareness of the unpredictability of the world to the development of sophisticated scientific and applied approaches aimed at analyzing and controlling uncertainty in social, economic, technological, and political processes.

2. Methodology

The way commercial banks approach risk management is undergoing significant transformation. This evolution is driven by two main forces: increasingly stringent regulatory and oversight measures, and a series of new global issues that have fundamentally reshaped the economic landscape in recent decades. A particularly prominent challenge is climate change, which is accelerating the global transition to an economy with lower carbon emissions. Consequently, a fresh strategic direction is emerging, promoting the adoption of sustainable development ideals and their gradual integration into financial operations. To grasp how a bank focused on sustainability handles its risks, we must first define what this concept entails, trace its historical development (as shown in Figure 1), and pinpoint the risks banks encounter as ESG demands grow.

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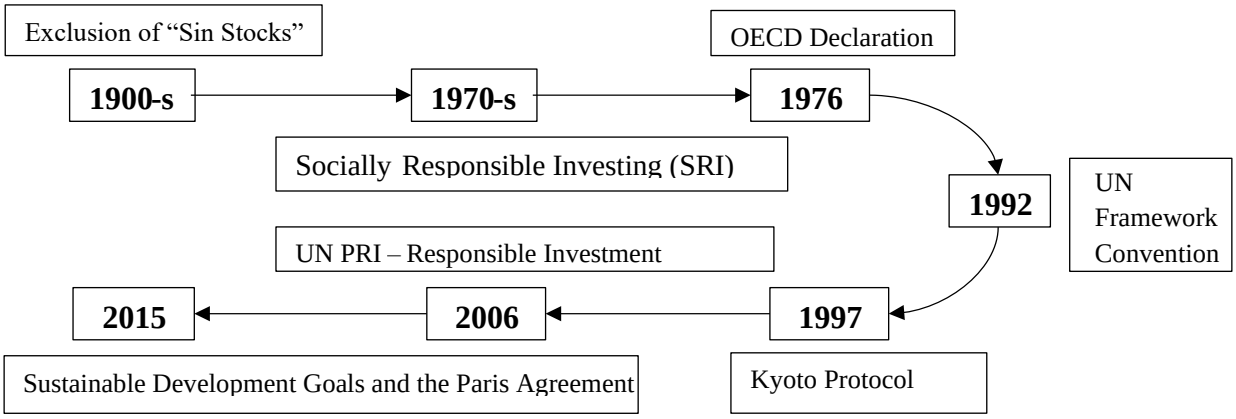

Source: compiled by the author.

Figure 1. Historical Background and Key Documents of the Sustainable Development Concept

In recent years, the financial sector has shown growing interest in ESG issues-environmental protection, social responsibility, and corporate governance-which has stimulated active academic research. This has led to the emergence of a new interdisciplinary field often referred to as sustainability science. Despite theoretical advancements, the concept of sustainable development remains flexible and open to interpretation depending on industry, regulatory frameworks, and research methods. In general terms, sustainable development represents an economic and social model in which current needs are met without compromising the ability of future generations to meet their own needs.

Financial institutions must establish robust systems to proactively detect, assess, and continuously monitor new risks stemming from environmental, social, and governance (ESG) factors. True sustainable progress depends on harmonizing efforts in three interconnected areas: minimizing adverse environmental impacts, improving social responsibility, and reinforcing sound corporate governance. Academic discourse reveals that ESG is a multifaceted concept. While the core elements are environmental, social, and governance, some scholars broaden this scope to encompass institutional resilience, cultural influences, or technological preparedness. Alternative academic viewpoints define sustainability as a reflection of shared societal values (Milbrath), a framework of global principles designed to ensure safety (Upham), or a result driven by social fairness and equitable access to economic and social prospects (Giddings).

To effectively manage banking risks, the varied understandings of ESG necessitate more than just acknowledging these factors; they must be integrated into current risk evaluation processes. Financial institutions need to update and adjust their internal risk assessment models to account for new uncertainties stemming from climate change, changing societal trends, governance practices, and broader economic transformations. The United Nations offers a widely recognized structure for the core elements of sustainable growth through its 17 Sustainable Development Goals (SDGs), which are closely aligned with the Paris Climate Agreement's objectives. Collectively, these goals act as a thorough standard covering environmental, social, and governance aspects. Within banking analysis, the SDGs can be aligned with the key areas of sustainability, a connection illustrated in Table 1.

