



A Sustainable Future : The Importance and the Development of Sustainable Finance In the 21st Century

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The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The environmental problems that have emerged along with rapidly increasing global warming in recent years have made the concept of sustainability an important issue in the world in general. This fact has been largely effective in increasing the sensitivity of businesses and leading corporations to the environmental problems. This situation has led businesses to implement environmental friendly policies and invest in these areas, both in terms of efficient use of natural resources and minimizing the damage to the environment.

With the increasing global warming, climate change has recently become one of the most important problems in the world, and many countries have started to make efforts to reduce the risk of climate change. The inadequacy of environmental measures taken so far has necessitated the search for solutions in different areas regarding this issue. In this sense, financial institutions also contribute to climate awareness by following environmental policies in their activities and developing products that prioritize the environment.

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The concept of sustainable finance has led to the development of various financial products and to the development of financing projects aimed at protecting the environment. While the concept of sustainable finance is perceived as the responsibility of public authorities, the private sector has also been included in the process with the Sustainable Development Goals in the UN 2030 Agenda. There is no doubt that sustainable banking and finance practices, especially the implementation of sustainability practices by banks and other corporations in developing countries will contribute to the development of these countries considerably.

In this study, it is aimed to draw attention to the global climate crisis, to emphasize the relationship between finance and the environment, and to contribute to the increase of applications in this field in the world by introducing green financing tools. One of the important functions of sustainable finance against the climate crisis is the evolution of companies funded within the scope of ESG criteria into a production process that tends to be sensitive to carbon emissions, as well as acquiring social and governance sensitivity. In this way, an economic process can be carried out on the axis of environmental and social awareness. In addition to combating climate change, it can be an important supporter in achieving the Sustainable Development Goals.

Keywords: *Sustainability; sustainable finance; environmental; social and governance (ESG) criteria; sustainable finance instruments.*

1. INTRODUCTION

The concept of sustainability means that current resources are accessible to the future generations. In this context, the existence of a sustainable world will be possible by ensuring economic, social and environmental development and taking important measure in these areas. In other words, sustainability is a crucial opportunity for humanity where human needs are met, quality life is provided, the environment is protected and constantly improved.

While environmental risks and problems are increasing rapidly, institutions and organizations have had to include the concept of sustainability into their business models, processes and future plans. Within this scope, sustainable banking and finance concepts have led to the development of financing projects aimed at protecting the environment. While the concept of sustainable finance is perceived as the responsibility of public authorities, the private sector has also been included into the process with the 2030 Agenda for Sustainable Development and its 17 sustainable development goals [1].

There is no doubt that sustainable banking and finance practices, especially the implementation of sustainability practices by banks operating in developing countries will contribute to the development of these countries. In this context, it is important to include financial institutions, especially banks, into the process of sustainable finance with their services with the aim of protecting the future.

It is critical for banks to embrace sustainability due to the wide impact of the banking sector and its contribution to other sectors and sustainable development. The contribution of banks, which are players in the world financial network, to sustainability is important because banks that adopt sustainable policies have the power to trigger the involvement of the companies they finance in sustainable activities and projects. In other words, this situation has the potential to create a domino effect.

Sustainable finance is a new field of the finance industry, an environmental friendly approach. It is a wide concept that is not only about environment but also includes social justice and governance processes. Under the umbrella of sustainable finance, there are the concepts of sustainable banking, sustainable investment, sustainable stock exchanges and sustainable reporting and measurement. In this regard, sustainable finance is a response of the financial sector to environmental developments and a search for a solution to the problems like climate crisis.

The traditional understanding of finance focuses on the concepts of profit and cost, In this understanding, financial profit is of great importance and all other factors are ignored. Environmental and social factors are not taken into consideration. However, as a result of global developments, these ignored factors have become important for businesses, states and international organizations. The main reason of this changed attitude is that when considered within the context of finance, investors have

begun to act by taking into account social, environmental and even managerial factors that they did not care about before.

Non-financial reports, defined as reports in which businesses explain their social, environmental and economic activities, have begun to increase their impact and importance in the business environment. These non-financial reports that provide information about environmental, social and corporate governance performances, called ESG Criteria, have been taken into consideration by stakeholders and played a major role in specific processes like lending, borrowing and investing. Additionally, the ESG performance of companies is an important indicator for investors. Therefore, they should take this situation into consideration and increase their ESG performance to reach long-term investors. For this reason, it may be recommended for companies to move forward from the voluntary basis, which is generally accepted as non-financial reporting presented, in addition to financial reports and make it mandatory.

