

Green Finance And Sustainable Policies: Driving The Transition To A Low-Carbon Economy

Yeşil Finans ve Sürdürülebilir Politikalar: Düşük Karbonlu Ekonomiye Geçiş Sağlamak

Abstract: Investments supporting environmental sustainability have become a strategic tool in combating global problems such as climate change, depletion of natural resources and environmental degradation. In this context, renewable energy, energy efficiency, sustainable agricultural practices and projects to reduce carbon emissions come to the fore. Nature-friendly investments facilitate the achievement of sustainable development goals by providing both environmental and economic benefits. With the increasing environmental awareness in the 1990s, investment models in this field started to develop and gained a wider momentum thanks to global initiatives such as the Paris Climate Agreement and the European Green Deal. Financial instruments such as green bonds, sustainability-linked loans and carbon markets developed within this framework play an important role in the realisation of environment-focused projects. Throughout the process, effective co-operation between public institutions, regulatory authorities and the private sector has been developed. In this transformation process, policies determined at national and international level are particularly guiding. While the Paris Climate Agreement's goal of limiting the global temperature increase to 1.5 °C provides a guiding framework for environment-based investments, the European Green Deal includes concrete steps aiming to transition to a carbon neutral structure by 2050. In developing countries such as Turkey, renewable energy subsidies, efficient resource management and sustainable development plans support this process. Innovative financial instruments integrated into environmentally friendly policies make it possible to sustain economic growth in an environmentally sound manner. However, long-term and inclusive strategies need to be developed to increase the wider uptake and impact of environmental investments.

Keywords: Green Finance, Sustainable Finance, ESG (Environmental, Social and Governance) Investment, Renewable Energy Investment

Jel Codes: G18, G28, E61

Öz: Yeşil finansman, çevresel sürdürülebilirlik hedefleri doğrultusunda finansal kaynakların yönlendirilmesini ifade eder. İklim değişikliği, doğal kaynakların tükenmesi ve çevresel bozulma gibi sorunlarla mücadelede etkili bir araç olarak ortaya çıkmıştır. Bu yaklaşım, yenilenebilir enerji, enerji verimliliği, sürdürülebilir tarım ve karbon emisyonlarının azaltılması gibi projeleri desteklemektedir. Yeşil finansın gelişimi, 1990'larda çevresel farkındalığın artmasıyla başlamış ve Paris İklim Anlaşması ve Avrupa Yeşil Mutabakatı gibi uluslararası girişimlerle hızlanmıştır. Yeşil tahviller, sürdürülebilirlikle bağlantılı krediler ve karbon piyasaları gibi finansal araçlar bu alanda önemli katkılar sağlamaktadır. Bu süreçte kanun yapıcılar, finansal düzenleyiciler ve özel sektör yeşil yatırımları artırmak için iş birliği içinde hareket etmektedir. Ulusal ve uluslararası politikalar yeşil finansın genişlemesinde belirleyici bir rol oynamaktadır. Paris İklim Anlaşması'nın küresel sıcaklık artışını sınırlama hedefi, yeşil projelerin finansmanı için önemli bir çerçeve sunmaktadır. Avrupa Yeşil Mutabakatı, 2050 yılına kadar karbon nötr bir kıta olmak için somut adımlar atılmasını hedeflemektedir. Türkiye gibi gelişmekte olan ülkelerde yenilenebilir enerji teşvikleri ve sürdürülebilir kalkınma stratejileri bu süreci desteklemektedir. Yeşil finansın sürdürülebilir ekonomik büyümeyi destekleme kapasitesi, çevre dostu politikaların ve yenilikçi finansal araçların uygulanmasıyla artmaktadır. Ancak, bu alandaki gelişmeleri hızlandırmak için daha kapsayıcı ve uzun vadeli stratejilere ihtiyaç vardır.

Anahtar Kelimeler: Yeşil Finans, Sürdürülebilir Finans, ESG, Yenilenebilir Enerji Yatırımları

Jel Sınıflandırması: G18, G28, E61

Fikri Kaplan

Öğr. Gör. Dr.,

Türk Hava Kurumu Üniversitesi

Instructor Dr.,

Turkish Aeronautical Association University

fkaplan@thk.edu.tr

<https://orcid.org/0000-0002-4284-3466>

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Introduction

Green finance refers to the totality of financial instruments and investment strategies that support environmental sustainability. This concept has become one of the main components of sustainable development approaches developed against global environmental threats such as climate change, loss of biodiversity and depletion of natural resources. The main objective of green finance is to contribute to the reduction of environmental damage by encouraging the transfer of resources to environmentally friendly projects, while at the same time ensuring the transformation of the financial system into a structure that takes environmental risks into account.

In this context, green finance not only directs financial capital towards green investments but also represents a holistic transformation field that needs to be evaluated within a broader conceptual framework. This transformation process can be addressed within the framework of three main approaches: ESG (Environmental, Social and Governance) investment model, stakeholder vs. shareholder approach in sustainable finance and the redefinition of public-private sector roles.

The ESG investment model is an investment evaluation method that takes into account social responsibility and governance principles as well as environmental impacts. This model enables the integration of green finance at the corporate level by enabling investors to attach importance not only to financial return but also to long-term environmental and social sustainability. Investments based on ESG criteria aim to balance financial performance and environmental impact; in this context, investment decisions are shaped on the basis of risk management, ethical values and environmental responsibilities.

However, the stakeholder approach suggests a more inclusive perspective of sustainable finance in the context of corporate governance. While the traditional shareholder-oriented model prioritises profit maximisation, the stakeholder approach envisages that factors with a wide range of impacts such as employees, society, the environment and future generations should also be taken into account in investment decisions. This approach strengthens the social sustainability dimension of green finance and increases the social acceptance of environmental policies.

The roles of the public and private sectors are another critical dimension that determines the effectiveness of green finance. While the public sector leads the development of green finance by establishing regulatory frameworks, providing incentive mechanisms and developing guiding policies, the private sector plays a decisive role in the development of innovative financial products, capital mobilisation and the realisation of sustainable investment projects. Co-operation between these two sectors is vital for both channelling capital flows and collectively managing environmental risks.

The historical development of green finance also reflects this transformation process. International efforts, which started with the United Nations Conference on Environment and Development (UNCED) in 1992 and the Kyoto Protocol in 1997, were put on an institutional basis with the 2015 Paris Climate Agreement. In particular, the Paris Agreement envisages the transformation of financial systems in line with the goal of keeping global warming below 2°C. In this context, the Green Finance Action Plan published by the European Union in 2018 aims to expand the scope of green finance by establishing standards for sustainable investments.

Green bonds, green loans, sustainable investment funds and portfolio strategies that include environmental risks are among the main instruments of green finance today. These financial instruments both promote environmental sustainability and direct investors towards environmentally friendly projects (OECD, 2020). With the World Bank's issuance of the first green bond in 2007, green bonds gained a remarkable position in financial markets and started to attract rapidly increasing interest from investors (World Bank, 2022). In the following years, the European Investment Bank (EIB), the Asian Development Bank (ADB) and other multilateral development banks also contributed to this process with similar bond issues.

Moreover, numerous countries have introduced regulatory frameworks aimed at curbing carbon emissions, along with tax benefits and government-backed programs that facilitate the financing of environmentally sustainable investments. These measures have significantly contributed to the advancement of green finance. For instance, the European Union has implemented a range of financial mechanisms designed to steer both public and private capital toward environmentally responsible projects as part of its Green Deal strategy (European Commission, 2020). Similarly, China has encouraged financial institutions to expand their portfolios of green loans in accordance with its national strategy for green finance and has implemented supportive policies through the People's Bank of China to promote the issuance of green bonds (PBoC, 2021).

In conclusion, green finance should be considered not only as a source of financing to achieve environmental sustainability goals, but also as a multidimensional strategy that includes the transformation of corporate governance, investor behaviour and public policies. The success of this strategy is directly related to the dissemination of ESG criteria, the adoption of stakeholder-based approaches and the effective structuring of public-private sector cooperation.

1. Green Economy

It is an undeniable fact that our planet is under serious threat due to the global climate crisis. In recent years, many indicators such as the increase in average surface temperatures, ocean acidification, the rise in extreme natural events, and the decline in biodiversity demonstrate the severity of this crisis (IPCC, 2021; NASA, 2023). Scientists have proven that the main problem causing global climate change is the

greenhouse gases released into the atmosphere as a result of human activities (EPA, 2022). If governments continue to emit carbon at the same rate instead of taking effective measures, facing the consequences of the climate crisis in the coming years will become an inevitable reality (UNEP, 2022). Therefore, the policies and activities to be determined and implemented to combat the climate crisis must be determined correctly and implemented rapidly. The basis of these activities is the reduction of carbon emissions. In this direction, existing production and consumption processes need to be changed and carbon emissions need to be reduced urgently. In many conferences organised by the United Nations, it is emphasised that carbon emissions should be zero in the next thirty years. The main steps to be taken in the realisation of these targets set in conferences and agreements are the supervision of activities, taxation and financing. The concept of green economy comes to the fore in terms of freeing the economy from carbon emissions and ensuring the sustainability of our planet. Awareness of the concept of green economy and efforts in this field are increasing all over the world. (BRSA (2022), Sustainable Banking Strategic Plan 2022-2025, 2022, p.3-7)

The rapid industrialisation that accelerated following World War II, coupled with the expansion of globalisation and capitalist economic systems, has contributed significantly to the depletion of natural resources, environmental degradation, and ultimately, global warming. The growing world population and the increasing exploitation of natural resources have intensified ecological damage, posing serious risks to the well-being of future generations. In response to these pressing challenges, the concept of the Green Economy has emerged as a strategic framework. It aims to promote sustainable development by ensuring the efficient use of resources, fostering inclusive economic growth, and supporting a fairer and more balanced social structure. Current economic practices, which often disregard environmental limits, have led to significant ecological harm and undermined the sustainability of the planet. Therefore, transitioning to a green economy is now seen not as an option, but as a necessity to restore ecological balance and protect all forms of life on Earth (Azazi & Uzma, 2022, p. 94).

