



The European Central Bank's role in promoting green finance.

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Abstract ;

The purpose of this research is to draw attention to the European Central Bank's role in advancing green finance. We started by outlining the conceptual framework of green finance, along with associated ideas, its significance, and the difficulties it faces. After that, we discussed how central banks can help with the green transformation by implementing a number of tools and policies. In the last section, we discussed the European Central Bank's experience with green finance. One of the study's most notable conclusions is that central banks can contribute significantly to the development of environmental sustainability by implementing policies that support green finance. The European Central Bank's experience is one of the first in this area.

Article info

Received

18/06/2025

Accepted

10/02/2026

Keyword:

- ✓ Green finance
- ✓ Central banks
- ✓ Green Monetary Policy

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1. Introduction

Central banks are providing significant support for the transition to a green economy and green finance. As with their previous directives, this is a contemporary strategy. Without compromising their core objectives, these banks seek to steer their financial systems toward environmental sustainability. One of the most prominent and important central banks in this regard is the European Central Bank, whose experience we highlight in this study. Therefore, we ask: What tools or processes does the European Central Bank use to promote green finance?

The following hypothesis can be put forward to answer this question:

To address green finance, the European Central Bank is adjusting its monetary policy tools.

1.1 Importance of study :

The study is important because it adds to the body of knowledge on green finance and demonstrates how central banks can effectively promote green finance within the limits of their authority.

1.2 Study methodology:

The descriptive analytical approach, which includes both presenting a case study and concepts, is the foundation of this investigation.

2 . The theoretical framework of green finance.

Recently, the world has witnessed an increase in environmental and climatic changes, as well as the depletion of natural resources. This resulted in a decline in the quality of life, prompting many countries around the world to implement programs and plans to transition to environmentally friendly products and practices. Thus, there has been a surge of interest in green finance as a tool for development, reducing the damage caused by environmental pollution, and transitioning to sustainable green economies.

2.1 The defination of green finance .

Green finance encompasses all lending and investment aimed at mitigating the effects of climate change while also achieving other environmental goals such as biodiversity management.(World bank group,2021).

Green finance refers to any type of investment or lending that considers environmental impact and promotes environmental sustainability.(U.Volz ,et al., 2020,p4).

Green finance is the process of greening the financial system by incorporating climate and environmental considerations and identifying and managing the associated financial risks .(European parliament staff,2021,p3).

Therefore, green finance can be defined as a set of financial products and services that consider environmental factors at all stages, including lending, risk management, encouraging environmentally responsible investments, and incentivizing businesses and industries that reduce carbon emissions.

2.2 Concepts related to green finance .

The concept of green finance intersects with a variety of other financial concepts that fall within the framework of environmental sustainability, which we present as follows:

1/ Environmental Finance: Environmental finance is the strategic allocation of financial resources and investments to protect and utilize the environment and natural resources.

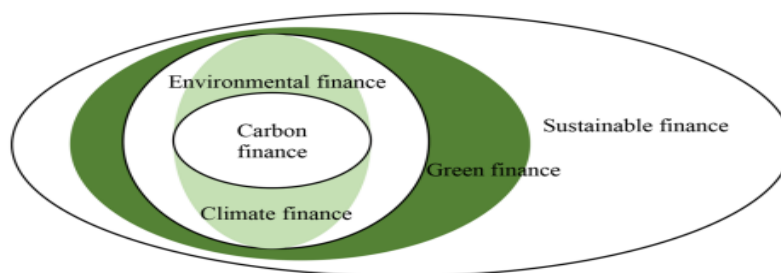
(Samuel & Kwado,2023,p4).

2/ Sustainable finance: is finance that considers environmental, social, and governance (ESG) factors when making investment decisions aimed at achieving sustainability in economic activities and projects.(Alex,2021,p3).

3/ Climate finance: is a type of green finance that seeks to mitigate the effects of climate change and lower emissions.(Dr.Nannette,2014,p2), and comes from a wide range of public, private, and alternative sources.

4/Carbon finance: is an innovative financing tool that enables the trading of carbon credits, which represent financial values of carbon emissions, to finance innovative projects that provide sustainable energy.(François & Eduardo ,2024,p5).

Figure1:. The relationship between green finance and related finances



Source:Die &Christopher,2024,p15.

2.3 why green finance is important.