The aim of this paper is to examine the importance and the development of the concept of sustainable finance with reference to some related financial concepts such as sustainable stock indexes, sustainable financial products and environmental, social and governmental (ESG) investing. In this context, first, related literature will be reviewed, and the most related studies will be presented. Secondly, sustainable finance, its development and importance will be elaborated. Next, sustainable finance practices will be examined including the concepts of sustainable finance products and sustainable indexes. The paper will be finalized with suggestions and conclusion.

2. LITERATURE REVIEW

The Triple Balance Sheet System, which was first mentioned by John Elkington [2] in his study "Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development", is the basis for the development of the concepts of sustainable finance and corporate sustainability. The system that was developed by Elkington [2] to measure the US's corporate sustainability, is a valuable calculation method for its contribution to our world in terms of including environmental and social dimension for the determination of profitability of companies. With this method, Elkington [2] has included environmental and social dimensions in the

corporate literature in addition to traditional economic calculations such as profit, return on investment and shareholder value.

Jeucken [3], in his study, pointed out that banks have a great deal of responsibility for environmental problems and he advocated that banks are aware of this fact. His study provides a comprehensive account for current best practices through a systematic evaluation of major banks, an analysis of differences in approach and performance and recommendations for action and policy for better performance that will contribute to sustainable development. Jeucken [3] claims that sustainable banking is a dynamic concept and categorizes sustainable banking into four types. They are defensive banking, protective banking, preventive banking and sustainable banking.

Hart and Milstein [4] mention four main strategies that companies should implement in order to create sustainable value. In their study titled "Creating Sustainable Value", these strategies are listed as turning to clean technologies that will minimize emissions and pollution, implementing practices that will reduce costs and excessive consumption, determining a sustainable vision for the solution of poverty, inequality and environmental problems and developing a governance intertwined with the public and non-governmental organizations in line with the principle of transparency.

Richardson [5], in his study titled "Climate Finance and Its Governance: Moving to Low Carbon Economy through Socially Responsible Financing", defined climate finance as the legal and political regimes developed to prevent global warming. He also stated that this approach turns the financial sector into a transactional intermediary on issues such as capital mobilization for clean energy and emissions trading. In this way, socially responsible ethical investors can maximize their financial returns while also being sustainable.

Tandon and Setia [6], in their article titled "Green Banking: An Innovative Initiative for Attaining Sustainable Development," mention applications such as online banking, e-HRM, video-conferencing, minimum use of air conditioners, and paperless education used in the Indian banking sector. As a result of the research, it has been suggested that if the use of these applications in the Indian banking sector and investments in sustainable projects that offer new

products and services are increased, the country can achieve the target of reducing carbon emissions by almost 25% from 2005 to 2020.

Fashli et. al., [7] in their study titled "Green Banking and Infrastructure Project Financing for Sustainable Development" tried to measure how well banks in Indonesia act in accordance with green banking policies when financing industrial projects by using numerical data. As a result of the measurements made in line with the data received from SRI (Sustainable Responsible Investment), KEHATI Index and BEI (Indonesia Stock Exchange), it was determined that green banking policies have been implemented in the Indonesian banking system since 2010. Since that time, these policies have been implemented throughout the country in order to contribute to national development and it has become increasingly common in all banks.

In their book titled "Principles of Sustainable Finance", Schoenmaker and Schramade [8] touched upon the transformation of sustainability and the challenges of the sustainable field for companies, including internality, externality, governance, strategy and reporting. He explained the field of financial sustainability with topics such as long-term investment creation, assets, bonds, banking and insurance. In this context, he underlined the transformation of management and integrated thinking that integrates financial, social and environmental dimensions. The success of the transformation is attributed to individuals and the status quo, so there is a need to renew the current culture of the financial system and develop a new culture. They emphasized that in order for the transformation to become permanent, it is essential that those in the financial sector have a strong internal motivation for this.

Bergius [9], in his article titled Routes of Central Banks in Europe for More Sustainability, states that different central banks are taking sustainability steps with different methods. In this context, he emphasized that a sustainable financial system will ensure sustainable economic development.

