“Incorporation of Environmental Objectives into the ECB’s Mandate and the Potential Effects on the Single Monetary Policy”

Αθήνα, Νοέμβριος 2021
Copyright © Ευδοκία-Ελένη Λεοντίου, Νοέμβριος 2021

Με επιφύλαξη παντός δικαιώματος. All rights reserved.
Απαγορεύεται η αντιγραφή, αποθήκευση και διανομή της παρούσας εργασίας, εξ ολοκλήρου ή τμήματος αυτής, για εμπορικό σκοπό. Επιτρέπεται η ανατύπωση, αποθήκευση και διανομή για σκοπό μη κερδοσκοπικό, εκπαιδευτικής ή ερευνητικής φύσης, υπό την προϋπόθεση να αναφέρεται η πηγή προέλευσης και να διατηρείται το παρόν μήνυμα.

Οι απόψεις και θέσεις που περιέχονται σε αυτή την εργασία εκφράζουν την συγγραφέα και δεν πρέπει να ερμηνευθεί ότι αντιπροσωπεύουν τις επίσημες θέσεις του Εθνικού και Καποδιστριακού Πανεπιστημίου Αθηνών.
Στην οικογένειά μου, in aeternum

“Pour ce qui est de l'avenir; il ne s'agit pas de le prévoir, mais de le rendre possible”.

Antoine de Saint Exupéry, Citadelle, 1948
Abstract

The present study aims at providing a concise and in-depth analysis of the interconnectedness between the European Central Bank, as a European institution and, more specifically, a monetary authority, and environmental protection considerations. It is structured in two Sections: Section A deals with the fundamental question of whether the European Central Bank is mandated to contribute to the goal of environmental protection, and, by extension, incorporate climate-related considerations into its modus operandi. This Section also undertakes the task of examining the impact of the impending climate change on the European Central Bank’s objectives, as well as it presents the existing legal bases which could advocate for an affirmative answer to the above fundamental question, along with potential objections raised. Provided that the European Central Bank is required to incorporate environmental objectives into its mandate, Section B discusses the effects on its monetary policy instruments, while, at the same time, attempts to present future judicial reflections on the matter.

Keywords: European Central Bank (ECB), monetary policy, environmental protection, climate change, ECB’s mandate, price stability, general economic policies, financial stability, physical risk, transition risk, integration principle, market neutrality, independence, EU Green Deal, monetary policy tools, green APPs, green TLTROs, climate stress test, green monetary policy, proportionality.

The cut-off date for information contained in this study is 1 November 2021.
Table of Contents

List of Abbreviations .................................................................................................................. 7
Introductory Remarks .................................................................................................................. 9

Section A: The Interrelation Between Environmental Protection and the ECB’s Mandate as a Monetary Authority .................................................................................................................. 11

1. The goal of environmental protection as a fundamental EU policy ...................................... 11
   1.1. The EU regulatory framework and the fundamental principles governing environmental objectives .............................................................................................................. 11
   1.2. A holistic European approach towards environmental protection: The EU Green Deal and relative decisions towards the green transition ...................................................... 16

2. The impact of climate-related threats on the ECB’s mandate ............................................. 18
   2.1. The ECB’s objectives as prescribed in Article 127 TFEU .................................................. 18
   2.1.1. Price stability .................................................................................................................. 19
   2.1.2. Support of the general economic policies in the Union .................................................. 20
   2.1.3. Financial stability ......................................................................................................... 21
   2.2. Climate change as a threat to price stability and financial stability .............................. 22
   2.2.1. Physical risk .................................................................................................................. 24
   2.2.2. Transition risk .............................................................................................................. 24

3. Legal bases generating environmental obligations for the ECB ....................................... 25
   3.1. Key provisions in the Treaties ............................................................................................ 26
   3.2. Relevant binding and soft law instruments ....................................................................... 29

4. Potential objections against the ‘greening’ of the ECB’s mandate .................................... 30
   4.1. Market neutrality .............................................................................................................. 30
   4.2. ECB’s independence and its democratic legitimacy .......................................................... 31

Section B: The Reflection of the Incorporated Environmental Objectives on the ECB’s Monetary Policy Framework .................................................................................................................. 33

1. Monetary policy instruments as a tool for pursuing environmental objectives .............. 33
   1.1. Conventional monetary policy tools .................................................................................. 33
       1.1.1. Open market operations and green eligible collateral ............................................... 34
       1.1.2. Differentiated reserve requirements ............................................................................ 35
1.2. Unconventional monetary policy tools ................................................................. 36
   1.2.1. Green APPs ................................................................................................. 36
   1.2.2. Green TLTROs ......................................................................................... 39

2. Other policy recommendations pertinent to monetary stability ......................... 40
   2.1. Green macroprudential regulation and climate-related stress tests ............... 40
   2.2. Disclosure requirements .............................................................................. 42

3. The principle of proportionality as a backstop to the ‘greening’ of monetary policy ... 42

4. An assessment of the CJEU’s future stance towards the legality of the ECB’s green monetary policy ................................................................. 45

Conclusion .............................................................................................................. 50

Bibliography .......................................................................................................... 53

Case Law .............................................................................................................. 76
   European Court of Justice .................................................................................. 76
   Opinions .............................................................................................................. 79
   Other courts ...................................................................................................... 80
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG</td>
<td>Advocate General</td>
</tr>
<tr>
<td>APPs</td>
<td>Asset Purchase Programs</td>
</tr>
<tr>
<td>CSPP</td>
<td>Corporate Sector Purchase Programme</td>
</tr>
<tr>
<td>EAP</td>
<td>Environment Action Programme</td>
</tr>
<tr>
<td>EC</td>
<td>European Community</td>
</tr>
<tr>
<td>ECB</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>ECJ</td>
<td>European Court of Justice</td>
</tr>
<tr>
<td>EEC</td>
<td>European Economic Community</td>
</tr>
<tr>
<td>EMU</td>
<td>Economic and Monetary Union</td>
</tr>
<tr>
<td>ESCB</td>
<td>European System of Central Banks</td>
</tr>
<tr>
<td>ETS</td>
<td>Emission Trading System</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GFC</td>
<td>Global Financial Crisis</td>
</tr>
<tr>
<td>GFCC</td>
<td>German Federal Constitutional Court</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
</tr>
<tr>
<td>HICP</td>
<td>Harmonized Index of Consumer Prices</td>
</tr>
<tr>
<td>IPCC</td>
<td>International Panel on Climate Change</td>
</tr>
<tr>
<td>LTROs</td>
<td>Long-Term Refinancing Operations</td>
</tr>
<tr>
<td>MROs</td>
<td>Main Refinancing Operations</td>
</tr>
<tr>
<td>NCBs</td>
<td>National Central Banks</td>
</tr>
<tr>
<td>NGFS</td>
<td>Network for Greening the Financial System</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OMT</td>
<td>Outright Monetary Transactions</td>
</tr>
<tr>
<td>PSPP</td>
<td>Public Sector Purchase Programme</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SEA</td>
<td>Single European Act</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
</tr>
<tr>
<td>SRB</td>
<td>Single Resolution Board</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>TEU</td>
<td>Treaty on European Union</td>
</tr>
<tr>
<td>TFEU</td>
<td>Treaty on the Functioning of the European Union</td>
</tr>
<tr>
<td>TLTROs</td>
<td>Targeted Longer-term Refinancing Operations</td>
</tr>
</tbody>
</table>
Introductory Remarks

As the world emerges from the COVID-19 pandemic, a pandemic that has truly ravaged our societies in both economic and humanitarian terms, a quite reverberant question arises effortlessly: are we adequately prepared for an even greater and more complex global challenge, which will irreversibly destabilize the Earth’s temperature equilibrium and, by extension, imperil the viability of our planet? In August 2021, the United Nations’ Intergovernmental Panel on Climate Change (IPCC) warned the global community and incidentally responded to the above question, by stating that “humanity may not be able to adapt to the drastic climate shift we are about to experience”.¹ However, climate action is gaining momentum, as more and more countries worldwide are committed not only to serving the goal of environmental protection, but also to taking appropriate drastic measures to deal with this crisis.² It is noteworthy that the European Union has a leading presence in this effort.

“Climate change is the quintessential global externality”, as the Nobel laureate economist, William Nordhaus, highlights.³ Against this global climate emergency, collective action is more than imperative, and, in that regard, central banks should consider adapting their operations in order to contribute to the green transition. Some data may shed light to the necessity of central banks’, and, in particular, the European Central Bank’s (hereinafter “ECB”) alignment with the environmental policy goals in the Union. First, since 2014, the United Nations have warned the global community that our economies will spend each year additional US $ 36-135 billion to address environmental challenges, including climate change.⁴ Second, humanity adds to the atmosphere each year almost 51 billion tones of greenhouse gases. To comprehend the magnitude of these emissions, it should be said that, in order to avoid a climate destruction, the only plausible solution would be to reach net zero emission levels in the nearest future.⁵ Third, without action, the total cost associated with climate change will be equal to a 5 % loss of global Gross Domestic Product (hereinafter “GDP”) each year, now and forever.⁶

Central banks play a significant role in controlling the risks that threaten the stability and sustainability of the financial system, and their operations have been part of broad financial regulatory reforms for the generation of a “strong, sustainable and balanced growth”⁷. In line with the above, the ECB has committed to take into consideration the impact of climate change on its monetary policy framework and to further examine its role in the battle against climate change. As it is commonly known, the primary responsibility for dealing with climate change and undertaking the necessary policy actions for the achievement of environmental protection goals, lies with governments and the competent EU institutions. However, the ECB has been quite active already in the pursuit of a ‘greener’ profile. More specifically, the ECB has become a member of the Network for Greening the Financial System (hereinafter “NGFS”), a group of central banks and supervisors worldwide aiming at achieving a smoother transition to a low-carbon economy. Moreover, in the context of its monetary

