GREEN FINANCE, FINANCIAL REPORTING AND EVALUATION

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Abstract. *Research background*: Greening the financial system goes beyond lending and investment standards by considering both the impact of environmental and social risk on the financial system, and the impact of the financial system on environmental and social risks. The greening of the financial system will require going beyond current measures. The accounting and audit standard-setters already require climate-related risks to be considered in the financial statements. As with any other risk, investors need the corresponding information from financial statements and audit reports to make effective investment, voting and other engagement decisions, as well as to fulfil their own net zero commitments. The aim of this paper is to analyse and systematize the key challenges to understand the role of green financing in economic growth, their valuation and financial reporting.

The author put forward the provision on the valuation and measurement of green finance in contexts of financial reporting. The article also examines the provision on the existence of causal relationships between the "green" financial and "green" economy and analyzed the challenges of management of green finance in Bulgaria. Further research is needed to mobilise the necessary resources, bridge obvious knowledge gaps and make progress in addressing questions on how to close the green finance gap.

Keywords: green finance; financial reporting; evaluation; measurement
JEL: M41, O13, O16

1. Introduction

The concept of sustainable finance represents measures and proposals to attract the financial sector to the green transformation: how to prioritize capital to investments for the development of a new type, a green economy, as well as for the greening of the traditional economy, including industrial production and the energy sector.

"Sustainable finance refers to the process of incorporating environmental, social and governance (ESG) considerations into investment decisions in the financial sector, leading to more long-term investment in economic activities and sustainable development projects," the European Commission states on its dedicated page dedicated to sustainable finance.

During the new program period 2021-2028, a minimum of 30% of the budgets of the EU operational programs will be mandatorily directed to projects for sustainable development, and in the national recovery and sustainability plans, this percentage was increased to a mandatory minimum of 37%. Despite this massive public investment, the EU is running short of €180 billion a year to successfully meet its climate targets.

Greening the financial system goes beyond lending and investment standards by considering both the impact of environmental and social risk on the financial system, and the impact of the financial system on environmental and social risks. For example, climate change poses physical risks, transition risks and liability/reputational risks for the financial sector, but also presents opportunities in terms of new sectors and instruments for investments. Measuring progress on the greening of the financial system is useful, to both identify the degree to which financial institutions are adopting practices that impact sustainability and the extent to which sustainability is factored into risk assessments. It can also gauge the levels of finance being directed towards green sectors and growth objectives that have been prioritized by governments. While there are numerous lending or investment standards that have traditionally been proxies4 for this, there is no universal application or coordinated aggregated approach (Maheshwari et al. 2020).

In order to measure the performance of a financial system the current literature focuses mostly on depth, inclusiveness and stability of a financial sector. Key criteria required include: resilience (degree to which sector is capable of bearing risks); efficiency (degree to which sector operates at cost at a societal level7, efficacy (degree to which the sector serves the real economy from a societally appropriate perspective); and transparency which is essential to ensure effective decision making.

At the core of the concept of the term "sustainable finance" is the idea of a long-term vision of investing that is socially responsible and does not harm the environment. The goal is to combine good economic results with positive and ethical impact by investing in projects and organizations that contribute to the sustainable development of a given sector. How are sustainable projects financed? One of the most popular ways is with socially responsible investing, which involves adhering to certain environmental, social and corporate criteria for managing resources and the company. The different types of socially responsible investing are: green finance (funds that go to fight climate change and help companies reduce their environmental footprint); social financing (this includes all resources invested in savings and social projects); social business (any business that is not only profitable, but also helps society and the environment).

The goal set by the United Nations "2030 Agenda for Sustainable Development" is to thoroughly solve the development problems of the three dimensions of society, economy, and environment through an integrated approach and to promote human beings to the path of sustainable development. Green finance achieves the sustainable development goal of the quality of economic growth by promoting environmental governance. In theory, "green finance" means that the financial sector regards environmental protection as a basic policy. Potential environmental impacts must be considered in investment and financing decisions, and the potential returns, risks, and costs related to environmental conditions must be integrated. In daily business, we pay attention to the protection of the ecological environment and the treatment of environmental pollution in financial business activities and promote the sustainable development of society through the guidance of social economic resources. Potential environmental impacts should be considered in investment and financing decisions, and potential returns, risks, and costs related to environmental conditions should be integrated into daily business. Pay more attention to the protection of the ecological environment in financial business activities, and promote the sustainable development of society through the guidance of social economic resources (Jiang et al. 2020).