Green finance provides numerous economic, environmental, and societal benefits. It offers and expands access to environmentally friendly products and services(Gauri,2023,p15), Increased green finance has the potential to reduce fossil fuel activities and accelerate the transition to a low-carbon economy (Ozili,2022,p6), The benefits of green finance can be summarized as follows (Sushma,2021,p6):

- 1) Effective energy management entails rationalizing energy consumption and utilizing renewable sources.
- 2) Environmental protection: by lowering pollution, adapting to climate change, and conserving biodiversity.
- 3) Enhancing reputation: By incentivizing socially responsible activities and providing investment opportunities.
- 4) Attracting Foreign Direct Investment (FDI): By attracting foreign capital that is interested in green investment products.

2.4 The prouduct of green finance:

The process of implementing the green financial system is based on a set of financial tools that enable it from a commercial and market perspective, which can be summarized as follows:

1. Green Credit : Commercial banks offer low-interest financing lines to support green projects (Sharif & Vijay, 2018, p12);
2. Green Insurance : An effective financial tool for managing environmental risks associated with natural disasters and climate change, such as floods, storms, etc;
3. Green Bonds : A direct financial instrument issued by international organizations, governments, or financial institutions to support green projects, with preferential interest rates, tax exemptions, and high liquidity;
4. Green Venture Capital Funds: It is a financial instrument for small and medium-sized companies that do not qualify for listing on the stock exchange, and represents equity stakes in large market risk companies and environmentally-oriented high-tech companies (Zhuo & Zhang, 2014, p38,39).

2.5 the challenges of green finance:

The primary challenges in green finance are focused on:

- Green investment: Private companies prioritize profits over the environment, making it difficult to implement environmentally friendly green projects and practices (Sarfaraz & Saroj, 2015, p3);
- Greenwashing occurs when products, services, or financial instruments are promoted as green despite failing to meet environmental and climate standards in order to mislead investors (Chen & Serena, 2023, p10);
- Lack of a clear organizational framework: There are no specific laws and regulations for evaluating green projects, nor are there any specific policy measures for regulating green investment, which impedes the growth and development of the sector (Sushma, p10);
- Lack of green capital: Public financial sources will not be sufficient to support a green transition and there is an increasing need for private capital.
- Green investment projects have a long time horizon, often more than a decade, making them unsuitable for short-term savers or investors (Kathrina & Nannette, 2016, p2).

3. The role of central banks in green finance.

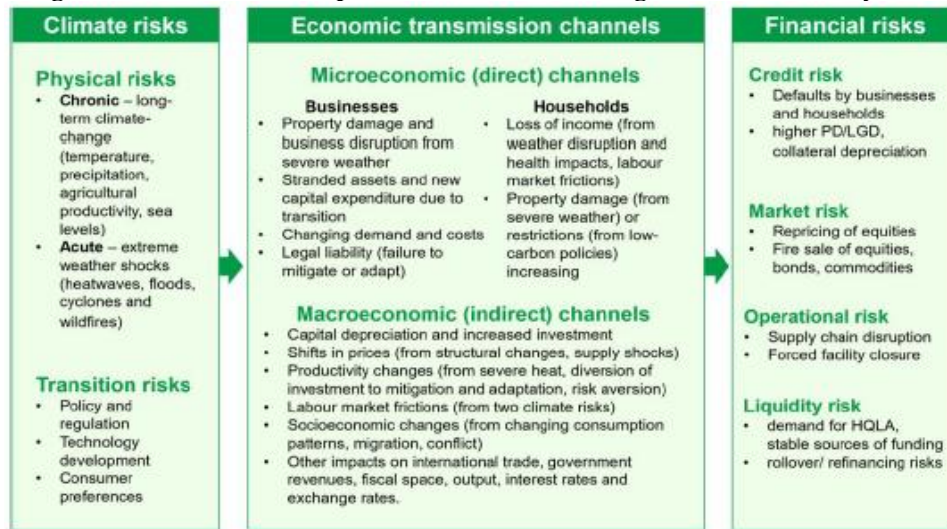
Given the growing phenomenon of climate change and the resulting natural and environmental disasters, which have direct and indirect negative effects on price stability, central banks have taken on a greater role and responsibility in mitigating these effects and improving financial stability. They are pursuing the transition to green economies through a series of specific measures and policies that are consistent with their traditional goals, so as not to deviate from their primary function.