The green economy is primarily designed to mitigate the ecological damage caused by human activities and to ensure the long-term sustainability of both ecosystems and human societies. This economic model promotes a shift away from large-scale industrial production towards more localized, environmentally sensitive, and socially inclusive systems. Influenced by the small is beautiful philosophy, it advocates for production and consumption patterns that are aligned with ecological limits and human-scale development (Schumacher, 1973; Jackson, 2009). Although the green economy is often associated with sectors such as renewable energy and organic agriculture, its scope is far broader. It encompasses a holistic transformation of the economic system that integrates sustainability into all stages of production, distribution, and consumption. The emphasis is on reducing environmental impact,

promoting resource efficiency, and improving waste management practices (UNEP, 2011). This includes sustainable industrial practices, eco-friendly urban planning, and circular economy principles that aim to close the loop of production and consumption (Geissdoerfer et al., 2017). While renewable energy sources are a cornerstone of the green economy due to their low environmental impact, the approach goes beyond simply replacing fossil fuels. It calls for an integrated strategy that considers the ecological implications of energy infrastructure, land use, and the full lifecycle of technologies used (IRENA, 2020). For example, although biofuels are promoted as a green alternative, many critics argue that their production contributes to deforestation, food insecurity, and the overuse of agricultural land for non-food purposes—contradicting the core principles of sustainability (GRAIN, 2007; Searchinger et al., 2008). The green economy also encompasses activities aimed at restoring natural ecosystems and enhancing ecological resilience. This includes reforestation, wetland restoration, sustainable land use, and nature-based solutions to climate change. In addition, it supports innovations such as green architecture, energy-efficient construction, smart cities, low-emission transportation systems, and the use of artificial intelligence in environmental monitoring and resource optimization (OECD, 2019; United Nations, 2023). These efforts collectively aim to reduce the ecological footprint of human activities and build a more resilient, equitable, and low-carbon future.

The United Nations Environment Programme (UNEP) conceptualises the green economy as a model that not only mitigates environmental risks and ecological degradation but also enhances human well-being and promotes social equity. In this framework, the green economy is founded on core principles such as reducing carbon emissions, promoting efficient use of natural resources, and fostering inclusive development (UNEP, 2011). It advocates for both public and private sector investments in initiatives that aim to lower greenhouse gas emissions, create employment opportunities, and increase income generation, particularly in environmentally sustainable sectors.

This approach envisions a transition towards an economic structure that is low-carbon, resource-efficient, and socially inclusive. However, the successful implementation and operational sustainability of such an economy depend heavily on the development of a robust and well-integrated green finance system. Green finance plays a pivotal role in directing capital flows towards sustainable development goals, ensuring that environmental priorities are embedded within economic decision-making processes (OECD, 2020; World Bank, 2022).

In this context, national and regional policies serve as critical indicators of how effectively economies are adapting to ecological imperatives. The European Union and China offer two prominent case studies. The EU, through its European Green Deal, has introduced a comprehensive policy package designed to transition its member states

toward climate neutrality, supported by various financial mechanisms such as the EU Taxonomy and the Just Transition Fund (European Commission, 2020). Meanwhile, China has implemented regulatory guidelines encouraging financial institutions to increase green lending and has facilitated the expansion of its green bond market through central bank-led initiatives, aligning financial practices with environmental objectives (People's Bank of China, 2021; Zhang et al., 2022).

These examples illustrate the growing recognition of the interdependence between environmental sustainability and economic resilience, underscoring the need for systemic financial reforms to support the green transition on a global scale.

The European Union guides green finance through market-based regulatory mechanisms and adopts a transparency-based approach. While the EU Taxonomy aims to guide both investors and policymakers by providing a common classification of environmentally sustainable economic activities, the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD) force financial institutions and large companies to disclose more comprehensive information within the framework of ESG (environmental, social and governance) criteria (European Commission, 2020).

China, on the other hand, guides green finance with state-sponsored incentives and regulations within a central planning approach. Guidelines issued by the People's Bank of China (PBoC) and the China Banking and Insurance Regulatory Commission (CBIRC) direct financial institutions to manage environmental risks more effectively, while the China Green Bond Principles (CGBP) support the development of green bond practices in line with international standards (People's Bank of China, 2022).

A comparative analysis of the policies of both countries is presented in the table below:

Table 1: Comparison of Green Finance Policies of the European Union and China

Criteria	European Union (EU)	China
Approach	Market-based, based on transparency and disclosure	Compatible with state-sponsored, centralised planning
Regulatory Framework	EU Taxonomy, SFDR, CSRD	PBoC and CBIRC guidelines, China Green Bond Principles
Targets	Increasing investor confidence, promoting ESG-based transformation	Accelerating sectoral transformation, systematising environmentally friendly production
International Harmonisation	High standards of compliance and transparency	Gradual harmonisation with international norms
Fund Management	7 times more sustainable fund assets compared to the US by 2024	Rapid increase in green financial products; 25 trillion yuan of green loans by 2023

Source: Morningstar. (2024). *Europe continues to dominate the sustainable fund market*. Retrieved from <https://global.morningstar.com/en-gb/sustainable-investing/europe-continues-dominate-sustainable-fund-market>

In order to assess the concrete impacts of green finance policies, it is also important to compare various economic indicators. In this context, data on measures such as green bond issuance, green loan volume and investment orientation strategies are presented in the table below:

Table 2: Data on Green Financial Instruments in the EU and China

Financial Indicator	European Union (EU)	China
Green Loan Volume (2023)	Data limited - focus more on green fund and bond market	25 trillion yuan (about 3.48 trillion US dollars) StateCouncil,2023State Council, 2023StateCouncil,2023
Green Bond Issue (2021)	EU countries issued bonds worth around €300bn in total EC,2022EC,2022EC,2022	1.5 trillion yuan (about US\$240 billion) OxfordEnergy,2022OxfordEnergy, 2022OxfordEnergy,2022
Sustainable Fund Asset (2024)	7 times larger than in the USA	Net data is limited, but investment size is increasing rapidly
Risk of Greenwashing	\$18bn in 2024 found to be channelled to the biggest polluters	Reimbursement rates high; limited data transparency on green impact

Source: Climate Bonds Initiative (CBI). (2024). *Greenwashing risks in global green finance*. London: Climate Bonds Initiative.

These data show that both the European Union and China are trying to build a strong financial infrastructure in line with their environmental sustainability goals. While the European model focuses on increasing investor confidence and ensuring the transparency of markets, the Chinese model ensures the rapid mobilisation of resources through strong central guidance. Therefore, although the success criteria of both systems are different, it can be said that they complement each other in terms of the common goal of sustainable development.

However, examples of greenwashing in EU investment funds show that green finance needs to be underpinned not only by regulatory frameworks, but also by investment ethics and social oversight. China, on the other hand, has been successful in increasing the pace of investment, but needs further improvement in terms of transparency of practices and harmonisation with international standards. This indicates that not only quantitative indicators but also qualitative factors should be taken into account for the effectiveness of green finance.

The green economy concept offers a critical alternative to the brown economy model based on traditional resource consumption. However, for this framework to work, not only technical regulations but also national policy reforms, international financial co-

operation and a transformation based on social justice are required. At this point, green finance is the main instrument for investments that support the realisation of environmental goals. Green bonds, sustainable investment funds, bank loans based on environmental criteria and publicly supported incentives are prominent financial instruments in this context (Flammer, 2021).

However, the effectiveness and inclusiveness of green finance is a controversial issue among economic approaches. **Neoliberal environmentalist approaches** promote carbon trading and voluntary green investments, arguing that market mechanisms can solve environmental problems. However, there are also criticisms that these mechanisms only create new investment areas for capital but have limited environmental impacts. Such approaches are vulnerable to the danger of greenwashing and may preserve the status quo under the guise of environmentalism (Böhm, Misoczky & Moog, 2012).

Ecosocialist and critical political economy approaches criticise green finance for promising sustainability without transforming the nature of the capitalist system. According to these approaches, green transformation is only possible through a radical transformation of production and consumption relations. In other words, unless the existing structure based on the commodification of nature is questioned, sustainability remains only a discourse (Foster, 2000).

Furthermore, **the development economics perspective** emphasises the equitable distribution of green finance. Developing countries' access to green transformation is limited due to debt burden, technological inefficiency and limited access to financial instruments. This situation reveals the potential of green finance to further deepen inequalities. Therefore, it is recommended that instruments such as technology transfer, grants and low-interest green loans should be structured within the framework of global justice principles (UNCTAD, 2020).

UNEP emphasises that green economy does not hinder growth, on the contrary, it supports economic growth and contributes to poverty reduction by creating new and qualified employment opportunities. In this direction, it states that forestry should be developed, environmentally friendly agricultural techniques should be disseminated, harmful subsidies should be removed and public investments should be directed to green sectors. However, in addition to market instruments, public policy reforms and strong environmental governance systems are essential for the realisation of these goals (UNEP, 2011).

In conclusion, green economy and green finance are important tools for achieving sustainable development goals. However, the effective and fair use of these tools is only possible with a holistic strategy that requires the transformation of not only environmental but also socioeconomic structures. The inclusion of different economic perspectives in this transformation process will enable green finance to produce more inclusive and lasting solutions.