2. Methodology

The methodology used is based on general scientific methods of scientific knowledge - analysis, synthesis, induction and deduction, as well as on specific methods, specifically applying the systematic approach, the historical approach, the method of comparison and the abstract-logical method. Research is based on the review of relevant and available professional and academic literature.

3. Green finance and financial reporting

Despite a degree of confusion over the taxonomy of "sustainable finance", some consistency of

terminology has coalesced around the construct defined as:

- Sustainable finance generally refers to the process of taking due account of environmental, social, and governance (ESG) considerations when making investment decisions in the financial sector, leading to increased longer-term investments into sustainable economic activities and projects[1].

Therefore, effective impact measurement and management are integral to making effective sustainable finance investment choices. Impact measurement and management are inherently iterative and best practice follows four phases: (i) setting impact goals, (ii) devising impact strategies to achieve goals, (iii) choosing appropriate metrics and target for the stated goals, and (iv) measuring metrics and using them iteratively to drive decision-making and recalibrate strategy to improve impact performance. In each of these stages, establishing the materiality of impact is an important issue.

The European approach to sustainable finance includes three main pillars, according to the European Commission's Sustainable Growth Action Plan:

- ✓ Redirecting capital flows to investments related to sustainable development;
- ✓ Managing financial risks arising from the climate crisis;
- ✓ Promoting transparency.

At a practical level, these three pillars are realized through several main measures. One of them is the obligation for companies to disclose their environmental, social and management impact - or the so-called ESG Disclosure. This measure should stimulate investors to direct their capital to businesses with good

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1 https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en.

ESG results, and companies to invest in improving these results. By the end of 2022, changes to ESG disclosure are expected to be adopted in the EU, which include updating the rules and expanding the scope of companies for which implementation will be mandatory.

Another important measure is the so-called Taxonomy of Sustainable Finance. It is a classification (list) of those economic activities that the European institutions define as environmentally friendly. The creation of a taxonomy is expected to stimulate private investments, because the EU will prioritize activities in the Taxonomy through its funds, and public investments should create security and long-term and thus attract private investors.

An important measure is also the stimulation of the issuance of green bonds by state and private issuers. Green bonds are special debt instruments, the funds of which must be invested only for the implementation of green projects or policies. At least 30% of the funds for the European recovery program "Next Generation EU" will be raised by issuing green bonds. In 2021, the European Commission presented a proposal for a regulation to introduce a standard for European eco-bonds (EEBs), the adoption of which is pending. A number of countries have created their own national rules and frameworks for issuing sovereign green bonds, and have already issued similar debt instruments.

At the global level, the greening of the global financial system will rely strongly on indicators that track the connectivity and permeability of the whole financial system to the promoted green finance practices. As a goal, green finance indicators should enable the tracking of the transparency, efficacy, resilience and efficiency aspects of greening efforts:

✓ Transparency: Transparency indicators (e.g. passive vs active disclosure, CDP, etc.) are essential to build a growing ecosystem of green financiers and promises to unlock data sources needed to sustain the analytics and financing decision processes of investors and lenders with green targets.

✓ Efficacy: On the basis of transparency, indicators tracking material efficacy enable financiers to measure the impact of green finance and the delivery of concrete benefits, which if delivered in a context of a sound policy framework may represent in addition a new asset class for financiers (green finance dollars, monetized GHG reductions, ESG risk-hedged loans, etc.)

✓ Resilience: While transparency enables the birth of a green finance ecosystem and efficacy indicators support a business case for green financing, resilience indicators (e.g. Capital E&S risk, ESG) enable the distribution and matching of risk appetites with risk profiles of green finance opportunities.

✓ Efficiency: As green finance is at its infancy, efficiency indicators (e.g. level of subsidies, carbon prices, transaction costs, etc.) are essential to assure the competitiveness of its practices (Maheshwari et al. 2020).

Environmental, social and governance indicators (ESG, Environmental, Social and Governance) - are a set of parameters by which a company, its investors, stakeholders and regulators measure the impact of operational and strategic decisions on the value of the company, access to capital, development potential and investor behaviour, with a focus on achieving sustainable growth, identifying and reducing adverse impacts, related to its activities. The imetrcs reflect the company’s attitude to the environment, its social responsibility, and the level of compliance with corporate governance standards. ESG factors are often referred to as non-financial factors, and the ability of companies to manage them leads to measurable financial implications for their future development.