---

⁴ World Bank (2013).
⁵ For a detailed analysis on the matter and a granular explanation of the alternative mechanisms and tools for fighting climate change, see Gates, B. (2021).
strategy review of 2020-2021, following an assessment of the effects that the current climate crisis poses on the economy and its monetary policy operations, the ECB has summarized its future steps into an action plan to tackle climate change.\textsuperscript{8} It has been also working to reduce its own ecological footprint, as well as it has recently published its methodology and results from the economy-wide climate stress test conducted in 2021.\textsuperscript{9}

Nevertheless, intentions do not speak louder than actions. The ECB’s collateral framework is accused of being responsible for supporting the activities of fossil-intensive firms, and, by extension, undermining the Union’s environmental strategy by “building back dirtier”.\textsuperscript{10} Campaigners have been calling on the immediate exclusion of fossil fuel developers from the ECB’s collateral framework and purchase programmes. Indicatively, it is noted that from April 2020 to September 2021, the number of bonds issued by these corporations and purchased by the ECB has been augmented by 16,2\%.\textsuperscript{11}

It is beyond doubt though, that a one-size-fits-all approach could not reasonably exist. It is true that central banks are now more influential than ever, and their role is deemed critical in the pursuit of sustainable growth. Nonetheless, despite the massive request for substantial and immediate change, the core question is whether the ECB, as an EU institution, is legally allowed, in terms of its strictly defined mandate, to incorporate environmental considerations into its operations and contribute to the fight against climate change. The present study undertakes the exact task of examining the legal boundaries of the ECB’s mandate, in a direct relation to the environmental policy objectives and requirements set in the Union. More specifically, Section A delineates the ECB’s objectives, as provided in the Treaties and other relevant legal instruments, as well as it presents the existing legal bases which could advocate for the incorporation of environmental objectives into its mandate, along with potential objectives raised. Provided that the ECB is mandated to contribute to the transition to a low-carbon economy, Section B proceeds to examine the effects on its monetary policy instruments, while, at the same time, attempts to present future judicial reflections on the matter.

\textsuperscript{8} Lagarde, Ch. (2021).
\textsuperscript{9} Alogoskoufis, S. et al. (2021a).
\textsuperscript{10} Reclaim Finance (2021).
\textsuperscript{11} For more, see Schreiber, P. (2021).
Section A: The Interrelation Between Environmental Protection and the ECB’s Mandate as a Monetary Authority

1. The goal of environmental protection as a fundamental EU policy

During the last decades, sustainable development and environmental protection have been established -inter alia- as overarching policy goals of the Union. The European Union (hereinafter the “EU”) and the relevant national governments have eventually been setting clear objectives for the protection of the environment and the mitigation of climate change, and, at the same time, have envisioned a greener future through the adoption of both short-term and long-term measures.

Against this backdrop and in parallel with the relevant binding statutory provisions as provided for in the EU Treaties, the European strategy on environmental policy -and, by extension, every European policy- has been undoubtedly and dynamically oriented towards a climate-neutral and sustainable economy. For the achievement of the above objectives and policies, the Union has been equipped with various tools, either legislative or political, which, on the one hand, are supportive of the environmental goals and conducive to the intended outcome, and, on the other hand, render the incorporation of environmental objectives into all the European activities irrefutable.

1.1. The EU regulatory framework and the fundamental principles governing environmental objectives

The action of both the EU institutions and the Member States with regard to environmental policy, is subject to and regulated by a series of statutory clauses, deriving primarily from the foundational provisions of EU primary law and, by extension, the provisions of secondary law instruments, as well as by fundamental principles related to environmental protection. Before highlighting the relevant regulatory framework as regards environmental protection, a historical overview of the integration process of environmental objectives into the Union’s policies and activities, is deemed critical.

To start with, the goal of environmental protection was officially introduced and incorporated into the Union’s policy framework in 1972. It is noted that the Treaty of Rome (1957), which established the European Economic Community (hereinafter the “EEC”) and was mainly focused on the creation of a common market, made no reference to the environment. Nevertheless, in the framework of the Paris summit in October 1972, the Heads of State or Government of the Member States of the enlarged Community published a joint statement highlighting for the first time the need for a community

---

12 Council of the European Union (2009), 2.
14 See, indicatively, European Political Strategy Centre (2019); European Commission (2019).
17 According to Article 2 of the Treaty of Rome: “The Community shall have as its task, by establishing a common market and progressively approximating the economic policies of Member States, to promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living and closer relations between the States belonging to it”.
18 Shlaim, A. (1972), 520-530.
environment policy and requesting the Commission to draft an Action Program on the environment. Prior to the adoption of the Single European Act (hereinafter the “SEA”) in 1986, not only did the Treaties establishing the European Community not provide for any explicit authorization to the Communities to exercise environmental policy, but also there was absolutely no reference made to the notion of ‘environmental protection’.

The SEA was a key stage for both the substantial and institutional evolution of the Union, as it introduced provisions regarding the environment. Constituting the first legal basis for a common environment policy, on the one hand, it provided that the Community would be the competent authority for environmental policy issues, namely the preservation of the quality of the environment, the protection of human health and the rational use of natural resources, and, on the other hand, it introduced the principle that the environment should be a component of the Community’s other policies. Specifically, it is worth noting that Article 100a of the Treaty establishing the EEC (hereinafter “EC Treaty”), as amended by the SEA, provides for a high level of (environmental) protection and is applicable should environmental issues interfere with issues relating to the internal market. Following a significant declaration by the European Council in 1990, urgently requesting for a more enlightened and systematic approach for the management of the environment, in 1992, the year of European renaissance, the Treaty of Maastricht made the environment an official EU policy area and contributed to the achievement of a high-level protection of the areas interconnected with the environment, such as health, education and culture, without establishing though a common environmental policy. Moreover, the Treaty of Maastricht introduced the co-decision procedure, making the qualifying majority voting in the Council the general rule, as well as renamed the EEC

---

19 Specifically, as stated in point 3 of the joint statement: “Economic expansion is not an end in itself. Its first aim should be to enable disparities in living conditions to be reduced. It must take place with the participation of all the social partners. It should result in an improvement in the quality of life as well as in standards of living. As befits the genius of Europe, particular attention will be given to intangible values and to protecting the environment, so that progress may really be put at the service of mankind” (emphasis added by the author).

20 It is noted that the first Action Program was adopted in 1973.

21 Commission of the European Communities (1972).

22 European Union (1986), Single European Act, OJ L 169, 1-28, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:11986U/TXT&from=EN; It is worth noting that the SEA amended the Treaty of Rome establishing the European Community, and defined ‘internal market’ as an area without internal borders in which there is a free movement of goods, persons, services and capital.

23 Ibid, Article 25.


26 European Union (1986), Article 130r(2), according to which “[e]nvironmental protection requirements must be integrated into the definition and implementation of other Community policies”; Wilkinson, D. (1992), 222.


28 European Council (1990), 8.


to ‘European Community’ (hereinafter the “EC”) signaling the nature of the Union as more than just an economic community.

In 1997, the Treaty of Amsterdam, which amended the Treaty on European Union and made some substantial changes to the Treaty of Maastricht, introduced the principle of ‘sustainable development’ and amended Article 2 of the EC Treaty, promoting “[…] a harmonious, balanced and sustainable development of economic activities”. Furthermore, by virtue of the latest amendment of the Treaty of European Union (hereinafter “TEU”) in 2007, the Treaty of Lisbon, besides renaming the EC to EU and replacing the EC Treaty with the Treaty on the Functioning of the European Union (hereinafter “TFEU”), extended the objectives of the Union provided for in article 3 TEU. Sustainable development acquired a horizontal character and the combat against climate change became a specific and politically colored goal.

The above presentation of the historical evolution of EU’s regulatory approach towards the environment, as well as the progressive configuration of the relevant provisions, facilitates a deeper comprehension of the applicable statutory laws and principles. As far as the environmental protection issues at a European level are concerned, it is noted that the relevant key provisions can be principally found in EU primary law. More specifically, according to Article 4 para 2 case (e) TFEU, the Union and the Member States have concurrent (shared) competence in matters related to the environment, meaning that EU countries may exercise their competence to the extent that the Union does not exercise -or has decided not to exercise- its own.

Furthermore, under Title XX (“Environment”) of the TFEU, Articles 191-193 (ex Articles 174-176 EC) regulate the Union’s environmental policy, define its environmental priorities and objectives, as well as provide for the fundamental principles governing environmental protection. More specifically, by virtue of Article 191 para 1 TFEU, Union policy on the environment should substantially contribute to the following objectives, which are binding for all EU institutions: preservation, protection and improvement of the quality of the environment, protection of human

---

38 Vedder, H. (2010), 291; See also Benson, D. and Jordan, A. (2008), 284. This could be also deduced from the EU’s leadership position as regards the Energy and Climate Package.
40 See indicatively Kanellopoulos, P. (2010), 273; Dahl, A. (1999), 335. At this point, it seems crucial to add that the action in the areas of shared competences is governed by the principles of “subsidiarity”, according to which the action at EU level is restricted only to those areas where it is deemed more effective compared to national intervention.
42 See, Christianos, V. (2012), 881; It should be noted that there is no hierarchy among these objectives, and that the European policies should not necessarily -or possibly, at times- pursue all these goals simultaneously. See for more, Judgement of the Court of 14 July 1998, Safety Hi-Tech Srl v. S. & T. Srl., C-284/95, ECLI:EU:C:1998:352, paras 44-45.
43 It should be noted that the Treaties do not include a definition of the term ‘environment’. However, it is accepted that this term refers to both the natural and the man-made environment, the former of which includes the air, water and soil
health, prudent and rational utilization of natural resources and promotion of measures at an international level to deal with regional or worldwide environmental problems, and in particular the combat of climate change.