1.1. Green Banking

Green banking is defined as the implementation of policies aimed at reducing carbon emissions from banking activities and promoting environmentally friendly practices (Singh & Singh, 2012). According to the Banking Technology Development and Research Institute, green banking refers to a set of practices and guidelines that ensure economic, environmental, and social sustainability within the banking sector (BTDRİ, 2020). The main objective of Green Banking is to reduce carbon emissions by financing environmentally friendly policies. Green Banking not only reduces environmental damages and carbon emissions, but also improves economic indicators for many organisations. Research has proven that there is a positive relationship between environmental performance indicators and financial performance indicators. Because the increase in environmental activities leads to increased profits, reduced costs and increased competitiveness. For example, as a result of the decrease in energy consumption and energy prices, consumers' demand for environmentally friendly products and services increases, while profitability rates increase with the decrease in energy costs. (Bingöl, Türk, 2019, p.84-85)

Green Banking enables banks to be environmentally friendly in their operations and improve environmental sustainability. With the green banking approach, banks can transform their functional units and the activities they carry out into opportunities. These opportunities can be listed as follows (Malik, Mittal, Singh 2015, p.117-120):

- **Supply Chain Management:** Provides a variety of techniques and planning to minimise inventory waste by increasing carbon footprinting efforts.
- **Enterprise Resource Management:** In addition to performing smart device management, it enables paperless transactions by optimising business activities.
- **Customer Relationship Management:** Ensures the maintenance of paperless banking in customer relations by increasing the use of electronic devices and making investments.
- **Procurement and Supply:** It allows banks to measure the carbon footprints and sustainability risks of suppliers from which they will receive products and services.
- **Product Life Cycle:** With the transition to the green banking process, banks ensure the development of impact systems on product use while making policies and studies to reduce the carbon footprint of the activities they carry out and the products and services they offer.

Various policies and practices should be implemented for the development of Green Banking. According to Malik, Mittal and Singh, the following practices have an important place in terms of integration into the green banking process (Malik, Mittal, Singh 2015, p.117-120):

- Identifying activities to raise awareness on environmental, social and economic issues by increasing co-operation activities within banks.
- Conducting energy audits and considering sustainability criteria in procurement processes.
- Environmental and financial analyses of computer technologies.
- Setting targets and establishing a timetable for carbon emissions arising from the activities carried out by banks.
- Realisation of mechanisms to adapt to green policy work.
- Carrying out activities to raise awareness of the Bank's customers on sustainability.
- Following sector analyses and developments in the field of sustainability.
- Reorganising existing products and services according to environmental perspectives and creating financial solutions in the field of sustainability.
- Increasing investments in renewable energy sources and environmentally friendly projects.
- Offering green fund products to customers who want to realise environmentally friendly investments.
- Integrating carbon credit processes into business activities and making progress in this area.
- Providing financial support to water, air and biodiversity protection projects in the fight against climate change.

1.2. Green and Sustainable Finance

The Covid pandemic has led to a clearer understanding of climate change on a global scale. The sharp decline in carbon emissions during the lockdown period, especially in densely populated and industrialised regions, clearly demonstrated the impact of human activities on climate change. With the end of lockdowns and the reopening of economies, carbon emissions quickly returned to pre-pandemic levels. Therefore, reducing carbon emissions from reduced industrial and residential activities using existing energy sources does not offer a permanent solution. In order to reduce emissions permanently, it is necessary to switch to environmentally friendly energy sources. The use of environmentally friendly energy sources is important for achieving the targets set in international agreements and conferences, as well as for reducing environmental damage and reducing carbon emissions. Green financing sources to be provided by the financial sector have an important place in spreading the use of such energy sources. (Cerami, Fanizza, 2023, p.5-6)

Increasing energy demand due to population growth, sudden changes in oil prices and the effects of the global climate crisis have increased investments in renewable energy sources, i.e. green financing instruments, in recent years. With these changes and impacts, governments, institutions and individuals have directed their investments towards environmentally friendly technology investments. Green financing offers appropriate solutions to the global climate crisis, one of the biggest problems of our age. Environmentally friendly projects and investments in renewable energy sources not only trigger economic growth, but also offer attractive opportunities to various investors. In recent years, as the effects of the global climate crisis have been felt intensely, environmental awareness has increased and governments have supported clean energy investments in this field, indicating that green finance will be a popular topic in the future. (Browne, 2011, Kuloğlu, Öncel 2015, p.4-5)

According to the World Bank, sustainable finance is the process of taking environmental, social and governance (ESG) issues into account when making investment decisions within the financial sector and enables longer-term investments in sustainable economic activities and projects. The main objective of sustainable finance is to make it possible to create a low-carbon, climate-resilient recovery environment. It also helps to develop climate-based macroeconomic models, as well as enabling the formulation of climate policies based on the need for measurable and reliable solutions. (WorldBank, <https://www.worldbank.org/en/topic/financialsector/brief/sustainable-finance>)

According to the European Commission, sustainable financing is a type of financing in which environmental, social and governance principles are taken into account when making investment decisions within the financial sector, leading to longer-term investments in sustainable economic activities and projects. Sustainable finance has multiple objectives such as reducing climate change risks, protecting biodiversity, preventing pollution, defending human rights and ensuring inclusive equality. In addition, it is understood as a type of financing that supports reducing environmental pressure and sustainable economic growth, as well as achieving the climate and environmental targets set by the European Green Deal. (European Commission, https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance_en)

Green finance and sustainable finance are financial mechanisms designed to support the global transition to a low-carbon and sustainable economy, while simultaneously addressing the challenges posed by climate change (OECD, 2020; UNDP, 2021). Green finance facilitates environmentally friendly investments, such as renewable energy projects and eco-efficient infrastructure, and provides financial backing for initiatives aimed at reducing greenhouse gas emissions (World Bank, 2022). In contrast, sustainable finance incorporates environmental, social, and governance (ESG) factors into investment decision-making processes, thereby promoting long-term economic resilience and sustainable development (European Commission, 2021). While both

concepts are distinct, they share the common objective of directing financial capital toward activities that mitigate negative environmental impacts and contribute to the broader goals of sustainability. Together, green and sustainable finance play a critical role in ensuring the sustainability of financial systems and fostering responsible economic growth. The provision of green and sustainable finance has an important place in the fight against climate change. Because the increase in greenhouse gas emissions, which is one of the biggest causes of the global climate crisis, is due to the fossil fuels and non-renewable resources used in the global economy today. In the fight against the global climate crisis, it is necessary to promote a low-carbon sustainable economy and direct capital to activities that reduce the negative impacts. (https://www.charteredbanker.com/resource_listing/knowledge-hub-listing/what-is-green-and-sustainable-finance.html#Introduction)

Green finance and sustainable finance are essential instruments in addressing the global climate crisis by directing investments toward environmentally friendly projects and incorporating environmental, social, and governance (ESG) criteria into financial decision-making processes (OECD, 2020; European Commission, 2021). These financial approaches support increased investment in renewable energy, enhance energy efficiency, and encourage the development of other sustainable initiatives (UNEP, 2021). By doing so, they contribute not only to the reduction of greenhouse gas emissions and the mitigation of climate change impacts but also to the promotion of long-term economic development. In this way, green and sustainable finance contribute to building a more resilient and sustainable global economy (World Bank, 2022).

1.3. Green Financing Products

With the increasing interest in projects supporting environmental sustainability around the world, the scope of green financing products has also expanded. These products are not limited to large-scale investments, but are supported by a variety of instruments extending to the daily financial preferences of individuals. In this context, retail banking products that encourage environmentally sensitive consumer behaviour also stand out. Practices such as green housing loans, environmentally friendly vehicle loans and sustainable investment funds allow individual customers to reduce their environmental impact while contributing to the green transformation of the financial system (Yıldız, 2021, p. 88). Thus, the green financing approach has become a strategic approach adopted in all sub-units of the banking sector. Retail banking or retail banking reflects the services offered by a bank to the public. In other words, retail banking is defined as a variety of financial services offered by banks to individual consumers rather than large corporations. Retail banking offers individuals a wide range of products such as savings and demand accounts, deposits, credit cards, debit cards, insurance and investment products, digital banking and internet banking. (<https://paratic.com/bireysel-bankacilik-nedir-islemleri-nelerdir/>)

Retail banking is defined as a banking segment that offers retail and commercial banking products and services designed for individuals, households and SMEs. One of the easiest ways to include retail banking in environmentally friendly banking segments is to increase internet banking applications. Technological developments in retail banking provide many benefits to the ecosystem and the customer. For example, enabling customers to carry out transactions without going to the bank results in increased time efficiency, reduced pollutant emissions, reduced paperwork and costs. On the other hand, such developments also contribute to the reduction of branch and personnel costs, paper and postal costs in banks. Technology development in green retail banking is only a small part of this banking segment. On the other hand, green financing products make significant contributions to sustainability. When the green financing products offered by the retail banking segment are analysed, it is seen that it offers a wide range of products in the field of sustainable financing such as green cards, green transport loans, green housing loans, green housing loans, green deposit products (Rakiç, Mitic, 2012). The diversification of green financing products, especially in the field of retail banking, has brought many innovative products to support the financing of environmentally friendly projects. According to UNEP FI's definition, retail banking includes products and services specifically designed for households and SMEs rather than large corporate customers. These products play an important role in the expansion of green banking by providing financial options for individual customers. Basic banking services such as loans, mortgages, deposits and insurance provide financial contributions to projects that support environmental sustainability (UNEP FI, 2007, p. 15).

Green finance and sustainable finance are essential instruments in addressing the global climate crisis by directing investments toward environmentally friendly projects and incorporating environmental, social, and governance (ESG) criteria into financial decision-making processes (OECD, 2020; European Commission, 2021). These financial approaches support increased investment in renewable energy, enhance energy efficiency, and encourage the development of other sustainable initiatives (UNEP, 2021).

By doing so, they contribute not only to the reduction of greenhouse gas emissions and the mitigation of climate change impacts but also to the promotion of long-term economic development. In this way, green and sustainable finance contribute to building a more resilient and sustainable global economy (World Bank, 2022).