According to Shanaev and Ghimire [10], the ESG (Environmental, Social and Governance) criteria are quite important on the stock performances. For instance, a representative sample of all US-traded firms rated by MSCI between 2016 and 2021 indicated that while ESG rating upgrades are related with small and insignificant positive

abnormal returns, downgrades are generally detrimental for stock performance.

All these developments have attracted the attention of academic circles and become the focus of attention on the relationship between ESG performance and stock returns of publicly traded companies [11]. Although ESG standards have been a topic of great interest in recent years, previously the impact of ESG factors on companies' financial performance was unclear [12].

3. SUSTAINABLE FINANCE AND ITS DEVELOPMENT

Sustainable finance can be defined as creating a positive impact with the least negative impact on nature by carrying out financial, environmental, social and management norms in a coordinated manner. Modern sustainable finance began to be promoted in North America and Europe in the 1980s through global discussions about sustainable development and environmentalism. These incentives have enabled it to spread over time with new initiatives around the world.

Environmental, social and governance (ESG) issues are taken into account when making investment decisions in sustainable finance, so that longer-term nature-friendly investments can be made. In this context, environmental issues comprehensively include many issues such as climate change, pollution and biodiversity. The social aspect of them includes inequality, inclusion, labor relations, investment in human capital and communities, and human rights. The management of public and private sector institutions takes an active role in the implementation of social and environmental views.

In general, sustainable finance is an important tool in order to achieve the targets set against global climate change and the problems that this crisis may cause, in line with environmental sensitivities and in line with achieving sustainable growth. The concepts of sustainable finance and financial sustainability can sometimes be confused with each other. However, sustainable finance differs from financial sustainability in some aspects. Financial sustainability is generally about sustaining businesses over a long period of time, without interruption, thus addressing only economic growth. However, sustainable finance is a much broader concept that includes economic, social and environmental

dimensions into financial sustainability issues [13].

While sustainable finance is a practice that takes environmental factors into consideration, it is also a broader practice that includes green finance as it also covers social and economic aspects. Green finance includes climate finance but excludes social and economic aspects. At this point, sustainable finance is the broadest definition that covers all financing activities such as green finance and climate finance that contribute to sustainable development. Additionally, sustainable finance is an evolution of green finance, as it takes into account environmental, social, governance issues and risks with the aim of increasing long-term investments in sustainable economic activities and projects [14]. In this way, sustainable finance practices implemented to ensure sustainability represent the most comprehensive financial processes today, especially in the fight against climate change.

4. SUSTAINABLE FINANCE INSTRUMENTS

The concept of sustainability, which is emphasized within the scope of international agreements signed in order to reduce the environmental, social and economic effects of global climate change, has increased the interest in sustainable finance. The main sustainable finance instruments are green bonds, green loans, social bonds, sustainability bonds, sustainability-related bonds and loans, transition bonds and bonds linked to sustainable development goals [15]. Sustainable bonds and loans aim to support positive environmental and social benefit-oriented programs and are important tools of sustainable finance. Some of the important sustainable finance products used today on a global scale, in terms of bonds, are as follows:

4.1 Green Bonds

Green bonds are a type of bond instrument in which the proceeds are applied, in whole or in part, to finance or refinance new or existing green projects [16]. The history of the green bond market dates back to the World Bank's first green bond issuance in November 2008 and is the most advanced product of sustainable finance markets [17].

Green bonds have gained great importance internationally in recent years, and the volume of investments in this field has been increasing over the years. 2023 predictions for green bond issuance, which reached 354.2 billion dollars globally in the third quarter of 2021, have reached approximately 1 trillion USD [18]. In this way, green bonds used to provide environmental benefits constitute an important pillar of sustainable finance practices. Green bond markets, which have become increasingly important in recent years due to the effects of global climate change, tend to develop today.

4.2 Social Bonds

Another bond type that refers to the use of bonds to create social impact projects focused on social results is social bond. It is as important as green bond in order to achieve sustainable development goals along with adaptation and mitigation policies against global climate change. In this regard, "Social Bond Principles (SBP)" were established in 2018, aiming to support issuers in the financing of projects that are sustainable, have a strong social aspect and create greater social benefits. Certain principles have been published within the scope of the voluntary process guide for issues such as social projects and socioeconomic progress [19].