The pursuit of the above environmental objectives is based on certain fundamental principles, as enshrined in Article 191 para 2 TFEU. Firstly, the precautionary principle constitutes a risk management tool, the application of which is not restricted to environmental matters, and which requires States to act in cases of scientific uncertainty as regards the existence or the extent of a potential risk. It is noted that the above principle is always being referred to along with the principle of prevention, as they do not have substantial differences and they both aim at preventing, reducing and mitigating, to the extent possible, environmental damage. Moreover, environmental damage should be rectified at source and the “polluter pays” principle should apply, contributing to the “internalization of negative environmental externalities”.

In parallel with the above provisions and principles, Article 3 TEU (ex Article 2 TEU) constitutes one of the key articles in the Treaties as it delineates the objectives of the Union. While being binding upon all EU institutions, it provides -"inter alia"- for the establishment of the internal market, along with the flora, fauna and the man itself. This objective is closely linked to the principle of sustainable development; See, Christianos, V. (2012), 880. The EU (as it is presented below under Chapter 1.2.) has adopted ambitious policies and is in constant cooperation with international players for the fight against climate change. See, indicatively, Dashwood, A., & Maresceau, M. (2008), 436; European Parliament (2021).


See, indicatively, Judgement of the Court (Fourth Chamber) of 5 October 1999, Criminal proceedings against Paolo Lirassi and Francesca Bizzaro, C-175/98 and C-177/98, ECLI:EU:C:1999:486, para 51.

See Judgement of the Court of 9 July 1992, Commission of the European Communities v. Kingdom of Belgium, C-2/90, ECLI:EU:C:1992:310, para 34.

European Court of Auditors (2021). The “polluter pays” principle was firstly introduced by the Organization for Economic Co-Operation and Development (OECD) in 1972. It could also be currently found in OECD (2021). The relevant principle is implemented by the Environmental Liability Directive (Directive 2004/35/EC).


In more detail, the Union organs (and the Member States) are bound by the objectives set out in Article 3 TEU in a sense that they should legislate and interpret the whole Union law according to these objectives and within their margin of appreciation. The binding character of these objectives has been highlighted by the jurisprudence of the European Court of Justice (ECJ). See, indicatively, Judgement of the Court of 21 February 1973, Europenballage Corporation and Continental Can Company Inc. v Commission of the European Communities, C-6/72, ECLI:EU:C:1973:22, para 23 et seq. (regarding Art. 2 and 3 EEC Treaty); Judgement of the Court of 13 February 1979, Hoffmann-La Roche v Commission,
it sets environmental protection as one of the primary EU goals and it highlights the importance of securing a high level of environmental protection in the Union.\textsuperscript{55} Additionally, Article 3 TFEU introduces the notion of “sustainable development”.\textsuperscript{56} This term corresponds to the development that could satisfy in the best possible way the needs of the present generations without compromising the ability of the next generations to satisfy theirs.\textsuperscript{57} The notion of sustainability has a global, intertemporal\textsuperscript{58} and systemic by nature character,\textsuperscript{59} while the principle of sustainable development has acquired a more anthropocentric texture.\textsuperscript{60}

The fundamental importance of environmental protection is highlighted in Article 11 TFEU (ex Article 6 TEC), which introduces the integration principle and, specifically provides that “[e]nvironmental protection requirements must be integrated into the definition and implementation of the Union’s policies and activities, in particular with a view to promoting sustainable development”.\textsuperscript{61} The significance of policy integration should be seen in conjunction with Article 191 TFEU and para 3 TFEU, as, on the one hand, the EU is obliged to take into consideration important policy objectives in the process of designing and implementing a policy, and, on the other hand, the goal of sustainable development is considered a key element of policy integration,\textsuperscript{62} striking a balance between the goal of economic development and the need for environmental protection. The general consistency clause in Article 7 TFEU reinforces the importance of policy integration.\textsuperscript{63}

Last but not least, it should be highlighted that environmental protection is established as a fundamental principle in Article 37 of the EU Charter of Fundamental Rights (hereinafter the “Charter”).\textsuperscript{64} Given that the Charter is legally binding on the EU\textsuperscript{65} and its legal value is equivalent to

\begin{flushright}
\begin{tabular}{l}
Case 85/76, ECLI:EU:C:1979:36, para 125 (concerning primary Community law); Judgement of the Court (Fifth Chamber) of 21 March 1991, Siegfried Rauh v Hauptzollamt Nürnberg – Fürth, Case C-314/89, ECLI:EU:C:1991:143, para 17 (concerning secondary Community law). See, also, Schwind, J. (2008), 369 and seq. \\
\textsuperscript{55} Article 3 para 3, TFEU; \textsuperscript{56} this principle is characterized by elements of fairness and equity. It has been incorporated in the EC Treaty by the Treaty of Amsterdam for the first time as a foundational principle. \\
\textsuperscript{57} The definition of “sustainable development” can be found in \textit{Brundtland report} (1987) and in \textit{Agenda 21} of the Earth Summit for climate change in Rio (1992); \textsuperscript{58} Endres, A. and Radke V. (2012), 140. \\
\textsuperscript{59} This text is worth noting that the concept of “sustainability” has been under discussion since the 1930s; Specifically, see Hotelling, H. (1931), 137. \\
\textsuperscript{60} Dellis, G. (2021), 109. \\
\textsuperscript{62} Lenschow, A. (2002), 5. \\
\textsuperscript{63} Article 7 provides that: “The Union shall ensure consistency between its policies and activities, taking all of its objectives into account and in accordance with the principle of conferral of powers”. \\
\textsuperscript{64} European Union (2016), \textit{Charter of Fundamental Rights of the European Union}, OJ C 202, 7.6.2016, p. 389–405; The idea of a Charter as a consolidated version of the applicable rights in the Union was firstly introduced in 1999 by the European Council and was formally proclaimed in December 2000 by the European Parliament, the Council and the Commission; See on this, Ewing, K. (2000), 7. \\
\textsuperscript{65} The Charter became legally binding by the time that the Treaty of Lisbon entered into force in 2009; Pech, L. and Grousset, X. (2010). It is worth noting that long before the time when the Charter has officially acquired equal legal value to the EU Treaties, Advocates General have started, since 2001, to take into consideration its provisions, whilst being conscious that it was not yet binding. See, for instance, Opinion of AG Tizzano delivered on 8 February 2001 (ECLI:EU:C:2001:81), Judgement of the Court (Sixth Chamber) of 26 June 2001, \textit{The Queen v. Secretary of State for Trade and Industry, ex parte Broadcasting, Entertainment, Cinematographic and Theatre Union (BECTU)}, C-173/99, ECLI:EU:C:2001:356 and Opinion of AG Ruiz-Jarabo Colomer delivered on 11 July 2002 (ECLI:EU:C:2002:447), Judgement of the Court of 6 March 2003, \textit{Arben Kaba v. Secretary of State for the Home Department}, C-466/00, ECLI:EU:C:2003:127.
\end{tabular}
\end{flushright}
that of the Treaties, EU institutions (and Member States) are obliged to design and implement their policies based on both the highest possible level of environmental protection and the principle of sustainable development.

1.2. A holistic European approach towards environmental protection: The EU Green Deal and relative decisions towards the green transition

As it has already been mentioned, the climate crisis constitutes a huge, irreversible and inevitable threat to the viability of our planet, being capable of negatively affecting every field of (economic) activity. While its effects are continuously menacing the present and the future of humanity, the EU has adopted a holistic approach towards environmental protection. In addition to the statutory provisions included in the Treaties and the secondary legislation, the Union has integrated environmental considerations into every policy area and has adopted a series of international and regional commitments with the aim of protecting the environment.

Taking into consideration the international goals provided for by the United Nations’ 2030 Agenda, the relevant Sustainable Development Goals (hereinafter “SDGs”), as well as the objectives of the legally binding Paris Agreement, the European Commission launched in December 2019 the EU Green Deal, a set of policy initiatives and strategic goals for an inclusive and sustainable transformation of the Union. The overarching goal of the Green Deal is the achievement of a climate-neutral and climate-resilient society by 2050 and the reduction of the Union’s greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. It is noted that these goals cover multiple sectors, including, inter alia, the field of energy, food, transport, biodiversity, taxation and innovation. As it is clearly stated in the Commission’s communication of the Green Deal, “[a]ll EU actions and policies will have to contribute to the European Green Deal objectives”.

Against the backdrop of the EU Green Deal, the Union has undertaken a series of initiatives for climate action. First and foremost, the Commission proposed the European Climate Law in March 2020, on which the European Parliament and the Council reached a political agreement on 21 April 2021, and by which the goal of climate neutrality -inter alia- will acquire a legally binding

---

66 Article 6 para 1, TEU; Perakis, M. (2015), 68;
67 See Blanke, H. J. and Mangiameli, S. (2013), 419, where it is noted that the rights provided for in the Charter apply to both the acts of EU institutions and the acts of Member States.
68 See, indicatively, some major scientific reports on the matter: IPCC (2021); IPBES (2019); IRP (2019).
69 The SDGs constitute 17 global goals included in the United Nations’ General Assembly resolution known as the “Agenda 2030” and aiming at a better and more sustainable future for all. The relevant resolution is the following: United Nations General Assembly (2015).
71 European Commission (2019a); Tamma, P., Schaart, E. and Gurzu, A. (2019); Simon, F. (2019). It is important to highlight that the Green Deal formed part of President von der Leyen’s political guidelines, Von der Leyen, U. (2019), 5-7.
72 The goal of climate neutrality has been set even before the adoption of the Green Deal. See European Commission (2018).
75 European Commission (2020).
76 The European Parliament adopted the position at first reading on 24 June 2021.
78 Ibid.
character once adopted. Moreover, climate adaptation constitutes a crucial stepping stone for boosting EU’s resilience, as well as the European Climate Pact contributes to the empowerment and stronger engagement of individuals in climate action. The mechanism of EU’s Emission Trading System (ETS) for the reduction of greenhouse gas emissions from the power sector is constantly evolving, the 2030 Climate Target Plan of reducing the emissions by at least 55% is solid, as well as plenty regulatory proposals are periodically adopted to address climate-related issues in multiple sectors. It should also be highlighted that the transition to a circular economy constitutes one of the building blocks of the Union’s Green Deal.