Table 3: Green Mortgage Products and Services of World Banks

Country	Bank/Institution	Application	Kaynaklar
Europe (Netherlands)	Banks in Netherlands	The government provides various incentives for green mortgage lending initiatives, with Dutch banks offering a 1% interest rate reduction to customers who meet environmental criteria.	OECD (2021). <i>Green Mortgage Market Development in the Netherlands</i> . European Mortgage Federation (EMF, 2022).
United Kingdom	CFS (Co-operative Financial Services)	The Bank offers an annual home energy assessment service to offset carbon emissions.	World Green Building Council (2020). <i>Green Homes and Mortgages in the UK</i> .
United Kingdom	Abbey, HBOS, Halifax vb.	They are the largest green mortgage lenders in the country.	UNEP FI (2021). <i>Green Mortgages in the UK</i> .
Australia	Bendigo Bank	It offers a green mortgage project with various discount opportunities for old and new houses..	Australian Sustainable Finance Institute (2022). <i>Sustainable Finance in Australia</i> .
USA	Fannie Mae	The MyCommunityMortgage and Smart Commute initiatives help borrowers purchase energy efficient homes and promote the use of public transport. The products are characterised by their diversity and flexible options.	U.S. Department of Housing and Urban Development (HUD, 2021). Fannie Mae Green Financing Fact Sheet.
Canada	CMHC, BMO) (CIBC,	It offers a 10% insurance premium rebate and up to 35 years of amortisation to customers who own energy-efficient homes or want to improve their energy efficiency	Canada Mortgage and Housing Corporation (CMHC, 2023). <i>Green Home Program</i> . Government of Canada (2022).

The proliferation of green mortgage loans has an important place among sustainable financing solutions. These loans encourage the financing of energy-efficient housing and environmentally friendly projects, enabling individuals to reduce their environmental impact. However, green financing is not limited to the housing sector.

The commercial sector is similarly turning to green financing instruments for green building projects and the construction of environmentally friendly commercial spaces. In this context, green commercial building loans reduce the environmental impact of commercial enterprises while significantly lowering their operating costs.

Green commercial building loans provide lower energy consumption, reduced environmental destruction and more efficient waste management compared to conventional building projects. These products contribute to businesses reducing carbon emissions and improving energy efficiency, while also reducing long-term costs. For example, commercial enterprises can continue to operate with lower operating costs and increased efficiency thanks to more efficient energy use. Such green financing instruments not only affect costs in the commercial sphere, but also make significant contributions to combating global climate change and environmental sustainability.

Table 4: Green Commercial Building Products and Services of World Banks

Country	Bank/Institution	Application
Canada	TAF, Tridel	Banks that provide loans for green commercial buildings offer green financing products that favour materials that save more than 25% energy compared to conventional equipment.
USA	Wells Fargo	It offers credit facilities for the construction and reconstruction of LEED certified buildings. The Bank offers incentives for green building loans such as energy efficiency, low operating costs, high performance and exemptions from initial premium payments.
USA	NRB	Offers green building loans with a 1% interest rate reduction to promote energy efficiency in commercial and multi-unit properties.

Source: UNEP FI (2021). *Green Mortgages in the UK*.

The advantages offered by green commercial building loans play an important role in promoting sustainable projects in the commercial sector. These loans provide both economic and environmental benefits by supporting environmentally friendly construction projects with elements such as energy efficiency and low operating costs. Similarly, the residential sector also aims to increase energy efficiency and promote the use of renewable energy by utilising green financing instruments.

In this context, green housing loans are financial instruments that support individuals to build energy-efficient houses or renovate their existing houses in an energy-saving way. These loans also encourage the installation of renewable energy systems such as solar energy and wind energy, contributing to an important step in combating the global climate crisis.

Table 5: World Banks' Green Housing Loan Products and Services

Country	Bank/Institution	Application
USA	NRB	In order to support the fight against the global climate crisis, it offers its customers a single-stage solar financing product and provides ecological home loans with a 25-year maturity.
USA	Bank of America	Through the Environmental Home Express Programme, the bank makes donations to environmental NGOs for customers using Visa Access loans.
USA	CitiGroup	In co-operation with Sharp Electronics Corporation, it offers accessible and affordable financing for the purchase and installation of residential solar energy systems. In addition, the bank intends to increase credit limits or provide new loans to support green home loans in this area.

Source: World Green Building Council (2020). *Green Homes and Mortgages in the UK*.

Green housing loans are one of the important instruments that offer financial solutions to individuals to support environmental sustainability. These loans encourage both increased energy efficiency and the installation of renewable energy systems. Many banks and financial institutions around the world contribute to the fight against climate change by offering such green financing products.

For example, NRB in the US supports the financing of solar energy systems by offering its customers a 25-year eco-home loan. Bank of America offers a programme for customers using the Visa Access credit card to support environmental donations. In addition, CitiGroup, in cooperation with Sharp Electronics Corporation, provides financial support for the installation of solar energy systems in residential buildings (UNEP FI, 2007). Such practices not only promote environmental sustainability, but also make it easier for individuals to transition to a greener lifestyle.

These products, offered worldwide in the form of green housing loans, support global efforts to create environmentally friendly living spaces and combat climate change. In this context, other green financing instruments such as green car loans also play an important role.

In recent years, the effects of global climate change have started to be felt intensely worldwide. One of the biggest causes of global warming is seen as carbon emissions. The vehicles we frequently use in our daily lives increase the amount of carbon in the atmosphere and cause the effects of global warming to be felt more intensely. In this context, the use of electric and hybrid vehicles instead of fossil fuelled vehicles has an important place in reducing carbon emission rates and ensuring energy efficiency. Green car loans stand out with various interest rate discounts and maturity lengths for the purchase of electric and hybrid vehicles in order to reduce carbon emission rates and ensure energy efficiency. It is known that green car loans are among the most widely used credit products worldwide, especially in Australia and Europe.

Table 6: World Banks' Green Car Loan Products and Services

Country	Bank/Institution	Application
Canada	VanCity	It offers the Clean Air Car Loan, which offers preferential interest rates for the purchase of low-emission hybrid vehicles.
Australia	Mecu	It offers goGreen Loans, which provide preferential interest rates and discounts for purchasing low-emission vehicles. goGreen product increased the use of large vehicle loans by 45%.
USA	Bank of America	It offers fast approval, unsecured and flexible loans to small trucking businesses to purchase low carbon emission vehicles.

Source: World Green Building Council (2020). *Green Homes and Mortgages in the UK*.

Green car loans contribute to the reduction of carbon emissions by encouraging environmentally friendly transport options. These loans are an important financial instrument with the interest rate reductions and flexible payment terms they offer, especially for low-emission vehicles and electric vehicles. For example, in Canada, VanCity supports the use of environmentally friendly vehicles by offering clean air vehicle loans to those who want to buy hybrid vehicles. In Australia, Mecu encourages the purchase of low-emission vehicles with its goGreen loan and this product has increased the use of large vehicle loans by 45%. Bank of America in the US offers fast-approval, unsecured loans for low-carbon emission vehicles for small trucking businesses (UNEP FI, 2007).

Green car credits aim to reduce energy efficiency and carbon footprint, encouraging individuals and businesses to use more environmentally friendly modes of transport.

Table 7: World Banks' Green Credit Card Products and Services

Country	Bank/Institution	Application
Europe	Rabobank	It offers the Climate Credit Card, which donates to WWF based on customer spending.
Netherlands	Tendirsi Holding BV	Introduced the GreenCard Visa, the first credit card designed to support global emissions offsetting initiatives.
England	Barclay's	The Barclay Breathe Card offers discounts and low borrowing rates for the purchase of green products and services, and 50 per cent of card profits are allocated to global emission reduction projects.
USA	Bank of America	It allows customers to donate their prizes to greenhouse gas reduction organisations or use them for green product purchases.

Source: OECD (2021). *Green Mortgage Market Development in the Netherlands*. European Mortgage Federation (EMF, 2022).

Green credit cards have been developed to incentivise environmentally friendly spending and to make customers' financial transactions based on the principle of sustainability. In Europe, Rabobank introduced the Climate Credit Card, which donates to WWF based on customers' spending, while in the Netherlands, Tendirsi Holding BV introduced the GreenCard Visa to support global emissions offsetting initiatives. In the UK, Barclay's offers discounts and low borrowing rates for the purchase of green products and services, while 50 per cent of card profits are allocated to global emission reduction projects. Bank of America offers its customers the opportunity to donate their rewards to greenhouse gas reduction organisations or use them for green product purchases (UNEP FI, 2007).

While these financial instruments encourage consumers to make environmentally friendly purchases, they also provide financial support to sustainable projects. These advantages offered by green credit cards contribute significantly to the spread of environmentally friendly consumption habits.

Another important instrument of green finance is green deposits. These deposit products offer financial resources directed towards environmentally friendly investments as a tool that enables banks to finance sustainable projects.

Green deposit is a financial product that adopts environmental, social and community principles. This product, which is generally offered within the scope of green and sustainable banking, aims to support environmentally friendly projects with the deposits of individuals and commercial enterprises. Green deposits are generally used to support environmentally friendly projects or sustainability-oriented initiatives with customers' deposit resources. The main purpose of these deposits is to reduce carbon emissions and support the fight against the global climate crisis. Green deposits are also used to support not only environmental projects but also projects involving social issues such as education, health and social justice. In such deposits, customers are provided with transparent information on where their money is invested. In addition, customers are provided with reports that measure the environmental and social impacts of their investments (Çakır, 2023).