3.1 The Traditional and Modern Roles of Central Banks.

Since the 1990s, central banks have focused their mandate on maintaining price stability, with an inflation rate of 2%, until the 2008 financial crisis, which highlighted the importance of maintaining overall financial stability in order to avoid similar crises (Frank & Josh, 2017, p3). With the increasing ramifications of climate change, many central banks have realized that their financial systems may be exposed to financial risks as a result of climate change, which has direct consequences for price stability, such as fluctuations in energy and food prices, as well as the occurrence of what is known as thermal inflation caused by global warming. As a result, central banks are under increasing pressure to incorporate environmental considerations into their monetary policy (Antoine, 2022, p35).

There are two types of financial risks associated with climate change: physical risks and transition risks, as summarized in the figure below:

Figure 2.: The relationship between Climate Change and Financial System.



Source :S.Inogamov &Shodieva ,2024, p6.

From the table above, it is clear that climate change risks are of two main types: physical risks (due to chronic and acute climate changes) and transition risks (due to technological transformation, for example, the elimination of some productive assets), and that these risks can be transmitted through economic channels at the micro level directly (individuals and families) and at the macro level indirectly (such as financial and labor markets, etc.), with the latter.

3.1 Central banks' tools to support green finance.

Central banks play an important role in achieving environmental sustainability by financing environmentally friendly projects that help to reduce carbon emissions, as part of the green finance framework. To fulfill this function, central banks rely on a set of tools and mechanisms that can be used in this context, including:

- Green credit allocation tools.
- Green macroprudential tools.
- Central banks' green initiatives.

3.1.1 Green Credit Allocation Tools:

Credit allocation policies have long been important in developing and emerging economies, particularly in the 1950s, 1960s, and 1970s. They are among the most important forms of financial oversight used by central banks to direct lending to key sectors for economic development.

This policy is intended to promote sustainability and green growth. We distinguish a set of tools with explicit credit guidelines, as follows:

1. Targeted Refinancing Lines: These refinance commercial banks on preferential terms based on specific asset classes (for example, green assets) in order to encourage them to lend to priority sectors (Simon & Josh, (2017), p13).

2. Green Differentiated Reserve Requirements: Another way the central bank can influence credit allocation is through the use of different reserve requirements, i.e., by influencing banks' ability to grant credit. If the central bank lowers reserve requirements, banks can increase their lending, and vice versa. Allowing a minimum reserve requirement on green assets could be a way to favor green investments over traditional high-carbon investments.

3. Minimum and maximum credit quotas: Mandatory credit quotas (minimum and maximum) aim to allocate or direct commercial banks' portfolios toward priority sectors. For example, minimum or "hard" lending quotas are imposed on green projects, while maximum credit quotas are imposed on carbon-intensive sectors to limit the flow of lending to these sectors (Fatima&AbdelFattah,2018,p246).

4. Preferential Interest Rates: Administrative interest rate setting is a powerful central banking tool for encouraging green investment and curbing unsustainable lending by setting lower interest rates for targeted sectors and higher rates for less favored sectors, thereby reducing financing (Simon &Ulrich,2018,p10).

3.1.2 Green Macprudential Policy Tools:

Green macroprudential policy seeks to establish regulatory frameworks for the green credit-granting process. The primary goal of this policy is to protect the financial system from systemic risks that could jeopardize its stability. Below is a detailed breakdown of the tools used in this regard(Economic and Social Commission for Asian and The Pcific,2016,p28):

1. Stress Tests: Stress tests are important macroprudential tools because they simulate various financial instability scenarios, such as the sudden re-pricing of carbon-intensive assets. Within this framework, carbon stress tests are used to identify and assess financial institutions' exposure to carbon-intensive assets, as well as to identify and address weaknesses and shortcomings.

2. Countercyclical Capital Returns: Countercyclical capital returns are designed to mitigate the effects of the financial cycle during boom and bust periods. In terms of environmental risks, countercyclical capital returns can help to mitigate the potentially negative pricing effects of a carbon bubble.

3. Sector Leverage Ratio: This tool identifies carbon-intensive assets and assigns risk weights (higher/lower) based on carbon intensity, allowing for appropriate credit allocation by sector (Prachant,et al., 2019,p4).