The EU has repeatedly recognized that the financial sector constitutes part of the solution to the threatening environmental issues, as well as that the financing of sustainable growth would be of paramount importance for the achievement of 2030 goals. In that regard and in implementation of the Capital Markets Union Action Plan, the Commission has adopted the so called ‘Sustainable Finance Package’, a regulatory trilogy aiming at the re-orientation of investments towards sustainable activities. It is noted that the adoption of such measures is deemed necessary under Article 3 para 3 TEU, which provides for an internal market operating under the terms of sustainable development.

In addition, the ECB itself has granularly assessed the phenomenon of climate change in the conduct of its strategy review published on 8 July 2021 and has committed to take into account the implications of climate change for its monetary policy, as well as to further incorporate climate-related considerations into its policy. It should also be noted that the EU Recovery Fund concluded in late December 2020 by the EU provides that 37% of the expenditures (nearly 550 billion euros) will be exclusively dedicated to the green transition, forming in that way the largest climate pledge ever made. Furthermore, following the previous Environment Action Programmes (hereinafter “EAPs”) issued by the Commission, the eighth EAP is planned to be adopted by the end of 2021 and it will be demanding the engagement of the stakeholders in all policy fields towards the achievement of the objectives of both the EU Green Deal and the United Nations’ 2030 Agenda. In this context of

---

79 European Commission (2021a), 82. It is noted that climate adaptation constitutes a global goal under Article 7 of the Paris Agreement and the 13th Sustainable Development Goal.
80 European Commission (2020a); European Commission (2020b).
82 European Commission (2020c).
83 European Commission (2021b).
84 European Commission (2020d), 98.
86 This term can be characteristically found in Gortsos, Ch. (2020), 5.
87 This trilogy consists of Regulation (EU) 2020/852 (Taxonomy Regulation), Regulation 2019/2088 (Sustainable Finance Disclosure Regulation) and Regulation 2019/2089 (Low Carbon Benchmarks Regulation).
88 See for more Reichlin, L. et al. (2021).
89 Tayler, K. (2020).
91 It is worth noting that since 1973 the Commission has issued seven EAPs covering the period from 1973 to 2020 and outlining the European environmental strategy. See on this Krämer, L. (2016), 35; European Parliament (2021), 2.
sustainability and climate neutrality, the ECB publishes Environmental Statements, in which it reports on the impact of its activities on the environment and the level of its compliance with the sustainability requirements.93

All the above decisions and initiatives, and primarily the EU Green Deal, reveal the mentality and define the stance of the Union towards environmental protection. This holistic environmental approach constitutes an indispensable part of the design and implementation of every European policy, from which no European institution could be possibly excluded. Even if there were no legally binding provisions requiring the integration of environmental considerations into the Union’s policies or the compliance with the provisions set accordingly to the international and European environmental commitments -which, nevertheless, exist-, it would be imperative that all European institutions were responsible both for complying with the general tendency of the Union and for methodically pursuing the goal of environmental protection.

2. The impact of climate-related threats on the ECB’s mandate

The ECB as a monetary authority has a clearly defined mandate, as prescribed in the Treaties and interpreted by the system of relevant regulatory provisions and European principles. Although the ECB remains independent and detached from the political circle and the government-related issues, climate change-related considerations shall not be underestimated. As it will be thoroughly analysed below, the implications of climate change on both price stability and financial stability may raise concerns on the potential ‘monetary response’ of the ECB.

2.1. The ECB’s objectives as prescribed in Article 127 TFEU

In the context of the necessary preparatory steps for the initiation of the Third Stage of the European and Monetary Union (hereinafter “EMU”),94 the European Central Bank (hereinafter “ECB”) and the European System of Central Banks (hereinafter “ESCB”) were established on 1 June 1998 and started to fully exercise their duties on 1 January 1999.95 The ESCB96 consists of the ECB and the National Central Banks (hereinafter “NCBs”) of all Member States97 irrespective of whether they belong to the Eurosystem98 or not, and it constitutes a term used to describe its constitutive parts, i.e. the ECB and the NCBs of all Member States.99 In particular, the ECB is a supranational and pan-European entity,100 which acquired the character of a European institution with the Treaty of Lisbon and is

---

95 Gortsos, Ch. (2018), 35.
96 The ESCB has no legal personality. For more on the ESCB, see Smits, R. (1997), 92-93; Häde, U. (1999), 1164.
97 TFEU. Article 282 para 1, first sub-paragraph.
98 The Eurosystem consists of the ECB and the NCBs of the Member States whose currency is the euro.
99 Gortsos, Ch. (2021).
100 Gortsos, Ch. (2018), 15.
mainly responsible for the design and implementation of the single monetary policy in the Eurozone.\footnote{TFEU, Article 127 para 2, first indent; \textit{Gortsos, Ch. (2014)}, 168. The Eurozone, also known as the euro area, consists of the 19 Member States who have replaced their national currencies with a single currency, the euro.}

The relevant provisions for the organisation and operation of the ESCB are provided for by the TFEU and the Statute of the ESCB and of the ECB (hereinafter “ESCB/ECB Statute”), the latter of which is annexed to the Treaties (Protocol No 4).\footnote{Protocol as annexed to the consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, OJ C 83, 30.3.2010; \textit{European Central Bank (2011)}.} The main objectives and tasks of the ESCB and, in particular, of the ECB are specified in Articles 127 para 1 and 282 para 2 TFEU, as well as in Article 2 of the ESCB/ECB Statute. According to Article 127 para 1 TFEU, “[t]he primary objective of the European System of Central Banks […] shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 of the Treaty on European Union […].” Hence, as it will be analyzed further on, price stability is depicted in the Treaty and its Protocol as the primary objective of the ECB (see Chapter 2.1.1.), while the support of the general economic policies in the Union as a secondary objective (see Chapter 2.1.2.). Lastly, it should be noted that the ECB is responsible for contributing to the stability of the financial system, as it will be thoroughly examined under Chapter 2.1.3.

\textit{2.1.1. Price stability}

As previously mentioned, according to Article 127 para 1 TFEU, the primary objective of the ECB is the maintenance of price stability. Price stability constitutes a subset of monetary stability, which, in its turn, is translated into the maintenance of the internal and external value of money,\footnote{\textit{Gortsos, Ch. (2014)}, 168.} as well as into the absence of price instability, i.e. phenomena of inflation or deflation.\footnote{Lastra, R. (2015); Lastra, R. and Alexander, K. (2020), 10.} Whilst the Treaty establishes the primacy of price stability in the process of delineating the ECB’s mandate, it does not include a precise definition of its meaning. Against this background, in 1998 the ECB’s Governing Council adopted the following quantitative definition of price stability: “[p]rice stability is defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) [hereinafter “HICP”] for the euro area of below 2\%”, and in 2003 it clarified that, in pursuing price stability, it aims at maintaining the inflation rates “below, but close to, 2\% over the medium term.”\footnote{European Central Bank (2009), 59. Relative information can be found in the ECB’s website: \url{https://www.ecb.europa.eu/mopo/strategy/pricestab/html/index.en.html}; It should also be noted that in the \textit{Weiss} case (Judgement of the Court (Grand Chamber) of 11 December 2018, Heinrich Weiss and Others, C-493/17, ECLI:EU:C:2018:1000, para 56), the Court found that the 2\% interpretation was not “[…] vitiated by a manifest error of assessment […],” as well as that “[…] such a choice can properly be based, inter alia, on the fact that instruments for measuring inflation are not precise, on the appreciable differences in inflation within the euro area and on the need to preserve a safety margin to guard against the possible emergence of a risk of deflation”.} However, on 8 June 2021 the ECB’s Governing Council approved its new monetary policy strategy, with which has set a symmetric inflation target of 2\% over medium term, while maintaining the HICP as an appropriate price measure.\footnote{European Central Bank (2021); Randow, J. and Gordon, P. (2021).}
Besides being the primary objective of the ECB, stable prices constitute an indispensable condition and an overarching goal of the Union as a whole. Specifically, pursuant to Article 119 para 2 and 3 TFEU, as well as Article 3 para 3 TEU, price stability is one of the ‘guiding principles’ of the EU, whose achievement is effectively safeguarded by the guarantee of ECB’s independence. In this regard, the ECB should be responsible for combating inflation and maintaining price stability and not attempting to influence growth and employment. Based on the above, it could be rationally deduced that the Treaties have established a clear-cut hierarchy among the objectives of the ECB, setting price stability on the forefront of central bank’s concerns as the most important tool for an effective monetary policy across the euro area, and a pre-condition for economic prosperity.