Table 8: Green Deposit Products and Services of Banks in the World

Country	Bank/Institution	Application
Australia	Westpac	Provides the Landcare Term Deposit product, which offers a credit facility that supports sustainable agricultural practices for every dollar spent.
USA	Shorebank Pacific	It offers the EcoDeposit product, which uses collected deposits to provide loans to companies focused on

		conserving natural resources and improving energy efficiency.
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Source: U.S. Green Building Council (USGBC). (2022). *LEED and green financing in the United States*. Washington, DC: USGBC.

2. Corporate and Investment Banking

Corporate banking is a type of banking that provides financial services to large companies and organisations. The services provided to clients in this area generally include account management, cash management, credit and lending, market risk identification and advisory services. Investment banking is a unit that provides specialised financial services to large-scale investors and companies. Investment banking services include complex financial transactions such as mergers and acquisitions advisory, capital markets services, company valuation, asset management and risk management. Corporate and investment banking offer integrated services that often complement each other (<https://www.nurkanaydogan.com.tr/kurumsal-bankacilik-kurumsal-bankacilik-nedir/>).

According to UNEP FI, corporate and investment banking is a banking segment that meets the financial needs of large corporations, institutions and governments and provides banking solutions in an international context. Corporate and investment banking services often manage complex processes such as providing credit, providing capital to firms, managing funds, advising on mergers and acquisitions, and managing money in derivatives and foreign exchange markets (UNEP FI, 2007, p.24).

Today, it is stated that sustainability is a focal point for the whole world and that activities in this field have become a necessity rather than a choice for the business world. Corporate and investment banking should create a positive impact in this area and focus on sustainability efforts. When the products offered by corporate banking in the field of green finance are examined, it is seen that there are green project finance, green securitisation, green bonds, green venture capital, carbon finance and emission trading products (Gizep, 2019, p.63).

2.1. Green Project Finance

Project finance was created by combining commercial banking's approach of assessing the project within the overall situation of the company and investment banking's discipline of analysing projects and assets independently of companies. In recent years, it has become the most preferred financing instrument for project investments. In project finance, the focus is not on the financial needs of the company, but on the growth possibilities that the project will create and the financing needs that will arise from asset purchase initiatives in the following processes (<https://www.tskb.com.tr/hizmetler/kurumsal-bankacilik/proje-finansmani>).

According to UNEP FI, project finance is a corporate and investment banking product created to provide financing for large projects. It is generally established to finance

projects in sectors such as telecommunications, petrochemicals and natural resources (UNEP FI, 2007, p.60).

Green project finance is a green finance product created to finance projects that contribute to environmental sustainability and tackle the climate crisis. While the projects financed are generally developed to ensure efficient use of natural resources and minimise environmental damage, resources are mostly allocated to renewable energy projects. In addition, environmentally friendly projects such as waste management, energy efficiency and water management are also funded. Green projects are usually financed from various sources such as financial institutions, private investors, government-backed financing programmes, environmental funds and international financial institutions. Banks providing green project finance also assess the social and environmental risks of projects. Increasing green project financing contributes to the fight against global climate change as well as increasing co-operation between countries. Green project finance provides economic and social benefits as well as environmental benefits. Such projects represent an approach that aims to combine economic growth with environmental and social benefits (<https://www.greenfinanceplatform.org/>).

Table 9: Green Project Finance Products and Services of Banks in the World

Country	Bank/Institution	Application
Global	BNPP, Rabobank, Barclays, Fortis, Chartered Bank, WestLB	Banks have established specialised departments for long-term project finance and are promoting the early adoption of clean energy technologies with a focus on renewable technology sectors.
USA	JP Morgan	In 2006, it led the capital raising of \$1.5 billion for the wind energy market, allocating approximately \$650 million to its own portfolio. Since 2003, it has invested approximately \$1 billion in 26 wind farms and is actively supporting investments in biomass, geothermal and solar energy.
USA	Dexia	The Bank has developed various techniques for financing green projects within the Bank.
Europe	Bank of Ireland	It offers green project finance products for waste management and waste-to-energy production.

Source: OECD (2021). *Green Mortgage Market Development in the Netherlands*. European Mortgage Federation (EMF, 2022).

2.2. Green Securitisation

Securitisation is defined as the process of converting illiquid assets into securities that can be used in capital market activities and issuances (Erdönmez, 2006:75).

Green securitisation is a green financing instrument created to finance environmentally friendly project investments and renewable energy projects and aims

to promote sustainability within the financial system. This instrument usually includes financing instruments such as green securitisation and green bonds. Green securitisation enables various projects to be supported based on environmental and sustainability criteria.

Green bonds are borrowing instruments used to finance environmentally friendly and sustainable projects (Jun, Kaminker, Kidney, Pfaff, 2016, p.4). Green bonds are green debt instruments issued by the public, private sector and other organisations in line with four basic green bond principles in order to provide financial support to environmentally friendly projects (Kandır, Yakar 2017, 161). These four basic principles are fund utilisation conditions, project evaluation and selection process, revenue management and reporting processes. These principles help to develop the Green Bond market, ensure the transparency of issuances and promote information integrity (Menteşe, 2021, p.100).

Green bonds are assessed against certain standards according to whether they fulfil environmental sustainability criteria. These standards are based on various criteria for measuring and reporting the environmental, social and societal impacts of the project. The monitoring and reporting process is important in the issuance of green bonds because it clarifies whether the green bonds issued are directed towards the identified environmentally friendly projects. Today, green securities attract the interest of socially and environmentally responsible investors and help realise sustainable development goals in addition to financial returns.

Table 10: Green Securitisation Products and Services of Banks in the World

Country	Bank/Institution	Application
Global	IFC, DFID	Banks are conducting feasibility studies for sustainable resource capacity and financial infrastructure through the Eco-Securitisation Plan.
Latin America	Various Banks	In Panama, a forest bond product was developed to finance large-scale afforestation projects.
Global	BNPP, Goldman Sachs, Lehman Brothers	It provides auxiliary capital through loan bonds to mitigate risks arising from natural disasters.

Source: OECD (2021). *Green Mortgage Market Development in the Netherlands*. European Mortgage Federation (EMF, 2022).

The above examples illustrate the products and services offered by some of the world's major financial institutions within the scope of green venture capital. Such practices show that environmentally friendly investments are supported not only by the private sector but also by financial institutions. These support mechanisms provided by banks facilitate the realisation of green projects and play a key role in achieving sustainable development goals. In this context, in order to concretise the effects of these financial

instruments in the field, the example of Tesla, a successful green venture capital application, can be considered as a remarkable case. Tesla's green financing process demonstrates how both the private sector and green investment funds are scaling green initiatives. One of the best-known examples of the success of green venture capital is Tesla. Tesla Inc. received significant financial support from large venture capital investors and government-backed green finance instruments in the early years of its establishment. The \$600 million green bond issued in 2013 played a critical role in scaling Tesla's energy efficient electric vehicle production and developing battery technologies (Tesla Annual Report, 2013; Climate Bonds Initiative, 2020). Considering the company's stock market performance, growth rate and technological impact, it can be said that this financing structure is not only environmentally but also economically successful.

Another successful publicly supported example is the green financing programmes run by KfW Bank in Germany. This bank provides risk capital and project financing to renewable energy initiatives through low-interest loan programmes, as well as technical assistance to climate-friendly projects. Within the scope of KfW's Erneuerbare Energien - Standard (Renewable Energy - Standard) programme, approximately 150 billion euros worth of environmentally friendly projects were invested between 2007 and 2020 (KfW Development Bank, 2021).

In this context, green venture capital stands out as an important tool that contributes to the development of initiatives that produce technological solutions to the climate crisis. However, in order to increase the effectiveness of this type of financing, not only initial financing but also long-term strategic support, sustainable public policies and favourable market conditions are required.

2.3. Green Venture Capital

Venture capital refers to investments in new and potentially high-yielding but also high-risk projects. According to Karasioğlu (1996, p.161), venture capital is a financial instrument created to support the development of small-scale companies and maximise their profit potential. This form of investment plays a flexible and strategic role in financing entrepreneurial activities.

Green venture capital refers to venture capital investments in ventures that develop environmentally friendly products and services. This type of capital is particularly targeted at early-stage firms operating in areas such as renewable energy, waste management, environmentally friendly production technologies and energy efficiency (Tatum, 2023). Unlike traditional venture capital, it is not only limited to the

expectation of financial return, but also considers sustainability criteria such as environmental sustainability, carbon footprint reduction and social impact (UNEP FI, 2007).

The success of green venture capital investments is measured not only by short-term gains but also by long-term environmental impact and corporate sustainability criteria. In this context, studies have shown that green venture capital-backed firms show a more resilient and harmonised growth performance in the long run compared to traditional firms (Cumming et al., 2016). In addition, such investments contribute to the development of climate technologies by encouraging innovation.

The table below provides an example of the practices of some global financial institutions in the field of green venture capital:

Table 11: Green Venture Capital Products and Services of Banks in the World

Country	Bank/Institution	Application
USA	Citigroup	Under the Sustainable Development Investment Programme, it provides private equity investments in renewable energy sources such as wind, solar and biofuels.
USA	Bank of America	It offers discounted loan rates and 100% financing support to promote sustainable forest management practices, forest conservation and biodiversity.

Source: European Commission. (2023). *EU taxonomy for sustainable activities*.

2.4. Emission Trading

Carbon trading is one of the most important mechanisms specified in the Kyoto Protocol and was established in 1968 by the famous economist Dales. Carbon trading refers to markets developed or organised to reduce carbon emissions (Stern, 2006, p.203). In the process of harmonisation with the Kyoto Protocol, many countries or regions have included emissions trading instruments in their activities. Countries have established carbon markets in accordance with the protocol, some countries have established mandatory carbon markets, while others participate in voluntary carbon markets (Republic of Turkey Ministry of Environment and Urbanisation 2019, Macroeconomic Face in Combating Climate Crisis, p.27).