3.1.3 Central Bank Green Initiatives:

In addition to the previously mentioned tools, central banks are stepping up and bolstering their efforts to green the financial sector. This is a component of a broader effort to work with other organizations to improve the banking system's capacity to function in this area. The following is an outline of these initiatives (Simon &Josh, p16-17):

1. Green Finance Guidelines: As regulators of financial markets, central banks have the authority to encourage and assist these markets, especially those for green bonds. In order to promote this kind of bond as a way to fund green projects, they can provide banks with guidelines in this area, such as the General Guidelines for Green Bonds. Bank policies and procedures, whether required or voluntary, are often included in these guidelines;

2. Central Bank Collaboration with Development Banks: By buying their stocks, bonds, or creating bond markets, central banks have helped specialized financial institutions expand. Development banks, especially in impoverished nations with high levels of debt, can assist in funding economies' shift to green finance. Private capital is increased and risks are reduced when they are present. Through the issuance of green bonds and the application of green finance standards, they can also affect market dynamics;

3. Green Growth and Green Finance Research: Central bank publications are crucial for conducting green finance and growth research due to their highly skilled research teams and availability of market data;

4. Organizing workshops to increase banking capacity: Central banks support and enhance expertise, especially in the areas of risk assessment and green lending, by holding workshops and seminars for bankers on environmental risk assessment and green finance as part of their efforts to green the financial system;

5. Joining the IFC's Sustainable Banking Network: This is a voluntary network of banking associations and financial regulatory bodies that encourages sustainable finance and offers counsel and direction in this field, enabling nations to gain from one another's experiences.

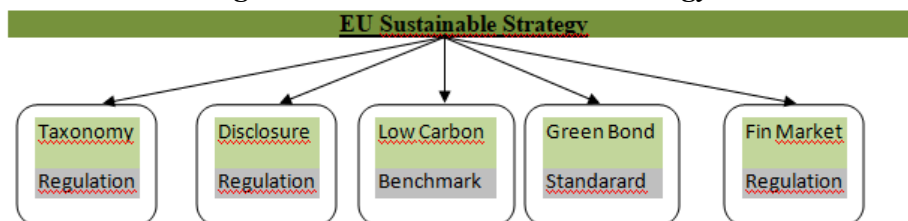
4. The ECB's experience with green finance(case study) .

As part of the European Union's European Green Deal, which includes a set of important legislative proposals to support the region's green transition, the European Central Bank (ECB) is stepping up its efforts to green the financial sector. The European Union has also adopted initiatives to streamline the transition to a low-carbon and more sustainable economy by 2050.

4.1 The EU's green transition strategy

Since March 2018, the European Commission has released a set of recommendations on sustainable finance that seek to improve financial market disclosure and transparency, develop financial instruments, and reroute capital towards socially and environmentally sustainable activities. The following are some of the topics that these recommendations address:

Figure3: The EU Sustainable Strategy.



Source :Volker,2021 ,p5,

1. The Taxonomy regulation (November2019):

includes the categorization of general economic activity in Europe, which comprises seven sectors: construction, information and communication technology, industry, agriculture, industry, electricity, gas, steam, air conditioning, water, and transportation (Anne-claire,2020,p9).

The following six goals are among the objectives of the Taxonomy regulation:

- Reduction of climate change impacts;
- Adaptation to climate change;
- Preserve and maximize the utilization of marine and hydrological resources;
- Change to recycling and a circular economy;
- The prevention and control of pollution;
- protecting ecosystems and biodiversity(Dylan & Cormac,2021,p15).

2.The Sustainability Related Finance Disclosures Regulation (SFDR) :

In order to integrate sustainability risks and impacts into investment policymaking and to promote environmental and social attributes, the Regulation on Disclosures sets uniform guidelines for investors in financial markets regarding transparency and disclosure of information pertaining to sustainable financial products(David,et al., 2024,p14).

3.Low Carbon Benchmark :

The regulation, which targets pension funds, institutional investors, and equity investors, amends EU Regulation 2016/1011 and was published in December 2019. For this regulation, two new indices have been added :

- EU Climate Transition Benchmark
- EU Paris Aligned Benchmark

In accordance with the EU Climate Transition Benchmark and the Paris Agreement's objectives to limit global warming, both indices seek to weight the assets that make up their benchmark portfolios in a way that lowers carbon emissions (Natacha,2020,p13).

4.Green Bonds Standard :

In June 2019, this standard was created to conform to industry best practices in Europe. Green bonds are a market tool that can be used to accelerate and redirect capital flows toward environmentally friendly investments and the EU's objectives (EU Technical Expert group on Sustainable Finance,2020,p3).

5.Financial Market Regulation:

Adopted in April 2021, a number of changes to the Financial Markets Regulations will take effect in October 2022. By giving investment advisors knowledge about sustainable financial products and their design, including the Directive on Collective Investment Funds in Convertible Securities, among other things, these amendments seek to stop environmental misinformation about sustainable financial products (Volker,2021,p10).