4.3 Sustainability Bonds

Bonds where funds are used to finance or refinance both green and social projects; "Sustainability bonds" are another important sustainable finance practice similarly used in line with the Sustainable Development Goals (SDGs) [20]. Sustainable bond markets continue to develop on a global scale in recent years. Green, social and sustainability bonds have increased over the years and have reached approximately 1 trillion US dollars, together with sustainability-related bonds and transition bonds. The green bond market is in a leading position among sustainable finance practices [21].

The common feature of all these bonds is to take into account sensitivities to the natural environment and global climate change in the investment process. In short, to include the main emphasis of sustainability in the financial process.

Finally, green loans are another leading product in the field of sustainable finance. Green loans are used for a similar purpose as green bonds, to

support and finance green projects. Green credit markets aim to support sustainable economic activities on the basis of environmental sensitivities. Some of the indicator compliance categories for green projects specified in the Green Loan Principles (GLP), developed with the support of the credit markets association (LMA) in this field, are as follows [22]:

- Renewable energy,
- Energy efficiency,
- Environmentally sustainable management of natural resources,
- Clean transportation,
- Adaptation to climate change,
- Economically efficient products and green buildings.

5. SUSTAINABLE INDEXES

Stock exchanges have created guides on sustainability indices in order to support and develop regulations for publicly disclosing the sustainability-related practices of listed companies. These guides also aim to increase clarity and raise awareness about sustainability. Sustainability indices are defined as measures that help evaluate the environmental, social and economic performances of businesses in a systematic, transparent and complete manner [23].

With sustainability indices, green, responsible or sustainable investment understanding has begun to become widespread, replacing traditional approaches to investments in stock markets. Regardless of whether they are large or small, investors aim to contribute not only to their profits but also to sustainable development with the understanding of corporate sustainability. The first sustainability index in the world is the Domini 400 Social Index, which was started to be calculated in 1990 by KLD Research & Analytics, a company that conducts research and produces indices for institutional investors [24].

Dow Jones Sustainability Index (DJSI), the first globally recognized sustainability index, that started operating in 1999. DJSI evaluates companies' management quality by incorporating sustainability criteria into traditional financial analyses, as well as their potential future performance. DJSI is based on a "best in class" approach and focuses on companies that rank highly in terms of sustainability compared to other companies in the same industry. Thus, DJSI becomes a competitive element for

companies, enabling them to focus on sustainability efforts to increase the benefits of stakeholders [25].

FTSE4Good Global Sustainability Index started its operations on the UK (London) Stock Exchange in 2001. This index evaluates the performance of companies with ESG practices. FTSE4Good periodically reviews and revises the set of criteria for the index series [26]. It works with public data of companies whose ratings are published to strengthen score reliability and increase transparency. In the environmental assessment of the index within the scope of ESG following criteria are taken into consideration: water use, climate change, biodiversity, pollution and resources and supply chain. In the social evaluation: human rights and society, labor standards, health and safety, customer responsibility, supply chain. Finally, the governance assessment includes corporate governance, anti-corruption, risk management and tax system transparency [26].

The BM&F BOVESPA Corporate Sustainability Index was established in Brazil's Sao Paulo Stock Exchange in 2001. As Brazil began to develop, investors put pressure on businesses on corporate governance and sustainability issues. There was a need to create a platform to guide the economy that emerged with the rapid development of the country. It was established with the aim of achieving sustainable development in the country and making businesses aware of sustainability. With the established index, businesses compare their corporate sustainability performances and the activities carried out by the business in the name of sustainability that are transparently disclosed to the public. In this way, businesses are encouraged to carry out studies on sustainability and the public becomes aware of sustainability [27].

The Social Responsibility Index (JSE SRI Index) in South Africa's Johannesburg Stock Exchange in 2004 is the first sustainability index among developing countries. The Environmental Sustainability Index was established in 2005 with the participation of some institutions and organizations. This index deals with sustainability mostly in environmental dimensions. The purpose of the index is to examine the achievements and studies on environmental issues carried out all over the world. It aims to take precautions by foreseeing future environmental negativities and to pioneer

worldwide cooperation on possible future damage [28].

Sustainability indices, which are extremely important for companies to adopt sustainability principles, can improve the sensitivity of the business world towards environmental and social risks as well as economic factors. In this regard, in 2014, Borsa Istanbul (BIST) started to calculate the Sustainability index in order to provide information and guidance to companies in Turkey in the field of sustainability. The main purpose of the sustainability index is to increase the understanding, knowledge and practices on sustainability in Turkey and especially among Borsa Istanbul companies [29].