2.1.2. Support of the general economic policies in the Union

As it is clearly stated in Article 127 para 1 TFEU, “[…] without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 of the Treaty on European Union”. The support of the general economic policies in the Union, also known as the secondary objective of the ECB, is closely linked to Article 3 para 3 TEU, according to which “[t]he Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment […]”. The ECB’s mandate in supporting the general economic policies in the Union is served in so far as the primary objective, i.e. price stability, is not compromised. Economic policies, and subsequently, fiscal and budgetary policies, have not been transferred to the Union and, thus, each Member State has remained fully responsible for their adoption and implementation as prescribed in the Treaties. The distinction between the single monetary policy on the one part, and the close coordination of Member States’ economic policies on the other, could be easily understood and deduced by the Treaties, but the delineation of their spectrum could not be straightforwardly drawn. However, even though the ECB is not a policy-making institution, it necessarily assesses the

---

109 Gortsos, Ch. (2021), 16.
112 Emphasis added by the author.
114 TFEU, Article 191 para 1.
115 According to Title VIII of the Treaty on the Functioning of the European Union and notwithstanding the special powers expressly assigned to the Union (e.g. Art. 121, 122, 126 TFEU), the responsibility for economic policy lies clearly with the Member States. In this field of economic policy, the European Union is – apart from individual exceptions that are in particular regulated in Part Three of the Treaty on the Functioning of the European Union – essentially limited to a coordination of Member States’ economic policies”. See on this, BVerfG, Judgement of the Second Senate of 21 June 2016, 2 BvR 2728/13, 2 BvR 2729/13, 2 BvR 2730/13, 2 BvR 2731/13, 2 BvE 13/13, paras 39, 63, 68; See also, Judgement of the Court (Full Court) of 27 November 2012, Thomas Pringle v. Government of Ireland and Others, C-370/12, ECLI:EU:C:2012:756.
consequences of its decisions for the economic policies in the Union, and vice versa, it examines how these general economic policies could (or even should) affect its own policy.\footnote{Siekmann, H. (2015), 13-14.}

### 2.1.3. Financial stability

Since the eruption of the Global Financial Crisis (hereinafter “GFC”) in 2007, the subsequent sovereign debt crisis in the Eurozone,\footnote{Ringe, W-G. and Gortsos, Ch. (2021).} as well as the effects of the pandemic crisis of COVID-19, the notion of financial stability has gradually and increasingly been integrated into the spirit of mostly every European legal instrument, highlighting its importance for the operation and effectiveness of the whole financial system. At this point, it should be noted that there is no generally accepted definition for financial stability,\footnote{For an analysis of the definition of the term, see Mishkin, F.S. (2003), 93-105.} some authors define it as the opposite of financial instability, others as the system that effectively performs its functions,\footnote{Schinasi, G. (2006), 82, according to who “[f]inancial stability is a situation in which the financial system is capable of satisfactorily performing its three functions simultaneously”. It is noted that these functions pursuant to Schinasi’s interpretation are intermediation, direct financing through markets, and operation of financial infrastructures.} as well as others are focusing more on the operational perspective of the term.\footnote{For an analysis on this approach, see indicatively, Schinasi, G. (2005).}

More analytically, financial stability constitutes a ‘global public good’,\footnote{See on this, Gortsos, Ch. (2020a); Secretariat of the International Task Force on Global Public Goods (2006), 2.} which is tightly linked to price stability.\footnote{Draghi, M. (2017); Psaroudakis, G. (2018), 130.} Although financial stability and price stability are not identical, they are generally complementary: on the one part, the low and stable inflation facilitates the circulation of credit, and, on the other part, the stability of the financial system is essential for the transmission of monetary policy to the real economy.\footnote{Borio, Cl. (2014), 9; Georgsson, M., Vredin, A. and Sommar, P.A. (2015), 23.} In a theoretical level, there has been a lot of discussion regarding a potential dual mandate of the central bank, referring to both price stability and financial stability,\footnote{Psaroudakis, G. (2018), 125. It is useful to note that both the Federal Reserve (USA) and the Bank of England have a twofold mandate, the former aiming at price stability and full employment, while the latter at price stability and financial stability.} a discussion though that has never been applied in practice for the ECB.

The interconnection between financial stability and price stability, as well as their reflection on the interlinkages between economic and monetary policy instruments, have intensely been dealt with by the European Court of Justice (hereinafter “ECJ”) in some recent monumental cases. Specifically, in the Gauweiler case, the ECJ has stated that “[…] since disruption of the [monetary] transmission mechanism undermines the effectiveness of the measures adopted by the ESCB, that necessarily affects the ESCB’s ability to guarantee price stability. Accordingly, measures that are intended to preserve that transmission mechanisms may be regarded as pertaining to the primary objective laid down in Article 127(1) TFEU”.\footnote{Judgement of the Court (Grand Chamber) of 16 June 2015, Peter Gauweiler and Others v Deutscher Bundestag, C-62/14, ECLI:EU:C:2015:400, para 50.} In this regard, the Court accepts that the instruments applied for the prevention\footnote{Actually, financial law is founded on the idea of prevention (for example, the ‘bank safety net’ and the relevant crisis prevention measures, prudential supervision etc.)} of disturbances in monetary transmission mechanism constitute part of the ECB’s
monetary competence, and by extension, any indirect effects of the economic policy on the monetary policy do not alter the qualification of the measure.\textsuperscript{127}

As far as the provisions in the Treaties related to financial stability are concerned, it should be noted that at the time of signature of the Treaty of Maastricht, financial stability was not deemed as relevant as the goal of price stability. More specifically, Article 127 para 5 TFEU features a less forceful wording compared to Article 127 para 1 TFEU –namely, the price stability objective-, as it states that “[t]he ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system”.\textsuperscript{128} Hence, although financial stability is not prescribed in the Treaties as an explicit objective of the ECB, on the one hand, it could be implied by the price stability mandate,\textsuperscript{129} and on the other hand, it is delineated by Article 127 para 5 TFEU, according to which the ECB should only contribute to the goal of financial stability as regards the protection of the prudential supervisor’s competence.\textsuperscript{130}

Against this backdrop, it should be outlined that the ECB’s interaction with the goal of financial stability is based on two legal bases: first, in the context of Article 127 para 1 TFEU, financial stability is a necessary means for the achievement of the primary objective of price stability, as well as the preservation of the transmission mechanism and the effectiveness of monetary policy, and second, pursuant to Article 127 para 5 TFEU, the ECB is entrusted with the task of contributing to the smooth conduct of policies relating to financial stability, without acquiring though any exclusive powers on the matter.\textsuperscript{131} Although the ESCB/ECB Statute does not refer to any specific means for the fulfilment of the above contributory task, the ECB is allowed to use its typical instruments for its achievement.

2.2. Climate change as a threat to price stability and financial stability

The course of climatization, namely the process by which climate change will transform society, and the current climate crisis are already having major implications on our economies, affecting both price stability and financial stability. While the time-horizon of climate change-related risks extends to long-term scenarios, at the same time, these risks constitute an imminent threat to the financial system as a whole. It is noteworthy that, although they are systemic in nature, they cannot be adequately internalized by market players, and that is the main reason why the role of macroprudential authorities should be assessed.\textsuperscript{132}

\begin{flushleft}
\textsuperscript{127} Judgement of the Court (Full Court) of 27 November 2012, Thomas Pringle v. Government of Ireland and Others, C-370/12, ECLI:EU:C:2012:756, para 56; BVerfG, Judgment of the Second Senate of 5 May 2020, 2 BvR 859/15, paras 63-70. See also, the Opinion of AG Kokott in the same case, para 85. Additionally, it would be interesting to quote a certain part of the Opinion of AG Villalón in the case of Gauweiler, which reads as follows: “[…] any monetary policy measure is ultimately encompassed by the broader category of general economic policy” (para 129). This last view is more “radical”, as it considers that monetary policy constitutes part of general economic policy.
\textsuperscript{128} Emphasis added by the author; Lastra, R. and Alexander, K. (2020), 12.
\textsuperscript{129} Psaroudakis, G. (2018), 135; Regarding the implementation of the implied powers principle, see Judgement of the Court of 9 July 1987, Federal Republic of Germany and others v. Commission of the European Communities, Joined Cases 281, 283, 284, 285 and 287/85, ECLI:EU:C:1987:351, para 18.
\textsuperscript{130} See Gortos, Ch. (2015), 53, where this contribution is characterised as ‘a submission of opinions’; See also, Lamandini, M., Ramos, D. and Solana, J. (2016). 7.
\textsuperscript{131} Ioannidis, M., Hlásková-Murphy, S.-J. and Zilioli, Ch. (2021), 20.
\end{flushleft}
On the one hand, the implications of the impending climate change and the risks connected to it, which are closely related to central banks and their proper functioning, could profoundly influence the monetary policy mechanism and the goal of price stability. Indicatively, the effects of climate change on agricultural production could lead to the destabilization of food prices. Noting that food prices are a constitutive part of consumer price inflation, this alteration would undoubtedly affect price stability. More specifically, an agricultural shock caused by a climate change-related flood may gravely impact supply and demand, and hence, lead to a price rise. Thus, it could be rationally deduced that climate change can affect key macroeconomic variables, such as inflation, output, productivity, consumption, investment and employment, and, by extension, imperil price stability. In this context, it should be also noted that, depending on the climate change mitigation policies adopted, the effects on different monetary policy regimes would differ.

On the other hand, the interconnectedness between natural phenomena and financial stability has been noticed since the 1880s. Most recently, the damages caused either by hurricane activity or by extensive wildfires worldwide have been devastating, signalling, on the one part, the urgency of dealing with climate crisis and, on the other part, the linkages between environmental sustainability and financial stability. Since 2018, the International Panel on Climate Change (hereinafter “IPCC”) has concluded that carbon-intensive activities can lead in the shorter term to extremely volatile weather patterns, while in the longer term may end up to global warming and the rise of sea levels. All the above phenomena translate to financial risks and significant disruption, that could indicatively lead to adjustments in the value of financial assets, either corporate-owned or State-owned, and progressively affect the liabilities of insurance companies, due to the system’s financial interconnectedness.