Table 1. Alignment of the UN Sustainable Development Goals with the Core Elements of the Concept

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Key Elements of the Sustainable Development Concept	UN Sustainable Development Goals
Environmental	Sustainable production and consumption patterns, climate change mitigation, the protection and restoration of marine ecosystems, as well as the conservation of terrestrial ecosystems.
Social	Eradication of extreme poverty, prevention of hunger, ensuring health and a high quality of life, access to quality education, promotion of gender equality, guaranteed access to safe water and sanitation, development of affordable and clean energy, support for decent work and sustainable economic growth, promotion of industrial development, innovation and infrastructure modernization, reduction of social and economic inequalities, creation of sustainable and inclusive urban environments, as well as the strengthening of peace, justice, and effective institutions.
Corporate Governance	Partnerships for Sustainable Development

Source: compiled by the author based on materials from [13].

It's important to note that the UN's stated goals don't perfectly mirror the conventional view of sustainable development. This is because the UN's agenda heavily prioritizes environmental and social concerns, while corporate governance aspects receive considerably less focus. While this imbalance is rooted in the UN's established mission, it also limits the comprehensive analytical depth of the sustainability framework. Furthermore, it's crucial to understand that current ESG principles didn't emerge in a vacuum. Their origins can be traced back to the early stages of the corporate social responsibility (CSR) concept. CSR was founded on the principle that businesses are accountable for the societal impact of their activities and should factor in the interests of various stakeholders, incorporating environmental, social, and economic factors into their decision-making processes. Although CSR and ESG share some conceptual overlaps, they are distinct and should not be used interchangeably. The primary differences between them are detailed in Table 2.

Table 2. Comparison of the ESG Concept and CSR Theory

Comparison Criterion	ESG	CSR
Primary Component	Environmental	Social
All Components	Environmental, Social, and Governance (Quality of Governance)	Environmental, Social, and Economic
Source of Origin	Pursuit of Competitive Advantage	Stakeholder Demands and Requirements
What It Reflects	Interests and Expectations of Society	Interests and Expectations of Stakeholders
Primary Beneficiary	Society	Business

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Source: compiled by the author

Examining the data in Table 1.2 reveals that while CSR and ESG share some common ground, their core aims diverge significantly. ESG is geared towards long-term strategic planning, heavily influenced by shifting societal needs and desires. Conversely, corporate social responsibility primarily addresses the concerns of specific stakeholder groups and tends to be more hands-on and practical.

However, CSR can be seen as a foundational step leading to the development of the ESG agenda. It was under the CSR umbrella that environmental and social factors first gained recognition as vital aspects of business operations, directly impacting sustainability and a company's image. These aspects were later integrated into the ESG framework, where they were significantly expanded and organized. Therefore, while individual ESG elements existed in earlier theories, they have since gained greater importance and necessitate separate examination, particularly for bank risk management and long-term strategic growth.

The development of the ESG concept has been largely driven by ethical and moral values. Even without legal mandates, these values establish informal guidelines and shared expectations, the violation of which can lead to substantial reputational and social risks. In today's sustainable development landscape, ignoring ethical considerations is no longer permissible, as organizations committed to sustainability must adhere not only to formal regulations but also to unwritten social conduct standards.

This point is particularly crucial for the banking sector, where public trust is fundamental to financial stability and successful organizational functioning.

The World Bank views sustainable development from a financial perspective as the skillful stewardship of a collection of assets that fuel future economic and societal well-being. This asset base includes not just physical resources but also the value of people and the environment, both crucial for enduring economic strength. The Bank's framework suggests that sustainable progress is only possible if physical, human, and natural assets are not merely preserved but actively improved over time. This sustainability paradigm rests on the concepts of "net savings" and "net investment." Here, "net" signifies more than just adding to an asset total; it accounts for the depletion of natural resources, changes in the quality of human capital, and the expenses incurred to lessen environmental and social damage. Consequently, sustainability represents an economy's ability to simultaneously safeguard the natural world, advance human potential, and drive economic growth.