6. ESG (ENVIRONMENTAL, SOCIAL AND GOVERNANCE) CRITERIA

The ESG (Environmental, Social, and Corporate Governance) criteria refer to investors' investments around various responsibilities under environmental, social and governance headings, in addition to other financial factors. These criteria are the broadest umbrella definition that includes environmental, social and governance issues in investors' portfolio decisions [30].

The ESG concept, which is one of the sustainable investment concepts and is related to concepts such as socially responsible investment and impact investment, has been increasing its importance in recent years, especially with the effects of global climate change. A report prepared by the OECD stated that "ESG investments have become the leading form of sustainable finance, shifting from the early development stage to mainstream finance in many OECD countries" and that environmental, social and governance criteria come to the fore within the scope of sustainable finance [31].

Financial actors increasingly understand that the creation of long-term, sustainable financial returns depends on well-managed social, environmental and economic systems [32]. Although there are different figures about the size of investments within the scope of environmental, social and governance principles globally today, the importance given to sustainability reporting by large companies in recent years is important for the adoption and development of environmental, social and governance (ESG) criteria. In this regard, for example, the sustainability reporting of S&P 500

companies has increased every year over the last 10 years, from 20% in 2011 to 92% in 2020 [33].

Although the figures regarding the compliance of sustainable investments with ESG criteria and the amount of investment in this field vary, sustainable finance practices covering environmental, social and governance principles are becoming more and more popular day by day with the binding effects of global climate change and international climate agreements. It can also be an important complement to policies in this field due to its ability to finance the necessary precautions and studies against climate change.

ESG disclosures are of great importance to many players in the financial system. The potential benefits that ESG disclosures can create in the financial system are mainly providing transparency, minimizing information asymmetry, increasing management performance, facilitating the sharing of decisions taken by management, encouraging corporate governance, increasing independence in auditing, enabling investments to gain long-term emphasis, facilitating direct access to capital and growth [30].

7. CONCLUSION AND RECOMMENDATION

Climate-related problems are at the top of the world agenda today. According to experts, climate change has now become a crisis that affects the whole world and requires urgent action. As a matter of fact, this issue is described as a "red alert for humanity" by the UN [34]. Today, green sustainable products and services offered by banks, the building blocks of the financial sector, have become one of the important tools for managing climate risks and preventing the increase of these risks.

The idea that resources will run out, has become a very common idea as a result of the environmental problems, natural disasters and the increase in the size of the destruction caused by humanity. With the emergence of environmental awareness, environmentally friendly products, services and investments, have become more common. With the positive approaches of the banks to the issue, environmental and social features or attributes have been added to banking products and services. However, the reasons that prevent the development of sustainability practices in banking and finance sectors in developing

countries are the lack of knowledge of organizations in this field, the insufficient awareness of the society about sustainability, inadequacies arising from legal regulations and instability in public policies.

A suitable clean energy investment environment for green financing has not yet been fully formed in the world. Although the campaigns, advertisements and trainings carried out by businesses for awareness are promising for social awareness, they are not sufficient for the financial sector. Companies need to have strategic goals and specific management functions in order to cope with the effects of climate change, properly manage their approach to local and international environmental problems, and benefit from it.

In many countries of the world, fossil fuels are still used predominantly instead of renewable energy sources. Reasons for this situation include restrictions on renewable energy, insufficient environmental awareness among the majority of the public, inadequacy of the media on the subject, and deficiencies in the education system.

Investments that can implement the necessary innovations in order to achieve the Sustainable Development Goals and ensure a sustainable transformation, are compatible with the environment and support mitigation activities, have gained global importance in the fight against climate change in recent years. Sustainable finance investments, which include environmental, social and governance criteria in the investment process, are gaining importance with the developments in the world. In recent years, sustainable activities that have positively affected the development process of financial instruments can also be used against global climate change that may positively affect policies to combat climate change.

This study particularly focuses on sustainable finance and its development by taking the sustainable finance instruments into its center. However, the financial markets in which these financial instruments are traded are still in their infancy. Environmental, Social and Governance) Criteria are also a new topic in finance and these financial instruments are often viewed by governments as a promising means of achieving a sustainable and green economy. However, there are limitations to this study which should be recognized. Several more topics such as the

impact of the ESG criteria on the stock performances of these green financial instruments or several more similar topics can be studied in the future. For more solid results we need more data and more studies to be conducted.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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