Climate-related risks are a source of financial risk, and, as such, they should be taken into consideration and subsequently integrated to the risk management framework of central banks and supervisors with the aim of ensuring the resilience of the system. These risks are systemic by nature and their specific features, namely deep uncertainty, endogeneity and non-linearity, threaten the traditional methodology for macroeconomic and financial analysis. Against this backdrop,

---

135 Network for Greening the Financial System (2020).
137 Specifically, the United States have suffered from the dustbowl phenomenon, due to unsustainable farming methods, that led to a serious banking sector distress. See more in Hornbeck, R. (2012), 1477-1507.
141 Ibid.
142 IPCC (2018).
143 See Battiston, S., Dafermos, Y. and Monasterolo, I. (2021), 1.
144 See, by way of mere indication, Battiston, S. et al. (2016).
148 Climate change constitutes a systemic threat to financial stability; See more on this in Alexander, K. (2019).
climate change will -and already does- affect the financial system by creating negative externalities\(^{150}\) to the economy, through two main -interconnected- channels: \textit{physical risk} (under Chapter 2.2.1.) and \textit{transition risk} (under Chapter 2.2.2.).\(^{151}\)

\subsection*{2.2.1. Physical risk}

The notion of physical risk corresponds to any change caused by natural disasters or the effects of long-term changes in weather and climate that can have an impact on the economy.\(^{152}\) As Kristalina Georgieva, the managing director of the International Monetary Fund (hereinafter “IMF”) has stated: “[w]hen a country is hit by a natural disaster – and these disasters are becoming more frequent and more severe – then property is affected, production capacity of agriculture, of industry is affected, even the very financial institutions may be affected”.\(^{153}\)

Natural disasters of all kinds, such as windstorms, wildfires, heat waves, floods, droughts etc. constitute risks that may be unavoidable,\(^{154}\) need to be comprehensively evaluated and could cause relative price shocks.\(^{155}\) Climate change may affect every sector of the economy -namely, households, corporations, governments, central banks-\(^{156}\) and a probabilistic risk-based approach would be needed for assessing the magnitude of their influence on the financial system as a whole.\(^{157}\) Indicatively, these natural phenomena, which are very likely to be substantially increased if no mitigation policies are applied,\(^{158}\) could have serious consequences for mortgage owners, and mainly banks, which would face a significant decrease in their regular income, that, in its turn, would result to potential future liquidity problems or even a banking crisis.\(^{159}\)

\subsection*{2.2.2. Transition risk}

The necessity of moving to a low and, subsequently, to a zero-carbon economy, as well as the whole transition procedure towards this goal, would not be easily realized.\(^{160}\) Based on the European Commission’s announcement in February 2021 concerning the target of reducing net greenhouse gas

\footnotesize{\(^{150}\) The market on its own cannot control these externalities related to environmental sustainability concerns in financial markets, due to the phenomenon called by Mark Carney (former Governor of the Bank of England) “\textit{tragedy of the horizon}”. This term is based on ‘short-termism’, namely the fact that the costs of taking action arise in the short term, while the benefits of this action are borne in the future. See more in \textit{Bank of England} (2015).


\(^{152}\) Basel Committee on Banking Supervision (2021), 5.

\(^{153}\) The statement at issue could be found in the following article of Amaro, S. (2021).

\(^{154}\) See \textit{European Central Bank} (2021a).


\(^{156}\) Network for Greening the Financial System (2019), 2.


\(^{158}\) Alogoskoufis, S. et al. (2021).

\(^{159}\) Banks are structurally vulnerable to liquidity risk; Potential liquidity problems may lead to banks’ insolvency. One of the main causes of liquidity strain is banking panics. For more see, Gortso, Ch. (2019), 4; Calomiris, Ch.W. and B.G. Gorton (1990); Carisano, R. (1992). It is also worth noting that since 2016, the ESRB has stated that potential threats related to climate change and subsequent -even small- market shocks may result in a domino effect. See for more, ESRB (2016), 12.

\(^{160}\) Bhatt, G. (2021).}
(hereinafter “GHG”) emissions to 55% by 2030 and to zero by 2050, the path towards inclusive growth will expose the financial system to several (transition) risks.

‘Transition risk’ translates into any societal change deriving from the relevant changes and adjustments connected to the transition to a low-carbon economy. These risks are associated with changes in public policy (as regards, for example, pollution control, resources, public subsidies, energy, infrastructures), innovation and breakthrough technologies, the investors’ and consumers’ stance towards a greener economy, as well as any initiative aiming at the mobilization and application of the climate-neutrality target. In this regard, concerns arise in respect to the magnitude of the impact of the transition to a green economy on financial markets, and, in particular the financial risks that could result from the process. These risks are highly likely to affect the demand and supply of goods and services, and, hence, influence price stability.

Under the light of the above, it is worth noting that these risks manifest themselves in terms of the already known financial risks, and they can both materialize either directly through their exposure to sovereigns, corporations and households, or indirectly through the negative effects of climate crisis on the financial system. In any case and in support of the role of macroprudential entities in securing the system from potential financial risks, financial policymakers are also interested in financial system’s resilience, especially in relation to the banking sector. It could be indicatively mentioned, that, given banks’ exposure to large investment projects, whose execution presupposes the compliance with a series of environmental requirements, any potential non-compliance in terms of their risk management framework or other related measures, could weaken banks’ competitiveness and, by extension, result in excessive direct and indirect losses.

3. Legal bases generating environmental obligations for the ECB

Although the primary responsibility for acting on climate change belongs to governments and national parliaments, the ECB should, nevertheless, -within its mandate- contribute to incorporating environmental considerations within its monetary policy framework. As climate change-related incidents could -and already do- affect price stability, other macroeconomic indicators (such as inflation, employment, interest rates) and financial stability, as previously analyzed, the alignment of the ECB with the Union’s goals for a sustainable and inclusive growth, is more than imperative. In this regard, the commitment of the ECB to systematically incorporate environmental objectives within

---

162 European Central Bank (2021a), 101.
163 Basel Committee on Banking Supervision (2021), 7.
164 More and more investors are incorporating climate change considerations into their investment strategies and decision-making. The introduction of the Taxonomy Regulation is undoubtedly conducive to this mentality.
165 Basel Committee on Banking Supervision (2021), 8; Consumers are progressively adapting to a more climate-friendly approach in respect to their everyday lives. For example, as far the banking sector is concerned, consumers are directing their saving towards institutions that are sustainable and environmentally aware.
166 Ibid.
168 These risks include credit risk, market risk, liquidity risk, operational risk etc.
171 Ibid.
172 European Central Bank (2021b).
its monetary policy, could be justified by the scope of its own mandate and the ratio of several other legal bases and principles either in the Treaties or in other legal -or not- instruments.

3.1. Key provisions in the Treaties

The duty of the ECB to incorporate environmental objectives into its mandate derives primarily from its own statutory objectives, as stipulated in the Treaty and the ESCB/ECB Statute. More specifically, by virtue of Article 127 para 1 TFEU, according to which the ECB’s primary objective is the maintenance of price stability in the Union, any potential obstacle to the achievement of this goal should be immediately recognised and addressed. Given the interconnectedness between climate change-related events and price stability, as previously presented, the ECB is required to align its monetary policy operations with the environmental policies of the Union, in order to fulfil its statutory purpose and maintain prices stable.

Moreover, the same duty arises from its secondary objective, as provided for in Article 127 para 1 as well. The ECB’s mandate to support the general economic policies in the Union, without prejudice to the primary goal, aims at contributing to the achievement of the Union’s objectives, as stipulated in Article 3 TEU.173 The said article constitutes one of the core articles that advocates for the incorporation of environmental objectives into the ECB’s mandate. More analytically, by supporting the general economic policies in the Union, the ECB is inherently upholding the “sustainable development of Europe based on balanced economic growth” as well as “a high level of protection and improvement of the quality of the environment”.174 As Benoit Cœuré, a former member of the European Parliament, has stated while dealing with the matter of whether environmental objectives are part of the ECB’s mandate, “there is scope for central banks themselves to play a supportive role in mitigating the risks associated with climate change while staying within [their] mandate”.175 In this regard, the legal mandate deriving mainly from Article 3 TEU seems to allow the ECB -and the Eurosystem in general- to green its monetary policy, and even require it support the transition to a circular and low-carbon economy, without prejudice to its primary goal.176

Furthermore, Article 11 TFEU introduces an independent general principle,177 the principle of integration, according to which “[e]nvironmental protection requirements must be integrated into the definition and implementation of the Union’s policies and activities, in particular with a view to promoting sustainable development”.178 The principle of integration is a ‘cross-sectoral’ or

---

173 See Committee on Economic and Monetary Affairs (2017), 12 and 15.
174 See Article 3 para 3 TEU; Draghi, M. (2017a).
175 See Cœuré, B. (2018); Similarly, Jens Weidmann, Bundesbank’s President has acknowledged that “[t]he importance of climate change and climate policy for central banks is not confined to our role as financial supervisors and guardians of financial stability, though. There can be all manner of monetary policy implications, too. Both climate change and climate policy can have a bearing on macroeconomic indicators such as output and inflation”.
177 The independent and general character of the principle of integration has been introduced by the Treaty of Amsterdam.
‘horizontal’ principle that applies to all Union policies and is binding on all EU institutions. The EU Treaties apply such horizontal effect to a few other matters of higher social importance besides environmental protection, such as non-discrimination, public health and gender equality. In that sense, as it has been already stated by Advocate General (hereinafter “AG”) Jacobs, the integration principle imposes legal obligations, and its binding character for EU institutions has been established since 1988.