Building on our previous conversation, the foundational elements of ESG-environmental care (E), social responsibility (S), and sound corporate leadership (G)-are intrinsically linked to the core tenets of sustainable growth. It's crucial to understand that ESG isn't just a set of aspirational goals. Instead, it operates as a practical management approach, compelling businesses to integrate environmental, social, and governance factors into their daily activities, strategic planning, and methods for handling risks.

For investors, ESG has become a key framework for assessing business quality. By analyzing sustainability indicators, market participants can evaluate how effectively a company manages resources, addresses social risks, engages with stakeholders, and structures its internal governance processes. To gauge a company's sustainability maturity comprehensively, the United Nations Commission on Sustainable Development recommends categorizing relevant indicators into four domains: social, economic, environmental, and institutional. Within this framework, ESG-focused banking gains prominence, representing the structuring of financial entities' operations according to sustainable development tenets.

For banks, this implies far more than the implementation of environmentally efficient technologies or the promotion of ethical corporate values; it requires a systemic reconfiguration of risk management frameworks, encompassing ESG risk identification and measurement, as well as the incorporation of non-financial criteria into credit allocation, investment strategies, and long-term planning processes.

Banks play a dual role in this shift. Firstly, they are evaluated by investors and market players, pushing them to constantly improve their ESG performance to protect their reputation, market trust, and access to capital. Secondly, as financial intermediaries, banks significantly impact economic development by directing capital,

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essentially determining which projects are funded and which are not, thus either encouraging or limiting the adoption of sustainable practices in the real economy. Beyond simply reacting to external ESG assessments, financial institutions actively shape the investment climate. By incorporating sustainability into their financing decisions, banks can prioritize firms aligned with sustainable development, creating real incentives for borrowers to boost their ESG standards. Consequently, the banking sector serves as a key channel for spreading sustainable norms and responsible business practices across the corporate landscape. Moreover, the influence of banks on counterparties may also take on a regulatory character. Increasingly, financial institutions structure their relationships with clients based on compliance with fundamental ESG principles. In such cases, sustainable practices are no longer merely recommendations but become de facto mandatory requirements for continued cooperation, significantly accelerating the diffusion of ESG culture [12]. Operating within the sustainable development paradigm inevitably generates new requirements for banks' internal processes, particularly with regard to risk management systems. Credit institutions face the need not only to account for traditional financial threats but also to integrate qualitatively new, specific ESG risks into their models. These risks are characterized by complexity, an interdisciplinary nature, and a high degree of uncertainty.

Among the spectrum of ESG-related risks relevant to commercial banks in Uzbekistan, climate-related risks hold a particularly significant position. Over the past several years, these risks have attracted growing attention both in the international arena and within domestic regulatory discourse. In the Uzbek context, the urgency of addressing climate risks is intensified by the economy's pronounced exposure to climate change impacts, including increasing water stress, rising average temperatures, heightened probability of droughts, land degradation processes, and the sensitivity of the agricultural sector to environmental shocks.

In the national financial sphere, the identification and classification of climate risks are steadily advancing, mirroring global benchmarks like the Task Force on Climate-related Financial Disclosures (TCFD) guidelines. This framework generally categorizes climate-related risks into two main groups.

• The direct consequences of climate phenomena and extreme weather events constitute physical risks. In Uzbekistan, key examples include water scarcity due to droughts, increased heat, shrinking lakes and rivers, sandstorms, and land degradation. These issues can impair the financial standing of borrowers and reduce the value of bank loans.

• Transition risks arise as the economy adapts to the requirements of low-carbon development. They include changes in regulatory frameworks, the introduction of "green" standards, shifts in industrial structure, technological modernization, increased requirements for environmental disclosure, and evolving investor expectations. For Uzbek banks, this implies the need to consider a potential decline in the investment attractiveness of "brown" industries, reduced support for projects with a high carbon footprint, and increased attention to borrowers' ESG ratings.

Thus, for the banking sector of Uzbekistan, climate risks represent one of the most significant components of the ESG agenda, requiring adjustments to creditworthiness assessment processes, revisions of risk management mechanisms, and the gradual adoption of international climate disclosure practices.