The individual letters shall have the following meaning:

✓ "E" means the environmental footprint of the action, activities related to climate change prevention, carbon footprint limitation, management of water and other natural resources, and waste related to the activity. The questions that underpin the choice of metrics include whether the company is energy and resource efficient enough to respond to changing climatic conditions, pollute the environment, or whether it is vulnerable to potential future climate change, etc.

✓ "S" means the social aspect of the activity, namely compliance with rules and standards related to the development of society, including employees, partners, contractors and the imposition of modern labour standards such as health and safety at work.

✓ "G" means the governance factor – the parameters of good corporate governance include metrics on the activities of the management bodies, the principles of independence and accountability, the supervision of remuneration, company strategy, risk management, presentation and disclosure of information, including the disclosure of environmental and social (E&S) imetrics. Lastly, but not least, balanced governance behaviour related to the creation of a sustainable business model, including balancing the interests of all parties, prevention of corruption and tax discipline (ESG Reporting Guidelines,2022).

For companies applying ESG reporting, it is important to be aware of the standards developed by the five organisations listed below. They have many years of experience and substantial engagement with stakeholders. The Global Reporting Initiative (GRI)[1] offers perhaps the broadest

and most comprehensively studied reporting framework globally. The International Council for Integrated Reporting (IIRC) establishes a framework that seeks to integrate ESG metrics with "traditional" financial metrics into one-off corporate disclosure. The Sustainability Accounting Standards Board (SASB)[2] is an independent non-profit making that develops and disseminates a

range of industry-specific sustainability metrics. SASB's focus is on helping companies communicate more effectively with investors by providing data disclosure standards.The Carbon Disclosure Project (CDP) - manages the global information disclosure system in relation to environmental impact management. Each year, this organisation supports thousands of companies, cities and regions to measure and manage the risks and opportunities arising from climate change, water security and deforestation. The UN Global Compact (UNGC)[3] calls on companies to adopt,

support and implement in their sphere of influence a collection of values covering human rights, labour standards, environmental action and the fight against corruption.

[1] GRI – Global Reporting Initiative;
[2] SASB – Sustainability Accounting Standards Board
[3] UNGC - The United Nations Global Contract

The SASB follows the model set by the International Accounting Standards Board and the Financial Accounting Standards Board in terms of an aspiration to establish ESG reporting standards similar to those set for mainstream investment in the International Financial Reporting

Standards and the Generally Accepted Accounting Principles. The SASB has developed a conceptual framework of ESG reporting that operates with a set of core principles that guide its approach to standard setting: namely, global applicability, financial materiality, and standard-setting norms that are industry-specific, evidence-based, and marketinformed. These principles aim to facilitate sustainability disclosures that provide material, decision-useful information to investors that are cost effective (Nicholls,2021).

In addition to traditional financial reporting, ESG data can reveal a deeper picture of the company's activity and development, helping investors to understand its competitive positioning and efficiency, through which they can take advantage of new opportunities. Beyond the regular disclosure of comparable financial/accounting information, the reporting and effective management of ESG metrics can bring significant benefits to companies in terms of:

- Regulatory compliance.
- Risk management.
- Limiting costs and increasing efficiency.
- Revenue growth and expansion.
- Access to capital.
- Human capital, including detention and recruitment of staff.
- Value and reputation of the company.

The United Nations Environment Programme (UNEP) developed a set of four Principles for Positive Impact Business and Finance focused on building standards for ESG capital. The four principles are:

✓ Principle 1: Definition. Positive impact finance provides funds to positive impact businesses that aim to make additional contributions to ESG issues and sectors. The principles acknowledge the interconnectedness of ESG issues.

✓ Principle 2: Frameworks. Standard methodologies and tools are required to monitor and manage the impact activities of ESG finance.

✓ Principle 3: Transparency. Full disclosure of ESG impact performance—negative as well as positive—is required. The principles do not prescribe which methodologies to use to identify, analyze, and verify positive impact. They only require that these be disclosed and transparent.

✓ Principle 4: Assessment. The assessment of positive impact finance delivered by entities should be based on the actual impacts achieved, including the magnitude of the impacts delivered; the scale of impacts delivered relative to amount of funds spent; the degree of leverage of private funds relative to public funds and/or donations; the level of additionality or underserved sustainable development need and, hence, constitute a significant step for the attainment of the SDGs) (Nicholls, 2021).