4.2 ECB's actions on green finance.

The main goal of the European Central Bank's monetary policy, according to Article 127 of the Treaty on European Union, is to preserve economic stability(Nela,2021, p474), The European Union shall promote the sustainable development of Europe, based on balanced economic growth, price stability, and a highly competitive social economy, with the aim of achieving full employment, social progress, a high level of environmental protection, and an improvement of its quality," according to Article 3 (emphasis added) of the Treaty on European Union, which also outlines the Central Bank's other mandates. Additionally, it will foster intergenerational solidarity (Eoin,2020,p2).

The following points encapsulate the main goals of the European Central Bank (Rens & Aleksandra,2021,p3):

- 1. Preserving price stability:** The European Central Bank must broaden its operational horizon in order to accomplish these goals because the effects of climate change are incompatible with price stability;
- 2. Supporting other goals:** As outlined in the Treaty on European Union, the European Central Bank is dedicated to promoting the general economic policies of the EU;
- 3. Reducing operational risks:** This includes the European Central Bank's dedication to risk management, especially in view of the climate change threats that jeopardize its holdings, which are primarily sovereign bonds.

4.2.1 The Role of ECB in macro prudential supervision:

Achieving financial stability is the aim of macroprudential regulation. A new strategy for green prudential regulation which addresses actions meant to achieve environmental sustainability has surfaced in response to the recent escalation of environmental crises. The European Central Bank has made this a

priority, and in addition to the climate stress tests that will be covered in this section, it has approved a set of regulations on capital reserves and leverage ratios.

1. The climate risk stress- testing :

In March 2021, the European Central Bank released the initial findings of its climate stress test, which evaluated banks' capacity to manage climate change risks through their financial market and loan portfolios. It released the more comprehensive stress tests in September; these have been conducted since 2022 and are overseen directly by the Bank. Among the most crucial analyses that support the more comprehensive stress test are:

1/Top-down exercise;

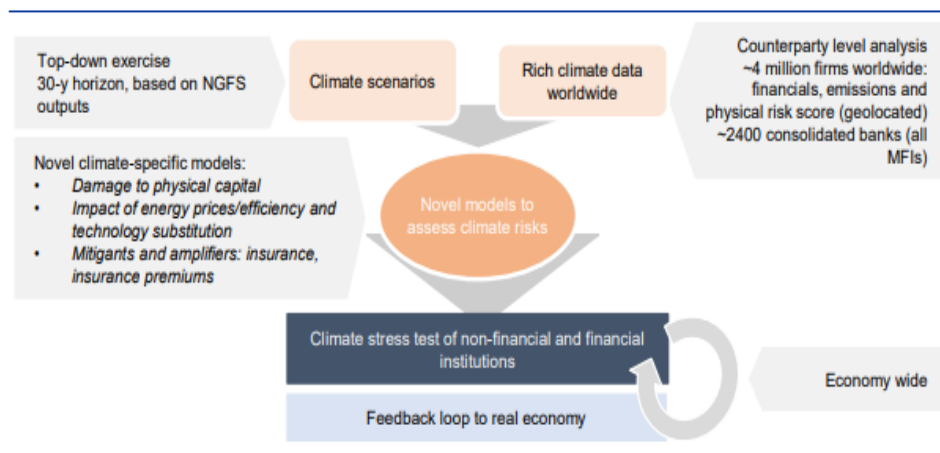
2/long-time horizon(30years);

3/three climate scenarios bases on the NGFS scenarios;

4/A detailed analysis takes into consideration the diverse and distinct characteristics of climate risks, both within and between sectors and geographical areas (European central bank,2021,p4,8).

A comprehensive climate stress test of the economy conducted by the European Central Bank is depicted in the figure below:

Figure 4: Key elements of the European Central Bank's climate stress test.



Source : Spyros et al.,(2021), p10.

The most significant acronyms for the key components of the extensive climate stress tests for the economy that the European Central Bank uses are depicted in the figure, as was previously mentioned. Based on NGFS scenarios, the figure shows the entire process from top to bottom over a 30-year timeframe (three scenarios are used: orderly transition scenario, disorderly transition scenario, and hot house world scenario), in addition to measuring the amount of emissions for 2,400 banks and 4 million businesses, and embracing rich climate data pertaining to physical and financial risks. This indicates that a large-scale analysis of both financial and non-financial institutions is part of the test. In order to achieve thorough feedback back to the real economy, other new assessment models that consider physical damage and its impact on energy factors and other mitigating factors are used based on all of these inputs.