Against the backdrop of CJEU’s jurisdiction, the principle of integration encapsulates a substantive and a procedural perspective. As far as the substantive dimension is concerned, a given competent authority is empowered with promoting horizontal environmental protection objectives along with more specific goals of a different Union policy. As repeatedly affirmed by the CJEU, the integration of environmental protection considerations in the Union’s policies translates into the incorporation of the environmental objectives prescribed in Article 191 TFEU. Besides the application of this principle to other sectors of common EU policy, this interpretation could be rationally applied to monetary policy as well. On the other hand, as far as the procedural dimension is concerned, Article 11 TFEU is often interpreted as an obligation on behalf of the EU institutions, in a sense that environmental objectives should be taken into account when designing and implementing

---

179 See Opinion of AG Kokott delivered on 16 May 2013 (ECLI:EU:C:2013:319), Judgement of the Court (First Chamber) of 3 October 2013, Confédération paysanne v. Ministre de l’Alimentation, de l’Agriculture et de la Pêche, C-298/12, ECLI:EU:C:2013:630, para 30. The broad interpretation of the scope of application of Article 11 TFEU is based on the interpretation of the CJEU for Article 130r para 2 of the EC Treaty, the precursor of Article 6 EC, which was, in its turn, the predecessor of the article in issue.


183 The integration principle has been established as a binding principle by Judgement of the Court of 29 March 1990, Hellenic Republic v. Council of the European Communities, C-62/88, ECLI:EU:C:1990:153, para 20; ClientEarth (2010), 6.


186 As a matter of fact, the integration principle is mostly a principle of reference rather than an autonomous rule. It is worth noting also that environmental protection does not enjoy absolute priority over other objectives, as this would ultimately jeopardise the other goals provided for in Article 3 TEU.

European policies. In this regard, European institutions should consider environmental objectives in policy areas laying outside the environmental protection stricto sensu.\(^\text{189}\)

Given that the ECB is the EU institution mainly responsible for the design and implementation of the single monetary policy in the Union, it is bound as such by the principle of integration provided for in Article 11 TFEU. Regarding the substantive dimension of the principle, the ECB should incorporate horizontal objectives of environmental protection into its mandate, while, as far as the procedural aspect is concerned, the ECB is obliged to ‘take into account’ these objectives of environmental protection in the process of designing and implementing monetary policy measures. Should these environmental protection considerations be disregarded, the validity of the relevant monetary policy measures could be rationally doubted.\(^\text{190}\)

Additionally, the necessity of integrating environmental protection objectives into the ECB’s mandate, and, subsequently, into its operation methods as a monetary authority, could be also based on Article 7 TFEU, according to which the Union should ensure consistency between its policies and activities. Although this provision does not confer a specific mandate for the ECB’s action regarding climate change, it guides the prioritisation of the general economic policies in the Union, and therefore, requires the incorporation of EU’s environmental policies and objectives into the ECB’s mandate in the pursuit of its primary and secondary goals.\(^\text{191}\) Hence, in compliance with the consistency rule, the ECB should take into account climate-related objectives by adapting its modus operandi to the current European environmental policy.

Consequently, in the framework set by the Treaties’ provisions, the ECB is mandated primarily to serve its primary objective of price stability, by preventing the materialisation of any potential risks that could imperil its achievement. Provided that price stability is safeguarded, the ECB should support environmental protection, as well as promote the green transition and the goals set by the EU pertaining to climate change, in pursuit of its secondary objective. Given that price stability constitutes “the best contribution that monetary policy can make to an environment of economic stability conducive to the wider objectives of the European Community, such as economic growth and employment creation”,\(^\text{192}\) the ECB should align its methods with the requirements of the impending climate change and, hence, take the EU’s environmental objectives into account in order to fulfil its

---


\(^\text{189}\) Opinion of AG Geelhoed in case C-161/04, Austria v. Parliament and Council, para 59. See, also, by analogy the Opinion of AG Kokott delivered on 18 November 2003 (ECLI:EU:C:2003:619), Judgement of the Court (Second Chamber) of 9 September 2004, Kingdom of Spain v. Commission of the European Communities, C-304/01, ECLI:EU:C:2004:495, para 69. In this context, it should be noted that the European Commission, the European Council and the European Parliament are all committed to the transition to a low-carbon economy. See for more, European Commission (2019a).


\(^\text{191}\) Elderson, F. (2021); Ioannidis, M., Hlásková-Murphy, S.-J. and Zilioli, Ch. (2021). 5.

\(^\text{192}\) European Central Bank (2001), 7.
mission. In support of the above, the ECB is bound by the integration principle and should follow the consistency rule, as prescribed in the Treaties. Hence, under the light of the above, the ECB should align its operations with the Union’s policies, and by extension, incorporate environmental objectives into its mandate.

3.2. Relevant binding and soft law instruments

Apart from the binding provisions laid down in the Treaties of the EU, based on which the ECB should align its monetary policy with the EU’s environmental goals, there are other instruments as well—either binding or non-binding—that advocate for the incorporation of environmental considerations into the ECB’s mandate. To start with, in 2015, the EU ratified the Paris Agreement, acknowledging that the green transition requires the alignment of financial flows with the climate change goals, to which the contribution of the ECB is needed. In February 2018, the European Parliament has stated in its annual report that “the ECB as an EU institution is bound by the Paris Agreement”, and that it should take action against climate change.

The necessity of the ECB’s contribution and adaptation to the critical European environmental requirements and to the goal of combating climate change, could be rationally deduced by the variety of measures that the Union has adopted towards this green transition. More specifically, by adopting the EU Green Deal in 2019, the Union, on the one hand, set the aim of becoming the first climate-neutral continent by 2050, and, on the other hand, commenced to introduce a series of environment-related initiatives, such as the European Climate law, the 2030 Climate Target Plan, the EU Strategy on Climate Adaptation and the Next Generation EU Recovery Fund, which were—and still are—conducive to the operability of a circular and sustainable economy. It is also worth noting that in the context of capital markets regulation, the EU proposed a classification system by virtue of the Taxonomy Regulation, based on which investments are classified as sustainable or not, contributing to the orientation of money flows towards ‘green’ investments.

Moreover, the proactive role of the ECB and the need to integrate environmental objectives into its mandate could be reasonably concluded by the ECB’s own actions. Specifically, on 8 July 2021 the ECB presented an action plan, by which its Governing Council was strongly committed to incorporate climate change considerations into its monetary policy operations, to expand its capacity in monetary policy and other features as regards climate change and to implement the respective action plan in parallel with the Union’s progress in the field of environmental disclosure and reporting. By adopting a new monetary policy strategy, the ECB has ceased to be neutral as regards the systemic risks posed by climate change and has signalled the immediate and urgent need to adapt its mission to the threatening environmental needs.

---

195 However, the absence of coherent taxonomies worldwide may hinder the creation of a global sustainable-finance market. For more, Panetta, F. (2021).
196 European Central Bank (2021b).
In support of the above, it is worth highlighting that a growing number of judicial decisions, in several jurisdictions, including the Dutch, German and Belgian courts, has already ruled that in cases where a State fails to take adequate action on climate change, this State’s conduct blatantly violates its obligation to protect citizens’ human rights and freedoms. It should be noted that in a monumental ruling by a Dutch court in the well-known Shell case, the multinational oil company, Royal Dutch Shell, was ordered to reduce its carbon emissions 45% by 2030, as it was considered to be a major pollutant causing dangerous climate change. The tendency of the European jurisprudence to orientate all players of the economy towards the goal of mitigating climate-related effects is undoubtable and, at the same time, it highlights the significance of the role of private undertakings or other legal persons, who, while not being policymakers, constitute indispensable parts for the protection of our environment.

4. Potential objections against the ‘greening’ of the ECB’s mandate

Despite the variety of arguments and legal bases on the grounds of which the inclusion of environmental objectives into the ECB’s mandate has become imperative in our era, there have been some interesting points raised against the alignment of the ECB’s mandate with the existing European environmental policies. These points could be summarized in the following: market neutrality (under Chapter 4.1.) and ECB’s independence in relation to its democratic legitimacy (under Chapter 4.2.).

4.1. Market neutrality

One of the arguments raised against the incorporation of environmental objectives into the ECB’s mandate is related to the violation of the standard commitment of the central bank to market neutrality. More specifically, the concept of market neutrality is not a treaty rule per se, but it is closely linked to the principle of “an open market economy with free competition, favouring an efficient allocation of resources”. However, the doctrine of market neutrality has acquired a rather heterogeneous meaning, and the extent to which it could create legal obligations for the ECB is doubted.

Broadly speaking, the market and the private sector in general are considered to be the optimum mechanism for the achievement of an efficient allocation of resources (market-oriented approach). More specifically, (market) neutrality in terms of central bank operations, is interpreted as the central bank’s setting policy that influences the macroeconomic variables (such as nominal growth and employment) rather than the microeconomic considerations of the economy. The European

---

199 See BverfG, Order of the First Senate of 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20; More information could be found in: Baümler, J. (2021).
200 Brussels Court of First Instance, VZW Klimaatzaak v. Kingdom of Belgium & Others, Order of 17 June 2021.
201 Euroactiv (2021).
203 This principle can be found in Article 127 para 1 TFEU; Schnabel, I. (2021).
206 Dellis, G. (2018), 73.
interpretation of market neutrality is related to a minimalistic concept of monetary policy, based on which monetary policy operations should be restricted to open-market operations and remain neutral towards the private sector.\(^{208}\) In that regard, it has been argued that the ECB’s involvement to climate change issues may oppose to the concept of market neutrality governing monetary policy operations.