Currently, there is a wide range of competing standards that aim to capture sustainable finance and

ESG performance. the EU nonfinancial information disclosure regulations and the IFRS consultation on sustainable disclosure are very significant steps also towards common standards. Table 1 summarised the Sustainable Finance Standards.

Table 1. Basic Sustainable Finance Standards

Category of Standards	**Example**
ESG Disclosure: Principles	Principles for Responsible Investing International Integrated Reporting Council Principles
ESG Disclosure: Green Finance Standards	Carbon Disclosure Project Carbon Risk Assessment Framework Principles for Positive Impact Business and Finance Carbon Price Leadership Coalition
ESG Disclosure: Organizational Standards	Global Reporting Initiative Social Accounting Standards Board
Regulation	European Union Non-Financial Reporting Directive UK Climate Disclosure Regulation IFRS International Sustainability Standards Board

Source: Prepared by Authors on the Nicholls, 2021

The analysis of these approaches illustrates that green finance is typically defined by reference to what it finances (i.e. investment into green technologies, activities and companies) and not by what it achieves (financing and investment leading to a specific environmental impact). However, if one takes a view of green finance not as an objective in itself but rather as a tool to improve environmental conditions, the focus is on the potential impact of green investments. Methodological challenges for measuring impact are reinforced by a lack of understanding and research regarding the mechanisms through which green finance and investments can achieve positive environmental impact, such as information dissemination, dialogue and shareholder activism. Basing a green finance definition only on what is financed, and not on how it is financed, thus neglects other mechanisms through which investment products might exert influence on the environmental impact of the companies in which they are invested (European Commission, 2017).

Best practice for green finance benchmarks are connecting with measuring progress to driving policy actions. The process includes 5 steps:

1. Measure - Policymakers can contribute to improving green finance data quality & availability through disclosure requirements and frameworks, as well as by addressing barriers to data aggregation.

2. Benchmark - Policymakers can support research on benchmarks & targets related to investment and financing in key green technologies, building on existing “science-based” benchmarks under development in the climate finance space.

3. Monitor (National) - Policymakers can monitor green finance levels vs. benchmarks at national level to track potential capital misallocation (for policy and risk reasons) and to inform environmental and financial policy decisions.

4. Monitor (International) - Policymakers can monitor green finance levels vs. benchmarks at international level to assess potential systemic risk and global green objectives.

5. Act - Policymakers in some geographies may explore developing finance sector incentives to respond to potential financing gaps. Options include green bond guidelines, tax incentives, labeling schemes, and monetary policy (Thomä and Weber 2016).

4. Sustainable finance in Bulgaria

According to the The National Development Programme BULGARIA 2030 (Bulgaria 2030, 2022) the main policy objective by 2030 is to accelerate the economic convergence with the EU standard, through targeted and focused government support for increasing specialisation in products and industries characterized by a high technological and research intensity. The implementation of the strategic goals is envisaged through targeted policies and interventions, grouped into five interconnected and integrated development axes: (1) Innovative and Intelligent Bulgaria; (2) Green and Sustainable Bulgaria; (3) Connected and Integrated Bulgaria; (4) Responsive and Just Bulgaria. The introduction of eco-innovation activities, including new eco-products and technologies, will play an important role in supporting businesses. At the same time, efforts will be made to create new jobs in the green and blue economy. Low resource efficiency will also be addressed through actions to reduce the amount of waste generated in the production process, including in the implementation of projects within the framework of public procurement and concessions (Velinova-Sokolova 2022).

In March 2022 the Bulgarian Stock Exchange and its daughter company Financial Market Services in partnership with the leading carbon accounting and decarbonisation software solutions provider Plan A launched Oxygen initiative. The initiative is first of its kind in Bulgaria and aims to enable Bulgarian companies to measure and report on their environmental, social, and corporate impact by obtaining an assessment of their carbon footprint as well as further ESG-related indicators. One of the advantages of Oxygen, especially for public companies, is the ability to generate the Non-Financial Declaration, which has been developed in accordance with the EU Taxonomy and includes the ESG indicators established in world practice. The generated declaration contains quantitative and qualitative information structured textually and graphically in three main parts – environmental, social and corporate governance. This facilitates public companies as much as possible, especially in the reporting period (BSE 2022).

In August the Bulgarian Stock Exchange announced it has adopted Refinitiv's Environment, Social and Governance (ESG) metrics to power its sustainability index set to be launched end of 2022. Refinitiv, a London Stock Exchange Group business, will manage and provide data on the sustainable performance of BSE listed companies. Refinitiv's ESG metrics will qualify the constituents of BSE's ESG Index and maintain BSE's planned sustainability index.