2. the macroprudential capital buffer :

The European Central Bank has put in place a set of rules that include leverage ratios, capital buffers, and climate stress tests in response to its adoption of macroprudential measures. The absolute magnitude of climate transition risks in the euro area was used to estimate capital buffers(Florian et al.,2024,p2), based on the European Central Bank's 2023 top-down climate stress test, which used comprehensive information on the securities and loan portfolios of 107 significant euro area institutions. As a result, €52 billion was estimated to be the minimum transition risk and losses for 2023–2025(Martina et al.,2024,p22).

4.2.2 The Role of ECB in micro prudential supervision:

The European Central Bank uses a variety of prudential regulatory tools to strengthen and ensure the stability of individual financial institutions within this framework. The most significant of these tools we will discuss is the following:

1. Disclosure Requirements:

In order to guarantee appropriate capital allocation, the European Central Bank requires all financial institutions to disclose stress tests and excessive leverage risks. In order to guarantee that their assets are valued appropriately, it also mandates that businesses reveal climate-related financial risks in their yearly reports (per the guidelines set forth by the Task Force on Climate-related Financial Disclosures, or TCFD).

2. Environmental, Social, and Governance Standards :

In order to promote environmentally friendly investments, the European Central Bank released a draft of non-binding guidelines for banks in May 2022 on how to manage environmental, social, and governance risks and incorporate them into credit decision-making procedures(Nela,2021,p479).

4.2.3 The Role of ECB in green Monetary policy:

Through a variety of creative and modified instruments, the European Central Bank plays a significant role in incorporating environmental concerns into its monetary policy; the most significant of these will be covered in this section.

1. Green Quantitative Easing(GQE) :

One of the key instruments in the European Central Bank's strategy to green its financial portfolios is the asset purchase program, commonly referred to as the green quantitative easing policy. The European Central Bank has accelerated the shift from a dirty (carbon-intensive) portfolio to a green portfolio by implementing the asset purchase program (APP) and the pandemic emergency purchase program (PEPP) within this framework. Corporate bonds now make up the largest portion of the securities covered by the ECB's program as of July 2022, Since these securities are composed of loan pools, the majority of which are mortgage loans, the central bank has resorted to collecting data on the energy performance of buildings (EPBD) to ensure that its performance is in line with its goal of greening its financial portfolios (Jordi, 2023,p21).

2. Green collateral framework:

The European Central Bank announced its intention to include climate considerations in its collateral assessment in July 2022, taking a number of significant steps to achieve this goal:

1. The ECB incorporated climate risks into its capital reduction plan in 2022.
2. By the end of 2024, the ECB will decide what proportion of assets high carbon footprint entities can pledge as collateral.

Therefore, by evaluating them according to climate risk, the ECB seeks to promote green assets and eliminate carbon-intensive ones (Clarisse ,2023,p1,2).

3. Targeted longer-term refinancing operations:

The goal of the Green Long-Term Refinancing Operations (GLTRO) programs is to improve lending terms for significant green industries, including clean energy projects.

The first Targeted Long-Term Refinancing Operations (TLTRO) program was introduced by the European Central Bank in June 2014. Since then, there have been three major issues, additional issues, and exceptional issues brought on by the COVID-19 pandemic.

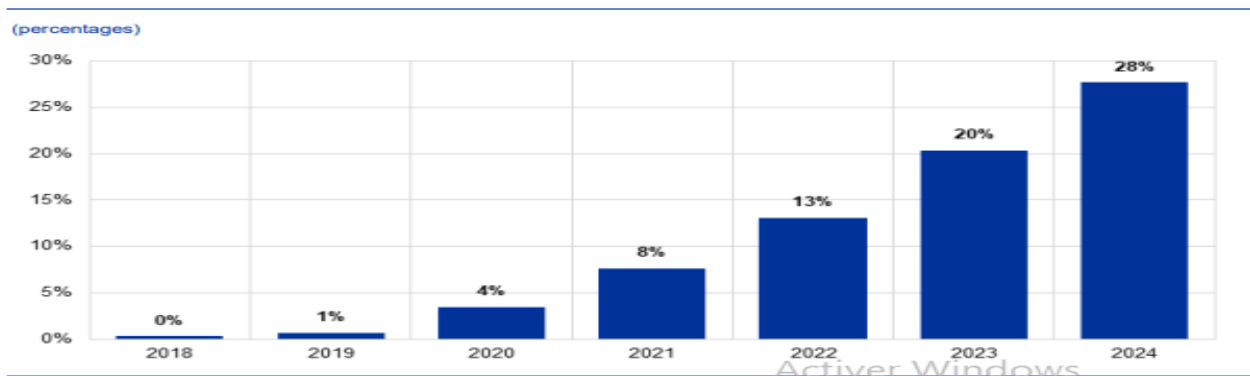
- The first TLTRO (2014-2016).
- The second TLTRO (2016-2017).
- The third TLTRO (2019-2021).
- Pandemic Emergency (2020-2021), (Pawel & Blazej, 2023, p. 580, 589).