Emissions trading is defined as a market-based activity that aims to reduce emissions of carbon dioxide and greenhouse gases in the atmosphere. This activity allows countries to create emission reduction certificates and to buy and sell these certificates in the markets (<https://www.vtcenerji.com/blog/>).

Table 12: Emission Trading Products and Services of Banks in the World

Country	Bank/Institution	Application
Global	Barclays Capital, HSBC, Fortis, ABN AMRO, BNPP, JP Morgan, Goldman Sachs, Citigroup	Banks offer carbon emission trading products and carbon credit instruments to help corporate clients align with global climate crisis efforts.
Europe	Various Banks	It offers products and services for trading in carbon markets, including swaps, spot and futures, and commodities specific to carbon markets.

Source: European Commission. (2023). *EU taxonomy for sustainable activities*.

3. Asset Management

Wealth management is one of the fastest growing segments of the financial sector today, representing one of the core business activities of banks. This segment offers clients a wide range of services such as estate planning, investment funds, wealth programmes, financial planning and advisory (UNEP FI 2007, p.33).

Green asset management can be defined as the asset management of an asset management company or bank, taking into account the principles of environmental sustainability and social responsibility. In this segment, not only the financial return on investments is taken into account, but also environmental and social criteria. Green asset management is a reflection of a trend that aims to observe social and environmental management responsibilities. In addition to all these, while carrying out green asset management activities, project investment resources are provided in accordance with certain standards. These standards can be international asset management framework setting standards such as Global Reporting Initiative (GRI) and Principles for Responsible Investment (PRI).

3.1. Green Finance and Investment Funds

Green Investment Funds are green financing instruments that provide capital mobility to projects created to contribute to the fight against climate change. The main objective of green financial instruments and investment funds is to protect the environment and support sustainable development. On the other hand, these financial instruments facilitate the transition to a low-carbon and sustainable economy and encourage investment in environmentally friendly projects and technologies. At the same time, they create positive environmental, social and financial outcomes for investors and stakeholders. Green financial instruments are created not only to provide financial support or generate financial returns, but also to mitigate the effects of climate change, stop resource depletion and eliminate social inequality. Green investment funds are generally categorised under three main headings: public funds, private funds and public-private funds. Public funds are financial instruments created by governments

and public institutions to support environmentally friendly projects and initiatives. Private funds are funds established by banks, insurance companies and asset managers. Private green funds aim to provide resources to environmentally friendly projects while at the same time achieving competitive returns. Funds created through co-operation between the public and private sectors provide resources for large-scale infrastructure projects thanks to the strong co-operation between both sectors (Stein 2023, <https://www.carboncollective.co/sustainable-investing/green-investment-fund>).

Table 13: World Banks' Green Financial and Investment Products and Services

Country	Bank/Institution	Application
Europe	Banks in Netherlands	Banks offer income tax deductions to their clients investing in Dutch Green Investment Funds and provide low-interest loans to clients investing in these funds.
Europe	UBS	UBS Capital Fund-Eco Performance funds allocate 80% of their assets to ecological and social projects and 20% to environmentally friendly innovative projects. The fund works to support clean energy and contribute to the fight against the global climate crisis.
Europe	Credit Suisse	Credit Suisse has established the world's first natural disaster fund to mitigate the risks arising from climate change. This fund aims to provide protection against climate risks not covered by traditional insurance.

Source: European Commission. (2023). *EU taxonomy for sustainable activities*.

4. Overview of Green Finance

Green finance is a green financing product created in co-operation between private financial institutions and development banks to finance environmentally friendly projects. Carbon funds generally operate in line with collective investment schemes and raise funds from clients for the development of environmentally friendly projects. While carbon funds established by governments provide resources to countries in order to achieve the targets set out in the Kyoto Protocol, private carbon funds transfer cost-effective resources to institutions to help develop projects to combat the climate crisis and accelerate the process of adaptation to a low-carbon economy (UNEP FI, 2007, p.35).

Table 14: Key Components of Green Finance

Component	Description	Examples
Green Bonds	Bonds financing environmental projects	World Bank Green Bonds, European Investment Bank Green Bonds
Sustainable Banking	Banking system that takes into account environmental and social criteria	ESG investments, environmental risk assessment for credit
Green Insurance	Insurance products covering risks related to climate change	Natural disaster insurance, carbon offset insurance
Carbon Markets	Carbon emission trading markets	EU Emissions Trading System (ETS)
Environmental Investment Funds	Funds investing in sustainable projects	Green investment funds, sustainable equity funds

Source: World Bank. (2023). *Green bonds: Mobilizing the debt capital markets for climate solutions*. Washington, DC: World Bank.

The key components of green finance table presents in a structured way the key elements that drive sustainable financial practices. Green bonds are financial instruments specifically designed to provide capital for environmentally friendly projects and are typically issued by governments, development banks and corporations. As an important example, World Bank Green Bonds have been used effectively to finance climate-friendly initiatives, while European Investment Bank Green Bonds have supported renewable energy and infrastructure projects. Sustainable banking is when financial institutions integrate environmental, social and governance (ESG) factors into their decision-making processes. This ensures that loans and investments are aligned with environmental objectives, for example supporting the financing of renewable energy projects or businesses with a low carbon footprint. Many banks conduct environmental risk assessments before approving loans, ensuring that their financing supports sustainability efforts. Green insurance products provide financial protection against climate change-related risks; for example, natural catastrophe insurance supports companies and individuals rebuilding after hurricanes, floods and forest fires, while carbon offset insurance supports projects that offset carbon emissions. Carbon markets create financial incentives for emission reductions by enabling companies and countries to trade carbon permits. The EU Emissions Trading Scheme (ETS) is one of the largest and most established examples of a cap-and-trade system that incentivises businesses to operate within certain emission limits. Environmental investment funds channel capital into businesses and projects with strong environmental performance. Green investment funds typically invest in renewable energy, energy efficiency and sustainable agriculture projects, while sustainable equity funds aim to invest in environmentally responsible

companies. These financial instruments facilitate the global transition to provide capital for green projects and incentivise businesses to adopt sustainable practices.

Table 15: Development Timeline of Green Finance

Year	Development	Description
1997	Kyoto Protocol	Set emission reduction targets
2007	First Green Bond	Issued by the European Investment Bank
2015	Paris Agreement	Target set to limit global warming below 2°C
2016	G20 Green Finance Working Group	Co-operation for green financial policies launched
2020	EU Sustainable Finance Taxonomy	Criteria for environmentally sustainable investments defined

Source: European Commission. (2020). *EU taxonomy for sustainable activities: Technical report*. Brussels: European Commission.

The development timeline of green finance reveals important milestones that have shaped the evolution of sustainable financial practices and policies. Adopted in 1997, the Kyoto Protocol was one of the first major international agreements to combat climate change, setting legally binding emission reduction targets for developed countries. This development is considered as an important step recognising the need for financial mechanisms to support environmental sustainability. Ten years later, in 2007, the first green bond was issued by the European Investment Bank and this financial instrument, specifically designed to finance environmentally friendly projects, paved the way for the green bond market. It increased the ability of both public and private sector organisations to provide capital for climate-related initiatives. Adopted in 2015, the Paris Agreement, aiming to keep the global temperature increase well below 2°C compared to the pre-industrial period, emphasised the importance of financial flows compatible with low-carbon and climate-resilient development and accelerated the role of green finance in global economic strategies. Established in 2016, the G20 Green Finance Working Group has encouraged international cooperation for the development of green finance policies and demonstrated that sustainable financial systems are a critical element in achieving climate goals. Finally, in 2020, the European Union launched the EU Sustainable Finance Taxonomy, a comprehensive classification system for environmentally sustainable investments. This framework provides clear guidance to financial markets, ensuring that capital allocation is aligned with climate goals and reducing the risk of greenwashing. These milestones demonstrate the increasing integration of sustainability into global financial systems and the growing importance of green finance in the fight against climate change.

Table 16: Major Green Finance Policies

Politics	Country/Region	Key Features
EU Taxonomy	European Union	Framework for categorising sustainable investments
Green Banking Policy	China	Encourages banks to lend to sustainable projects
Principles for Responsible Investment (PRI)	Global	A set of principles for the integration of ESG criteria in investments
Green Bond Principles (GBP)	Global	Standard principles guiding green bond issuances
US Climate Finance Incentives	United States of America	Financial support mechanisms for renewable energy projects

Source: European Commission. (2020). *EU taxonomy for sustainable activities: Technical report*. Brussels: European Commission.

Major green finance policies play a critical role in shaping sustainable financial practices around the world by providing guidelines, incentives and frameworks for environmentally responsible investments. The EU Taxonomy, introduced by the European Union, is a comprehensive classification system that defines which investments are considered sustainable. In addition to ensuring that financial flows are aligned with environmental objectives, this framework reduces the risk of greenwashing by providing clarity for investors and businesses. China's Green Banking Policy encourages financial institutions to direct their capital towards sustainable projects, taking into account environmental sustainability. This policy aims to support the country's transition to a low-carbon economy. On a global scale, the Principles for Responsible Investment (PRI) provide voluntary sets of principles for investors to integrate environmental, social and governance (ESG) factors into their decision-making processes. These United Nations-backed principles aim to mainstream responsible investment practices that promote long-term sustainability. The Green Bond Principles (GBP), another globally recognised initiative, provides standardised guidance for the issuance of green bonds, ensuring transparency, reporting and directing funds to the right projects. These principles support the development of financial instruments that provide environmental benefits by increasing investor confidence. In the United States, the US Climate Finance Incentives contribute to the diffusion of clean technologies by providing financial support mechanisms for renewable energy projects and aim to reduce dependence on fossil fuels. When these policies are evaluated holistically, it is seen that governments and international organisations use financial mechanisms to promote sustainability, reduce climate risks and accelerate the transition to a greener economy.