For banks, these risks translate into threats such as declining collateral values, deterioration in credit portfolio quality, an increased probability of defaults, as well as reputational and strategic losses.

However, the climate dimension is not the only source of emerging challenges. Within the governance (G) dimension, compliance risk has become increasingly prominent, referring to the risk of losses arising from violations by a bank or its management of legal requirements, internal corporate rules, ethical standards, and principles of transparency. Under the ESG agenda, requirements related to business reputation, the quality of internal control systems, anti-corruption policies, and the protection of customer rights have become significantly more stringent.

Thus, for financial institutions, ESG risks constitute a multidimensional risk environment that shapes a new managerial reality. An effective risk management system in a bank can no longer be limited to traditional

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financial indicators; it must take into account the interdependence of environmental, social, and governance factors, which increasingly determine the competitiveness and resilience of credit institutions.

The activities of commercial banks are, to varying degrees, sensitive to all types of climate risks, with the impact of these threats most often manifesting indirectly, through the transformation of risk categories traditionally familiar to banks [7]. This influence is clearly illustrated in Figure 1.5, which demonstrates the channels through which climate factors are transmitted into the conventional banking risk framework.

Consequently, ESG risks-including climate-related risks-are generally realized indirectly, acting as catalysts for the growth of credit, market, operational, reputational, and strategic risks. It is precisely this characteristic-the absence of a direct causal pathway-that makes their identification and assessment more complex and necessitates the incorporation of new analytical procedures into bank risk management systems.

3. Results

Taking into account this mechanism through which threats materialize, it can be argued that the tools used to assess and manage ESG risks partially overlap with those applied to traditional banking risks. This is explained by the fact that the ultimate effects of climate-related and other ESG factors are reflected in the same indicators, such as deterioration in asset quality, a decline in collateral values, changes in market parameters, and an increased likelihood of operational incidents.

However, despite this partial overlap in assessment algorithms, ESG risks require an expanded analytical approach, as they involve:

- consideration of long-term scenarios of changes in the external environment;
- integration of non-financial factors into risk assessment models;
- analysis of climate-related stress scenarios;
- consideration of regulatory requirements and industry standards for ESG disclosure.

Therefore, while the basic risk management methodology remains applicable, addressing ESG risks necessitates additional tools focused on anticipating systemic changes and the long-term implications of sustainable development.

It's widely recognized that a cornerstone of any risk management framework is the process of evaluating risks, coupled with the judicious choice of the most suitable techniques and strategies for this evaluation. While the foundational principles in this domain seem quite settled – typically, risk assessment methodologies are categorized as either broad or specialized – a closer look reveals nuances. The broader categories encompass statistical, expert-driven, and analytical techniques, as detailed in Table 3 [8]. Each of these approaches comes with its own set of strengths and weaknesses, underscoring the need for a deliberate selection of tools based on the characteristics of the risks under scrutiny and the data at hand.

Table 3. Advantages and Disadvantages of Different Risk Assessment Methods

Methods	Advantages	Disadvantages
1	2	3
Statistical	Aggregated risk assessment; consideration of diversification effects; the ability to forecast and model various scenarios.	Probabilistic nature of the assessment

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Expert-based		Consideration of the external environment; assessment of the impact of systemic risks.	Subjectivity of assessment; reliance on qualitative characteristics; the need to ensure expert independence.
Analytical	Fundamental	**Multifactor assessment**	**Use of quantitative indicators only**
	Tehnical	**Accounts for human psychological factors**	**Limited applicability**

Source: compiled by the author

Statistical methods excel at producing a well-supported and detailed overall assessment of risk exposure. Instead of just adding up individual risks, this approach accounts for how different risks influence each other, offering a more realistic picture of their combined impact than simpler evaluation techniques can provide.

Methods relying on expert opinion are especially useful for analyzing external risks, particularly those that could escalate into widespread problems for the economy or financial sector. The input of seasoned professionals helps identify and gauge risk drivers that are hard to quantify and aren't captured in existing statistical information.

Core analytical techniques primarily concentrate on assessing an entity's financial health using a range of numerical metrics and financial ratios. However, an over-reliance on standardized and structured data can lead to overlooking qualitative factors, potentially resulting in incomplete or skewed findings.