5. Evaluating the results of the European Central Bank's experiment in green finance

This section will assess the outcomes of the European Central Bank's initiatives utilizing its green instruments to advance green finance in the Eurozone, highlighting the most significant results attained:

- The European Central Bank supported the implementation of the green bond standard, with green bond allocations rising from less than 1% of holdings in 2019 to 28% in 2024, significantly higher than the projected target of 25%. The ECB also aims to raise the green bond target to 32 % by the end of 2025 (European Central Bank, 2025, p. 35), as shown in the figure below:

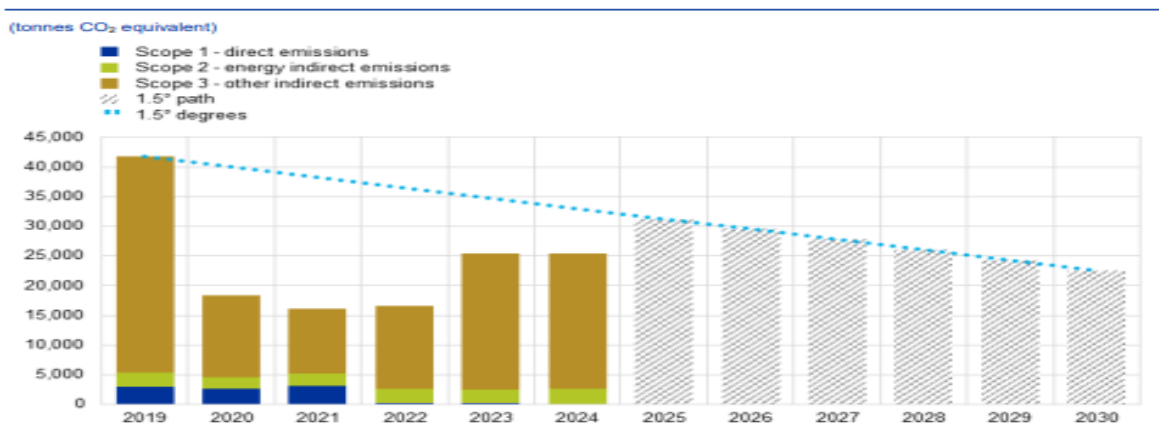
Figure 5: The evolution of the share of green bonds in the European Central Bank's money portfolio (2018-2024).



Source: ECB, (2025), p. 35

- The European Central Bank's operational carbon footprint has markedly decreased, diverging from the anticipated linear trajectory for decarbonization by 2030, to meet the Paris Agreement target of a 46.1% reduction in emissions (European Central Bank, 2025, p. 13), as depicted in the figure below:

Figure 6: ECB carbon footprint and Paris Agreement alignment.

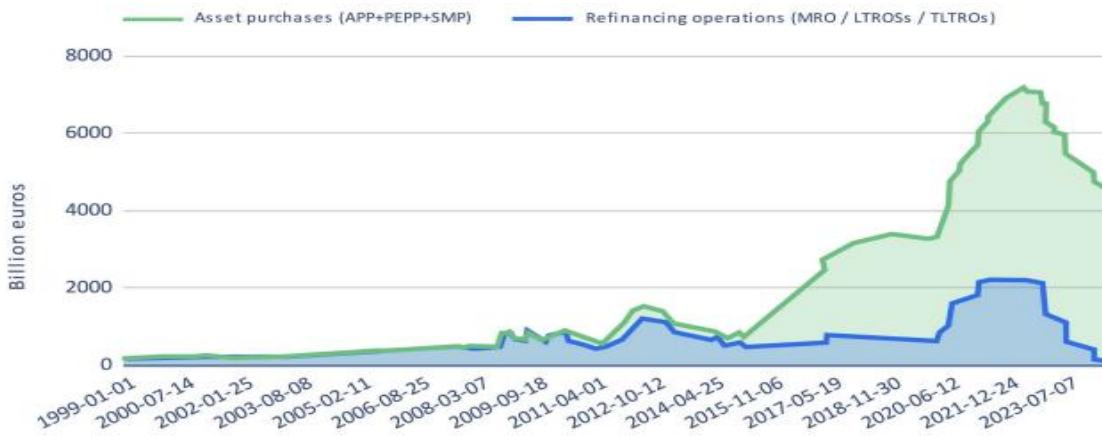


Source: ECB Environmental statement (2025), p. 13.