Bulgarian Stock Exchange following the mission to promote responsible investment in sustainable development and advance corporate performance on environmental, social and governance factors in Bulgaria, together with Idependant Bulgarian Energy Exchange take the initiative of the establishment of Green Finance & Energy Centre - a NGO that concentrates the efforts of the business, the state and other stakeholders towards sustainable development of the country.

Green Centre aims at establishing itself as a think tank for policies in the fields of sustainable finance and energy with the following objectives:

✓ To give the topics of sustainable finance and energy top priority among decision-makers in the business and the country

✓ To be a unifying factor and to lead the public debate on the topics of sustainable finance and energy in Bulgaria

✓ To participate in the development of policies in the field of sustainable finance and energy

✓ To take part, representing Bulgaria, in the European and global networks for sustainable finance and energy

✓ To generate ideas for developing an index methodology, financial instruments based on sustainability factors

✓ To promote the ideas among stakeholders and the public through various trainings, seminars, discussions and other initiatives (BSE, 2022)

From the beginning of 2022, the Green Finance & Energy Center developed and adopted the first and so far, only ESG Reporting Guidelines in Bulgaria. The Guidelines contain methodological recommendations and developments that relate to the norms of environmental, social and corporate accountability not only for the public companies whose securities are traded on the capital market, but also for all companies that would like to follow responsible behaviour. The methodological approaches outlined in the Guidelines aim to encourage the disclosure of complementary voluntary information on significant environmental and social indicators, referring to established international standards for reporting ESG parameters approved for the relevant industry or sector (ESG Reporting Guidelines, 2022).

Measuring green finance across asset classes including:

✓ Green finance estimates are possible across asset classes and geographies, albeit with some uncertainty around precise figures.

✓ Data for tracking current and planned climate-related investment and financing exists for key sectors and technologies.

✓ Many estimates actually measure exposure to companies rather than investment. In addition, finance indicators aren't linked to green 'impact'.

✓ Some key data points, in particular related to RD&D, as well as non-climate related green aspects (e.g. biodiversity), are poorly developed.

✓ Climate benchmarks are possible only because of the global economic importance of energy systems, which in turn drive detailed data and modeling infrastructure. Broader 'science' or policy-based benchmarks are still lacking.

Companies that developed their approaches based on sustainable portfolio tangible benefits:

✓ Better decisions, more robust strategies
✓ Higher growth rate of more sustainable solutions
✓ Credible communication on sustainable benefits
✓ Stronger customer and stakeholder relationships
✓ Reduced risks
✓ Improved corporate image.

As such it is crucial to making the right decisions for the future of the business and will satisfy the main stakeholders:

✓ Investors are interested in long-term returns and want to minimize risk; they prefer a company that has good insights into future financial and environmental/regulatory risks and acts on the findings to a company that is reactive.

✓ Responsible customers have their own environmental, social and governance (ESG) goals and, in some cases, they can only attain them if upstream value chain partners reach theirs.

✓ Authorities and the general public benefit from increased transparency, which in turn will help in assessing safety and health risks.

✓ An increasing number of employees prefer to work for companies that take sustainability seriously (KPMG 2020).

5. Conclusion

Green finance standards serve to mobilize and apply finance for green development by addressing many different aspects regarding financial instruments (e.g., bonds, loans, equity), regarding finance lifecycle (raising capital, project finance, trading), and regarding green aspects (e.g., biodiversity, pollution, greenhouse gas emissions). With growing awareness of the responsibility of the financial sector to contribute to green development—the "financialization" of green development, a plethora of green finance standards have been issued and applied by governments, financial institutions, NGOs and associations over the past few years. However, little has been researched to understand why and how green finance standards develop in different ways leading to different outcomes, structures and applications of those standards. In other words, little is known about the nature of green finance standards.

Finance is designed to tackle the challenges of economic recovery in ways that help not only reduce risks and vulnerabilities to the economy but also reduce the emissions that cause climate change and increase development uncertainty. In the financial industry, data deployment and collection is becoming key, and the only thing that matters are whether the financial product that real customers want can be delivered in sufficient green packaging and adequate liquidity.

Further research is needed to mobilise the necessary resources, bridge obvious knowledge gaps and make progress in addressing questions on how to close the green finance gap.

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