Considering these factors, a comprehensive risk assessment framework should ideally utilize a blend of diverse approaches, allowing for the incorporation of both numerical data and subjective insights. An example of this synergistic approach is the merging of fundamental analysis with expert opinions, which results in a multifaceted evaluation of the subject under scrutiny. This integrated method finds broad application in creditworthiness assessments, leveraging numerical data alongside expert insights to encompass both quantifiable attributes and subjective, context-specific elements [5].

Previously mentioned, risk assessment plays a crucial role beyond its analytical function, acting as a fundamental component within managerial decision processes and thus anchoring the entire risk management framework. Crucially, any robust risk management strategy must adhere to key principles, with effectiveness being of utmost importance. An effective system can be identified by these defining characteristics:

– the capacity to achieve an optimal trade-off between risk exposure and expected returns;
– the adoption of a consistent and structured approach to managerial decisions;
– robustness in the face of external shocks and flexibility in responding to changing environments;
– improved governance quality within credit institutions through the implementation of strong risk control and monitoring mechanisms.

Attaining these characteristics necessitates the use of carefully selected risk management instruments, since each category of risk requires specific techniques for its identification, evaluation, and mitigation.

Figure 2 illustrates the most commonly applied risk management approaches. Many of them may be described as universal or baseline methods, given their applicability across a wide range of risk types. Such methods include diversification, continuous monitoring, the establishment of risk limits, and the transfer of risk to third parties. Despite their general nature, these instruments take on distinct characteristics in different contexts, depending on the specific risk profile involved and the performance requirements imposed on the risk management system as a whole [11].

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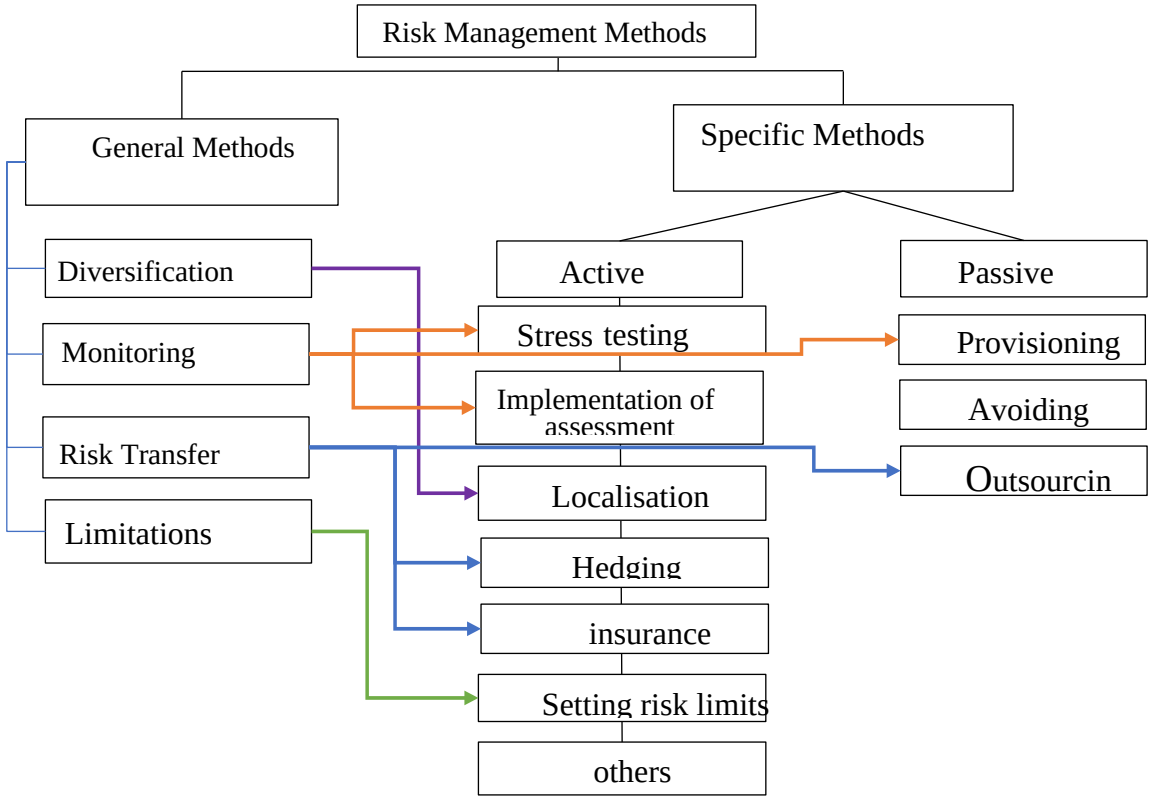