4.4. Comparative Table of International Green Finance Policies

Table 17: Comparative Policy Approaches and Regulatory Frameworks in Sustainable Finance: EU, China, and USA

Country/Region	Policy Approach	Basic Regulatory Tools	Financial Instruments	Implementation Model	Monitoring and Reporting	References
European Union (EU)	Market-based, regulatory and transparency oriented	EU Taxonomy, Sustainable Finance Disclosure Regulation (SFDR), Corporate Sustainability Reporting Directive (CSRD)	Green bonds, ESG funds, sustainable investment funds, social impact bonds	Multi-actor and institutional structure, investor oriented	Mandatory reporting, third party verification, transparency standards	European Commission (2020). EU Taxonomy for Sustainable Activities.
China	State-led, centralised and planning-based	Green Finance System Guidelines, Green Bond Principles (CGBP), PBoC (Bank of China) policies	Green loans, green bonds, public infrastructure investment, financing low carbon projects	State-sponsored, led by financial institutions and the central bank	Inclusive regulations, bank reporting, government monitoring, market guidance for investors	PBoC (2020). Green Bond Endorsed Project Catalogue.
USA	Voluntary, market incentivised and private sector oriented	SEC ESG reporting guidelines (draft), various state-level sustainability standards	ESG funds, private sector-led green bond issues, sustainability bonds	Private sector-led, free market approach	Limited obligation, practices evolving with investor pressure, optional standards for ESG reporting	US Securities and Exchange Commission (2022). Climate Change Disclosures.

Source: U.S. Securities and Exchange Commission (SEC). (2022). *Proposed rule: Enhancement and standardization of climate-related disclosures for investors*. Washington, DC: SEC.

European Union (EU): While shaping green finance with a market-based approach, the EU prioritises transparency and oversight to ensure investor confidence. The EU

Taxonomy helps investors make the right choices by categorising environmentally sustainable economic activities. The EU also requires financial institutions and large companies to report on environmental, social and governance (ESG) criteria through the Sustainable Finance Disclosure Regulation (SFDR) and the Corporate Sustainability Reporting Directive (CSRD). Thanks to these regulations, the amount of assets managed by sustainable investment funds has increased significantly and these funds have been directed towards environmentally friendly projects (European Commission, 2020). However, analyses have also revealed that some sustainable funds invest in companies that harm the environment, which demonstrates the importance of ethical investments.

China: China has adopted a more decentralised approach to green finance and is promoting large-scale environmental transformation through state-backed financial systems. The People's Bank of China (PBoC) and the China Banking and Insurance Regulatory Commission (CBIRC) have developed various policies to promote green loans and green bonds. With the Green Bond Principles (CGBP) issued in 2022, China encourages the issuance of green bonds in accordance with international standards. In 2023, the total volume of green loans in China reached 25 trillion yuan (approximately USD 3.48 trillion) (PBoC, 2020). The rate of return on such investments has been higher compared to conventional loans, indicating that green finance supports economic sustainability.

United States of America (USA): The US promotes green finance through a more private sector and market-based approach. Here, SEC ESG reporting guidelines and state-based sustainability standards require companies to report environmental impact and provide transparency. However, a binding framework has not yet been established at the federal level. In the US, green financial instruments are diversifying with market-based products such as ESG funds, green bonds and sustainability bonds. However, reporting processes are mostly voluntary and developed under the leadership of the private sector (US Securities and Exchange Commission, 2022).

Table 18: Green Financing Instruments and Application Areas

Financial Instrument	Description	Application Area
Green Bonds	Debt instruments financing environmentally friendly projects	Renewable energy, sustainable transport
Green Loans	Loans compliant with environmental sustainability criteria	Energy efficiency projects, environmentally friendly production
Carbon Credits	Instruments to incentivise carbon reduction projects	Forest protection, renewable energy investments
Social Impact Bonds	Bonds issued for projects providing environmental and social benefits	Combating climate change, water resources management

Sustainable Investment Funds	Funds investing in environmentally responsible companies	Green technology companies, low carbon economy projects
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Source: European Investment Bank (EIB). (2022). *EIB green bonds: Mobilizing finance for sustainable growth*. Luxembourg: EIB.

Green financing instruments play a vital role in providing capital for sustainable projects, and each has a different function in tackling environmental challenges and promoting climate-conscious investments. Green bonds are debt instruments specifically designed to finance environmentally friendly projects and offer investors the opportunity to support initiatives such as renewable energy development and sustainable transport infrastructure. They are widely used by governments, companies and financial institutions to raise funds for climate-related projects. Green loans operate in a similar way, but are loans rather than bonds and provide financial support to businesses committed to sustainability. These loans are often used for energy efficiency projects, environmentally friendly production processes and environmentally sustainable infrastructure developments.

Another important instrument of green finance is carbon credits. These instruments are market-based incentives that encourage the reduction of greenhouse gas emissions. Companies can offset their emissions by investing in carbon reduction projects such as forest protection, afforestation and renewable energy investments. Social impact bonds can be used for projects that provide not only environmental but also social benefits. These bonds are effective in areas such as combating climate change and sustainable water resources management. Finally, sustainable investment funds contribute to the low carbon economy by investing in environmentally responsible companies. These funds target green technology firms, clean energy initiatives and businesses with high environmental, social and governance (ESG) standards.

These financial instruments facilitate the transition to a more sustainable global economy by integrating environmental considerations into investment and lending practices.

Table 19: Green Financing Market Size by Country (2023 Data)

Country/Region	Green Bond Market (\$ Billion)	Green Loan Volume (Billion \$)
China	200	450
USA	150	300
European Union	250	500
Japan	80	150
India	50	100

Source: Climate Bonds Initiative (CBI). (2023). *Green bonds global state of the market 2023*. London: Climate Bonds Initiative.

The market size of green finance varies widely in different regions, depending on the commitment to sustainable investments, policy frameworks and the level of financial sector participation. In 2023, the European Union leads the green finance market with a green bond market of USD 250 billion and a green loan volume of USD 500 billion. This leadership is supported by the EU's comprehensive regulatory frameworks such as the Green Deal and the EU Taxonomy.

China closely follows the EU with a bond volume of USD 200 billion and a loan volume of USD 450 billion. This reflects the importance China attaches to environmental policies and the impact of state-sponsored green financing initiatives. The US is another major player in green finance with a green bond volume of USD 150 billion and a green loan volume of USD 300 billion. The country's interest in climate finance is strengthened by tax incentives and government-backed renewable energy programmes.

Japan, on the other hand, with a green bond volume of USD 80 billion and a green loan volume of USD 150 billion, shows a steady growth thanks to its corporate sustainability initiatives and technological advances in the field of clean energy. India, as an emerging economy, is gaining a foothold in green finance with \$50 billion in bonds and \$100 billion in loans, focusing on renewable energy and sustainable development projects thanks to international investments and government policies .

This data demonstrates the critical role green finance plays in sustainable economic growth and its growing adoption around the world. The growth of the market demonstrates that green finance is increasingly recognised as a key tool in the fight against climate change.

Table 20: Challenges and Solution Suggestions in Green Finance

Difficulty	Description	Possible Solutions
Risks of Green Investments	Environmental projects may be less profitable in the short term	Government incentives, private sector guarantees
Lack of Transparency	Uncertainty as to whether investments are truly sustainable	Stricter green financing standards
Regulatory Differences	Differences in green finance regulations between countries	Establishment of global standards (e.g. EU Taxonomy)
Greenwashing	Companies misrepresent their products as environmentally friendly	Independent verification mechanisms

Source: Climate Bonds Initiative (CBI). (2023). *Green bonds: Market trends and challenges*. London: Climate Bonds Initiative.

Green finance faces several challenges that may hinder its effectiveness and mainstreaming, and therefore targeted solutions are necessary to increase the credibility and impact of sustainable investments.

One of them is the high investment risk of environmental projects as they are generally less profitable in the short term. This can make it difficult for investors to allocate capital to sustainable initiatives. Government subsidies and private sector guarantees can make green investments more attractive by reducing these financial risks.

Another important problem is the lack of transparency. Investors may find it difficult to understand whether a financial product is truly sustainable. This uncertainty can be addressed by implementing more stringent green finance standards, so that funds and projects labelled green meet clear and measurable environmental criteria.

Moreover, differences in green financing regulations across countries lead to inconsistencies in sustainable investment practices at the global level. The establishment of global standards, such as the EU Taxonomy, can provide clarity and consistency to investors by contributing to the harmonisation of definitions and classifications.

One of the most debated issues in green finance is greenwashing. When companies misrepresent their environmentally insensitive products and investments as sustainable, it may damage investor confidence. Independent audit mechanisms, third party audits and certification systems should be implemented to prevent this situation.

Establishing coherent policies, transparency measures and regulatory frameworks to address these challenges is critical to enhance the credibility of green finance and accelerate the transition to a sustainable global economy.

Table 21: Sectoral Breakdown of Green Financing Utilisation (2024)

Sector	Share of Green Financing Sources (%)
Renewable Energy	40%
Transport and Logistics	20%
Green Buildings and Urban Development	15%
Agriculture and Food Security	10%
Water and Waste Management	10%
Other	5%

Source: Asian Development Bank (ADB). (2023). *Green finance in Asia: Sectoral breakdown and trends*. Manila: ADB.