To clarify: The carbon footprint includes all greenhouse gases, not just carbon dioxide, and is converted to what is known as carbon dioxide equivalent(CO₂e) , which includes all direct and indirect emissions (such as energy production, transportation, manufacturing, etc.), as shown in the previous figure.

- The European Central Bank has excluded long-term green refinancing operations and green asset purchase programs, and has yet to implement a green interest rate, owing to insufficient reliable data on green lending, which has been restricted to crisis scenarios (such as the COVID-19 pandemic and the Russian-Ukrainian conflict), where it has functioned as unconventional monetary policy instruments rather than green initiatives, as depicted in the figure below:

Figure7 : Volume of European Central Bank refinancing operations 1999-2024



Source: Stanislas Jourdan et al..(2024) ,p18.

To clarify:

✓ Asset Purchase Programmes (**APP**: Asset Purchase Programme, **PEPP**: Pandemic Emergency Purchase Programme, **SMP**: Securities Markets Programme).

✓ Refinancing Operations : (**MRO** : Main Refinancing Operations, **LTROs** :Longer-Term Refinancing Operations, **TLTROs** : Targeted Longer-Term Refinancing Operations).

- The European Central Bank has conducted the first large-scale “**F it-F for -55**” climate stress test at the EU level (covering many sectors such as banks, insurance, pension funds, and investment funds). This test points to the EU’s goal of reducing net greenhouse gas emissions by at least 55 % by 2030. This analysis allows for a deeper understanding of the financial sector’s ability to support the green transition under challenging conditions(Saadah &Lovegrove,2024).

- The European Central Bank (ECB) strengthens its role in disclosure and transparency by publishing climate-related data in its investment portfolios and requires financial institutions to disclose climate risks. Annual climate disclosure reports are published, covering cash and non-cash portfolios and foreign reserves. These reports include details about the carbon footprint, exposure to climate risks, weighted average carbon intensity, and other factors(Pagliari,2025,p17). As a result of the ECB's disclosure and transparency process, total carbon emissions from institutional investments in the ECB Staff Pension Fund, distributed as follows (34% in equities and 26% in corporate bonds), were reduced by 9%(European central bank,2025,p5).

Based on the preceding presentation of the most important results achieved by the European Central Bank in supporting the green transition in the region, this role can be assessed as follows:

- The ECB's success in implementing the green bond standard, exceeding its planned target of 25% to 28% for 2024, reflects its commitment to supporting the transition;

- The ECB's reduced operational carbon footprint indicates it is on track to achieve its goal of reducing carbon emissions by 2030;
- The ECB's failure to include long-term financing operations and green asset purchase programs within its financial system greening efforts, limiting them to crisis situations;
- The ECB has made positive progress in climate stress testing by delivering comprehensive exercises, which are expected to become a practical indicator for future regulatory oversight of the European and global financial system;
- The ECB plays a crucial role in transparency and disclosure regarding climate risks, supporting market discipline through sound decisions based on the reports it mandates.

6. CONCLUSION

This study examines how central banks, specifically the European Central Bank, can help facilitate the shift to green finance in general. It also examines the different instruments that banks can employ to fulfill this function. Some of the study's main conclusions include:

- ✓ There are many social, environmental, and economic advantages to green finance, including the preservation of biodiversity, the development of foreign investment, and the prudent use of natural resource;
- ✓ There are several significant obstacles facing green finance, including a lack of green capital and environmental disinformation;
- ✓ As a result of the difficulties presented by climate change, central banks' roles have changed;
- ✓ The European Central Bank incorporates environmental concerns into its monetary policy using a variety of instruments.
- ✓ Our assessment of the ECB's experience reveals some shortcomings in its green monetary policy approach, particularly regarding financing operations and asset purchase programs, while highlighting its strengths in prudential measures such as stress testing and disclosure requirements.

Recommendations :

Since monetary policy tools can only accomplish so much in the area of green finance, central banks and other authorities must coordinate to find solutions that adhere to the central bank's primary goals while also taking into account its capabilities and powers.

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