Source: compiled by the author

Figure 2. Risk Management Methods of a Commercial Bank

Active risk management techniques are based on targeted influence on the source of risk itself. This category encompasses a range of proactive instruments, including the setting of risk exposure limits, the containment or isolation of individual risk exposures, the employment of hedging tactics, and forward-looking scenario review via stress-testing structures. Moreover, active administration increasingly depends on complex measurement instruments such as Value at Risk (VaR), sharper quantitative frameworks, and additional advanced analytical approaches. In contrast, passive risk management approaches are predominantly employed after risk events have already occurred. These methods typically involve the accumulation of reserves, deliberate avoidance of certain risk-bearing activities, the transfer or sharing of risk with external parties, the outsourcing of selected operations, and related mechanisms aimed at mitigating realized losses.

Concurrently, broad (universal) and particular risk oversight tools are closely linked and frequently employed together. For instance, credit portfolio spreading can be enacted by pinpointing and restricting outlays linked to sectors or territorial areas showing elevated quantities of non-performing credit. Similarly, risk tracking routines might at the same time include provision-setting steps and strain-testing activities, emphasizing the reinforcing aspect of various oversight mechanisms.

The steady incorporation of general and focused risk administration approaches allows financial institutions to consider the unique characteristics of separate risk types and, consequently, to deploy funds more efficiently to address the most significant risk prospects. The selection of specific methods is largely determined by the risk policy pursued by a credit institution. If a bank focuses on profit maximization without prioritizing

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the level of risks assumed, such an approach may be described as an "aggressive" policy. Under these conditions, the emphasis inevitably shifts toward enhanced risk monitoring and regular stress testing. By contrast, a classical (conservative) risk management model aims to maintain risk exposure at the lowest possible level. In this case, instruments such as risk limitation and the transfer of part of the risks to external market participants are primarily applied.

The advancement of risk management methodologies is largely stimulated by the appearance of new categories of threats, as well as by the ongoing tightening of regulatory standards. This trajectory is clearly observable in the evolution of banking supervision: in its early phase, regulatory attention was concentrated mainly on credit risk (Basel I); it was later extended to cover market and operational risks (Basel II); and in subsequent stages, the regulatory focus shifted toward the integrated management of all significant risk exposures (Basel III and later amendments).

In the current regulatory environment, increasing emphasis is placed on non-financial risks, which differ from conventional risk types in that they cannot be easily measured using purely quantitative techniques. As a result, their assessment necessitates the use of mixed methodologies that combine quantitative indicators with qualitative analysis. Consider, for instance, how established practices for diversifying investment holdings are being re-examined. Banks are now taking into account more than just a borrower's financial data. They are also evaluating their long-term strategic outlook, their reliance on government support, the environmental sustainability of their production methods, and other non-financial considerations.

The integration of ESG principles has led to significant changes in the overall scope of banking operations and in the methodologies employed for risk assessment and mitigation. Several defining features of ESG risks directly influence the selection of appropriate management instruments:

- The non-financial nature of these risks necessitates the use of qualitative indicators.
- They represent a wide array of potential hazards that can surface in different parts of a bank's operations.
- The regulatory environment for ESG risks is still in a formative stage and has not yet reached full maturity.

Given these characteristics, it appears appropriate to apply a unified approach to the assessment of ESG risks, with ESG ratings serving as a key element of this framework. Such ratings enable a comprehensive evaluation of companies' resilience to long-term environmental, social, and governance-related changes. At present, numerous international agencies produce ESG ratings, and such assessments are increasingly being developed for banks as well. However, the absence of a single standardized methodology results in variations in the weighting of material factors across rating providers, which limits the comparability of ESG rating outcomes. When banks rely on external ESG ratings, it is advisable to complement them with managerial expert judgment. This combined approach allows rating results to be adjusted to reflect the specific characteristics of a client's business model, industry affiliation, and unique operational features.