By 2024, the sectoral breakdown of green finance utilisation reveals the key areas of sustainable investment and reflects global priorities for combating climate change and ensuring environmental sustainability. The renewable energy sector receives the largest share of green finance resources, 40 per cent, as the transition to clean energy is still one of the top priorities worldwide. Investments in this sector finance projects that reduce reliance on fossil fuels and lower carbon emissions, particularly solar, wind and hydropower. The transport and logistics sector ranks second with a 20% share, driven by the deployment of electric vehicles, the development of sustainable public

transport systems and infrastructure improvements to reduce carbon footprint. Green buildings and urban development has a share of 15% and these investments focus on energy efficient construction practices, smart city projects and real estate initiatives with low environmental impact. The agriculture and food security sector accounts for 10% of green finance and includes initiatives that support ecological balance, such as sustainable agricultural practices, climate-resilient crops and deforestation reduction. Similarly, water and waste management also accounts for 10%, with projects in this area supporting circular economy strategies to increase water savings, promote waste recycling and minimise resource use. The remaining 5% is directed to other areas, which may include innovative environmental technologies, biodiversity conservation and emerging sustainable sectors. This distribution reflects the global approach to achieving a more sustainable economic transition by reducing carbon emissions, increasing climate resilience and promoting resource efficiency in various sectors.

Table 22: Global Green Financing Standards

Standard	Description	Implementing Organisations
EU Taxonomy	Framework for the categorisation of environmentally sustainable investments	European Commission
Green Bond Principles (GBP)	International standards for green bond issues	ICMA (International Capital Markets Association)
Task Force on Climate-related Financial Disclosure (TCFD)	Climate-related financial reporting framework	G20, Financial Stability Board (FSB)
Principles for Responsible Banking (PRB)	Guidelines for aligning banks with sustainability goals	UNEP-FI (UN Environment Programme Finance Initiative)
Principles for Responsible Investment (PRI)	Integration of ESG (environmental, social and governance) factors into investment processes	United Nations-backed initiative

Source: International Capital Markets Association (ICMA). (2022). *Green Bond Principles*. London: ICMA

Global green finance standards play an important role in guiding the financial sector towards sustainability. These standards provide frameworks and guidelines for environmentally responsible investments and practices. The EU Taxonomy is one of the most comprehensive frameworks for categorising environmentally sustainable investments. This system, implemented by the European Commission, helps investors identify activities that make a significant contribution to environmental objectives, ensuring that financial resources are channelled in line with the EU's climate and environmental objectives.

The Green Bond Principles (GBP) are internationally recognised standards for the issuance of green bonds. These principles, established by the International Capital Markets Association (ICMA), ensure transparency, accountability and credibility in

the allocation of funds to projects with positive environmental impacts. This contributes to the growth and credibility of the green bond market.

The Task Force on Climate-related Financial Disclosure (TCFD) provides a reporting framework for companies and financial institutions to disclose the climate-related risks and opportunities they face. Supported by the G20 and the Financial Stability Board (FSB), the TCFD promotes consistent and reliable reporting, allowing investors to make informed decisions about climate risks.

The Principles for Responsible Banking (PRB) provide guidance for banks to align their strategies with sustainability goals. Supported by the United Nations Environment Programme Finance Initiative (UNEP-FI), these principles encourage banks to contribute to sustainable development and the global climate agenda.

Finally, the Principles for Responsible Investment (PRI) are principles that encourage investors to integrate environmental, social and governance (ESG) factors into their investment decision-making processes. This United Nations-backed initiative promotes responsible investment by aiming to direct capital flows towards sustainability.

Together, these standards provide a comprehensive framework that promotes transparency, accountability and alignment with global environmental and social goals, and supports the global transformation towards sustainable finance.

5. Method

5.1. Purpose of the Study

The aim of this study is to analyse the global development of green finance and to reveal its role in achieving environmental sustainability goals. In this context, the diffusion process of green finance instruments (e.g. green bonds, sustainability-linked loans, carbon markets, etc.), their effectiveness and their impact on the financial system are analysed. In addition, green finance policies in different countries, such as the European Green Deal, China's Green Banking Guidelines and Turkey's green economy policies, are analysed comparatively and their effects on economic growth, environmental protection and transformation of financial markets are evaluated.

The ultimate aim of the study is to contribute to the formulation of more effective financial policies in achieving sustainable development goals by revealing the current status and future directions of green finance strategies developed at national and international level.

5.2. Importance of Research

Increasing environmental problems on a global scale, climate change and depletion of natural resources make it difficult to achieve sustainable development goals and in this context, green finance stands out as an important solution tool. This research is important in terms of revealing the critical role of green finance in supporting

environmentally friendly projects, its impact on the transformation of financial systems and its relationship with sustainable economic growth.

Moreover, comparative analyses of green finance policies adopted in different countries provide strategic insights that can be instructive for developing countries such as Turkey. Analysing exemplary policies such as the European Green Deal and China's Green Banking Guidelines can facilitate the adoption of effective practices at the international level.

Another importance of this study is that it provides a comprehensive perspective to policy makers, financial sector representatives and academia on how financial resources can be used more effectively and efficiently in line with environmental sustainability goals. Addressing the economic, environmental and social dimensions of green finance in a holistic manner will contribute to the efforts to produce long-term and permanent solutions in financing sustainable development.

5.3. Research Methodology

This study adopts a policy review approach. Within the framework of the development, basic principles and application areas of the green finance concept, national and international policies adopted in various countries are comparatively analysed. In particular, existing policy instruments are evaluated through examples such as the European Green Deal, China's Green Banking Guidelines and Turkey's renewable energy support mechanisms, and the effects of these policies on green finance practices are analysed.

6. Discussion

The role of the financial sector in combating the global climate crisis is increasing and environmentally friendly financial instruments are being developed in different layers of the banking system. Green finance is a holistic approach that targets not only environmental sustainability goals but also the long-term resilience of the financial system (UNEP FI, 2016). In this context, the development of green finance can be discussed with specific instruments shaped in retail, corporate and investment banking.

Retail banking plays an important role in promoting environmental awareness through products for individual customers. Green credit cards are products that encourage individuals to reduce their environmental impact and transfer a portion of the proceeds from their spending to environmental projects. For example, the DO Black card, developed in partnership with MasterCard and Doconomy, offers carbon footprint tracking and allows the user to limit consumption (Doconomy, 2020).

Green loans are low-interest loans that facilitate the financing of green investments, especially for energy efficiency, solar panel installation or environmentally friendly housing purchases. In Turkey, some public banks offer green loan products that support individual energy efficiency projects (Ziraat Bank, 2023).

Corporate banking plays a critical role in green transformation by providing solutions for the capital needs of companies and large organisations. Green bonds are the most prominent instruments in this field. The proceeds from these bonds are pledged to be used exclusively for environmentally friendly projects. This process, which started in 2007 with the issuance of the first green bond by the European Investment Bank, has created a global market exceeding USD 2 trillion by 2022 (Climate Bonds Initiative, 2023).

Green securitisation is the transformation of cash flows arising from environmental projects into financial products and offering them to investors. For example, securities issued by pledging the revenues from renewable energy power plants as collateral provide environmental contributions to both banks and investors (OECD, 2021).

Within the framework of investment banking, green venture capital covers venture capital investments in start-ups based on environmental technologies. These investments contribute to the growth of companies operating in areas such as energy storage technologies, clean energy and waste management. The European Investment Fund (EIF) has supported many green start-ups with capital support under Horizon 2020 (European Commission, 2022).

Carbon trading, on the other hand, allows emission reductions to be valorised economically. Emissions trading systems (ETS) assign specific carbon emission quotas to companies and allow these quotas to be traded. The European Union Emissions Trading System (EU ETS) is the most advanced example in this field and the incentive effect of carbon pricing on green investments is increasing (EU ETS Report, 2023).

The effectiveness of green financing policies is not only related to regulatory frameworks, but also to the innovative financial instruments introduced at each layer of banking. Micro instruments that raise awareness of individuals in retail banking, bonds and securitisation methods that fund large-scale projects in corporate banking, and venture models that channel capital to green technologies in investment banking reveal the holistic nature of green finance. This tripartite structure constitutes the pillars of a sustainable financial system.

Conclusion

Green finance refers to the development of financial instruments that support environmental sustainability and contribute to combating global threats such as climate change. The growth of this field has gained momentum in parallel with the increasing global awareness of environmental problems and the increasingly evident economic and ecological impacts of climate change. The main objective of green finance is not only to encourage investment in environmentally friendly projects, but also to ensure a holistic financial system transformation that takes environmental risks into account. In this context, green finance has become an important tool for creating an environmentally sensitive economy that supports sustainable development.

Instruments such as green bonds, green loans and environmentally friendly investment funds play a critical role in the development of green finance. Following the first green bond issued by the World Bank in 2007, such financial instruments have been adopted by a wider range of investors and have led to the acceptance of green finance in financial markets. Moreover, the increase in investment strategies that take environmental risks into account has increased the attractiveness of sustainable investments. However, for green finance to become mainstream, governments and financial institutions need to work collaboratively to strengthen the regulatory framework.

International policies accelerate the development of green finance. Global agreements such as the Paris Climate Agreement and the European Union's Green Finance Action Plan encourage the adoption and expansion of green finance worldwide. Such policies ensure that financial resources are channelled towards environmentally sustainable projects and set standards for green investments. At the same time, regulations on limiting carbon emissions and supporting environmentally friendly investments also contribute to the growth of green finance.

However, for green finance to function effectively, stronger regulations are needed to systematically assess environmental risks and increase transparency with financial products. Adopting green finance not only as a strategy that aims to reduce environmental impacts but also as an approach that supports sustainable economic development will be a critical step in achieving global environmental goals. Accordingly, for green finance to become more widespread, the public and private sectors need to increase their cooperation, develop innovative financial instruments and report environmental risks more comprehensively.

As a result, green finance not only encourages investment in environmentally friendly projects but also serves as an important tool to achieve global sustainable development goals. Creating effective solutions against global threats such as climate change and environmental degradation and increasing green investments will only be possible if the financial system takes environmental risks into account. In this process, the growth and expansion of green finance will contribute not only to ensuring environmental sustainability, but also to a more equitable and balanced economic development process.

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