The application of ESG rating systems opens up additional instruments for the management of banks' credit portfolios. In particular, portfolio diversification may be structured around borrowers' sustainability profiles, reflecting their environmental efficiency, the scope and effectiveness of social programs, and the robustness of corporate governance arrangements. The adoption of this methodology facilitates the amelioration of ESG-related risks and serves to preclude undue exposure to sectors characterized by a high prevalence of "brown" activities, namely industries dependent on ecologically detrimental technologies and generating considerable environmental externalities. The stratification of borrowers based on their ESG performance, coupled with the establishment of differentiated exposure thresholds for each cohort, empowers financial institutions with more granular control over the risks that emerge from the incorporation of sustainable development tenets into lending practices.

An additional feature of ESG risk management is the need to limit investments in environmentally harmful industries. The adoption of such practices enables banks to reduce potential financial losses arising from equity investments in companies that fail to adhere to sustainable development standards. At the same time, this

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does not suggest a complete отказ from financing or investing in these sectors, since a full disengagement could have adverse consequences not only for financial institutions and their counterparties, but also for the broader economy-especially in cases where a firm plays a strategically significant role within a particular industry. Nevertheless, a prudent and gradual decrease in investment exposure, guided by a balanced consideration of sustainability objectives and prevailing economic conditions, appears both economically sound and practically effective.

In addition, the development and dissemination of specialized financial products designed to enhance awareness and understanding of ESG-related risks should be regarded as a priority. Such instruments may function as important components of an integrated sustainable risk management framework, given that ESG awareness must extend beyond banks themselves to include clients, borrowers, and business partners. The higher the level of understanding among counterparties regarding the nature and implications of ESG risks, the greater the likelihood that they will undertake preventive actions to reduce their negative effects. Consequently, accelerating the diffusion of ESG-related knowledge among all stakeholder groups fosters more informed interactions and contributes to the overall improvement of banks' risk management quality.

4. Conclusions

In summary, the adoption of sustainable development principles by commercial banks, both in their strategic planning and routine operations, alongside the emergence of new risk categories, is forcing a fundamental reconsideration of how risks are traditionally assessed and managed. The specific attributes of ESG risks – their non-financial character, indirect impact mechanisms, extended time horizons for consequences, and increased levels of uncertainty – substantially compromise the effectiveness of relying solely on conventional risk management tools.

The analysis conducted in this study demonstrates that ESG risks do not replace traditional banking risks but rather interact with and amplify them. Climate, social, and governance-related factors are increasingly reflected in credit, market, operational, reputational, and strategic risks, thereby affecting asset quality, collateral values, capital adequacy, and the overall financial stability of banks. As a result, ESG risks should be considered not as an isolated category, but as an integral component of the overall risk profile of a credit institution.

In this context, the expansion of the methodological framework for risk management becomes a critical requirement. While traditional quantitative models remain relevant, they must be supplemented with qualitative analysis, expert judgment, scenario-based approaches, and stress testing that incorporate long-term environmental and social trends. The study confirms that an integrated approach-combining financial indicators with non-financial ESG metrics-allows banks to better anticipate systemic changes and improve the quality of managerial decision-making.

Particular attention should be paid to the use of ESG ratings as a practical instrument for assessing borrower sustainability and managing credit portfolios. Although the lack of a unified methodology limits the comparability of ESG ratings across different providers, their combined use with internal assessments and expert evaluations enhances their analytical value. In essence, embedding ESG principles into a bank's risk management framework boosts its ability to withstand shocks, builds greater trust in the market, and fosters enduring economic progress. The insights from this study can benefit bank executives, supervisory bodies, and government officials aiming to refine risk management strategies amidst the ongoing shift towards ESG integration. Future investigations could concentrate on empirically evaluating ESG risks, creating uniform ESG measurement standards, and adapting global leading practices to the unique circumstances of developing economies.

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