It could be observed though that the system followed by the ECB and the NCBs in the eurozone is rather hybrid, as central banks -by definition- shape markets in various ways. In practice, the Eurosystem has long been interacting with private sector’s assets (e.g. corporate bonds, bank loans and bonds) either in the form of asset purchases and collateral, or in the framework of Asset Purchase Programs (hereinafter “APPs”) -also known as quantitative easing-, which have been intensely used since 2014 to safeguard price stability and support the monetary policy transmission mechanism.\(^{209}\) In that regard, the Eurosystem is not de facto following a minimalistic monetary approach, but, although the APPs were used as a tool to combat prolonged low inflation with the ultimate aim to stabilize monetary policy, the ECB conducts credit operations with private actors and indirectly fosters economic growth.\(^{210}\)

Against this backdrop, climate-related externalities are alarmingly signaling towards a reconsideration of the term of market neutrality. The ECB’s current policy and the neutrality regarding the structure of the market lead to the support of carbon-intensive companies through the purchase of their corporate bonds,\(^{211}\) and, subsequently, to the exposure of the ECB to climate-related risks.\(^{212}\) More and more central bankers across the EU are questioning the effectiveness and adequacy of market neutrality approach, as markets, on the one hand, are insufficiently measuring climate risk as financial risk\(^{213}\) and, on the other hand, are trapped in a ‘carbon bias’, because of the price distortion of polluting assets.\(^{214}\) Lastly, it should be added that prioritizing market neutrality over addressing climate-related risks could possibly threat the primary goal of price stability,\(^{215}\) and, consequently lead to the reversal of ECB’s prevailing neutral practice. Market efficiency and climate neutrality may be of relatively prevailing nature in the present case.

### 4.2. ECB’s independence and its democratic legitimacy

Another counterargument that has been raised as regards the involvement of the ECB as a monetary authority with climate change-related issues, is the potential conflict with its independence.\(^{216}\) Bundesbank President, Jens Weidmann, has recently stated that central banks may “become engulfed in politics and undermine their own independence”.\(^{217}\) In that regard, it has also been argued that, by incorporating environmental objectives into its mandate, the ECB is exceeding

---

209 Ibid; Lastra, R. and Alexander, K. (2020); See also, Gambetti, L. and Musso, A. (2020).
210 For an analysis of the effects of unconventional monetary policy, see Ampudia, M. et al. (2018).
211 Hercelin, N. (2019); It should be noted that carbon-intensive sectors comprise approximately 63% of ECB’s Corporate Sector Purchase Program, a proportion which is significantly lower than their contribution to employment and output in the euro area.
214 Knot, K. (2021); See also, Sleijpen, O. (2021).
the confines of its democratic legitimacy, as not only is it not able to take political decisions, but also it is not competent to intervene and correct political action (or inaction).\textsuperscript{218}

As it has been already stated, the ECB is an unelected, technocratic institution, exclusively responsible for the design and implementation of the single monetary policy in the euro zone,\textsuperscript{219} whose competence is backed by a strong declaration of independence.\textsuperscript{220} Pursuant to Article 130 TFEU, the ECB and the NCBs are independent in the performance of their tasks with regard to any instructions from both national governments and European institutions.\textsuperscript{221} The feature of independence is reconciled with the requirement of democratic legitimacy, as the ECB has been founded to operate within a narrow and democratically authorized legal mandate, namely within the limits of clearly defined objectives and instruments for their realization.\textsuperscript{222} The benefit of independence granted to the ECB is counterbalanced by the accountability of the institution,\textsuperscript{223} which in terms of monetary policy decisions, is limited to the explanation of how it used the existing instruments for the achievement of its price stability objective.\textsuperscript{224} It is important to note that after the CJEU’s judgement in the \textit{Weiss case}, the principle of proportionality acquired an important role as a backstop to the potential excessive action of the ECB, as it was held that the latter can make use of indirect measures for the support of its monetary policy provided that these measures comply with the principle of proportionality.\textsuperscript{225}

In response to the above argument, it could be reasonably supported that a potential failure of the ECB to act upon climate change may end up being a bigger threat to its independence. Given that public trust is crucial for the effective implementation of monetary policy,\textsuperscript{226} independence should be interpreted, \textit{on the one hand}, as a tool and not as an obstacle, and \textit{on the other hand}, as the response to the concerns of the public, otherwise the phenomenon of “undemocratic liberalism” could be nurtured.\textsuperscript{227} As provided for in the Treaties, the ECB, in the context of its secondary objective, is obliged to contribute to the economic goals of the Union, among which climate change has become a priority in the European agenda.\textsuperscript{228} In that regard, it is imperative that the ECB redefine the meaning of independence in terms of climate change\textsuperscript{229} and employ any -proportional- means available for achieving its objectives, which are threatened by the consequences of climate crisis.\textsuperscript{230}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{218} See, indicatively, \textit{Reuters} (2020).
\item \textsuperscript{219} \textit{Gortsos, Ch.} (2014), 156.
\item \textsuperscript{220} \textit{Lastra, R. and Alexander, K.} (2020), 15.
\item \textsuperscript{221} \textit{Gortsos, Ch.} (2014), 185.
\item \textsuperscript{222} \textit{De Boer, N. and Van’t Klooster, J.} (2020), 1690; By analogy, see \textit{Mouzouraki, P.} (2013), 534 et seq.
\item \textsuperscript{223} Article 284 para 4 TFEU; \textit{Gortsos, Ch.} (2014), 195; It is noted that, pursuant to Article 263 TFEU, the CJEU is exclusively competent to review the legality of the ECB’s decisions and actions.
\item \textsuperscript{224} \textit{De Boer, N. and Van’t Klooster, J.} (2020), 1690.
\item \textsuperscript{225} See for more, \textit{Lastra, R. and Alexander, K.} (2020), 15-17.
\item \textsuperscript{226} \textit{Christelis, D. et al.} (2020); \textit{Mellina, S. and Schmidt, T.} (2018).
\item \textsuperscript{227} \textit{Schnabel, L.} (2021a).
\item \textsuperscript{228} It is noted that the potential “democratic authorisation gap” is filled in part with the European Parliament’s resolutions, by which democratic support to the ECB’s role in fighting climate change is provided. Although these resolutions are not legally binding, they constitute an expression of democratic endorsement of the ESCB’s efforts towards this direction. See, \textit{Jourdan, S. and Beckmann, M.} (2021).
\item \textsuperscript{229} \textit{Van Tilburg, R.} (2021).
\item \textsuperscript{230} \textit{Ibid.}
\end{itemize}
\end{footnotesize}
Section B: The Reflection of the Incorporated Environmental Objectives on the ECB’s Monetary Policy Framework

As examined in the previous Section, the climate crisis and the impending climate change pose a major threat to the viability of our economic system, as well as to the operability of its key-players. The ECB, as a catalyst to the orchestration of a balanced financial system in the Union, primarily as a monetary authority - and equally significantly, as a banking supervisor - is faced with the challenges posed by climate-related events and risks, which are threatening to destabilize its operations.

Although governments and parliaments are primarily responsible for the facilitation of the transition to a carbon-neutral economy and the adoption of the relevant efficient measures for its realisation, the ECB may and should have a decisive role to the battle against climate change. The imperative character of the ECB’s contribution has been granularly explained in the previous analysis, which, despite the theoretical counterarguments raised, it has found its basis on multiple legal, economic and political reasons. This historic challenge calls for an all-encompassing approach, from which central banks could not possibly be excluded.

To the extent that the ECB is responsible for maintaining price stability and contributing to financial stability, the incorporation of environmental objectives and climate-related risk considerations into the existing monetary and macroprudential policy framework forms already part of its mandate. By undertaking a pre-emptive role in the context of facilitating green transition, the ECB will be able to safeguard the smooth conduct of its monetary policy and ensure, at the same time, that it remains resilient towards the emerging climate-related financial risks. In that regard, the ECB may employ conventional, unconventional and other appropriate measures in line with its mandate and in the context of its monetary policy framework, in pursuing the alignment of its operation with the Union’s environmental objectives.

1. Monetary policy instruments as a tool for pursuing environmental objectives

Monetary policy and the subsequent use of the relevant policy tools aim principally at serving the goal of price stability and at influencing money supply and, by extension, certain financial variables. Typically, these monetary policy tools are distinguished in conventional (interest-rate policy) and unconventional (balance sheet policy) measures. The former aims at affecting short-term interest rates, whereas the latter, which has been extensively used since the outbreak of the GFC and the subsequent fiscal crisis in the euro area, aims at influencing broader financial conditions.

1.1. Conventional monetary policy tools

For the implementation of its monetary policy, the ECB makes use of several different instruments. The term ‘conventional’ monetary policy tools corresponds mainly to: open-market operations (as they will be analysed below), standing facilities, through which the central bank may provide and

---

233 European Central Bank (2021c), 145.
absorb liquidity to and from banks (or other eligible counterparties) overnight, and the *minimum reserve requirements* for credit institutions, based on which (mainly) banks are obliged to hold a percentage of their deposits with the central bank accounts with the aim of stabilizing money market rates. By virtue of this operational framework, the ECB may utilize its traditional tools in such a way that environmental objectives and climate-related concerns are taken into consideration.

1.1.1. Open market operations and green eligible collateral

Before proceeding to the examination of the ‘green perspective’ of open market operations and assets eligible as collateral in the Eurosystem, it is deemed critical to briefly introduce these tools and their features. To start with, the conduct of open market operations is provided for in Article 18 para 1 ESCB/ECB Statute, according to which “[...] the ECB [...] may operate in the financial markets by buying and selling outright [...] or under repurchase agreement and by lending or borrowing claims and marketable instruments [...] and conduct credit operations with credit institutions and other market participants, with lending being based on adequate collateral”. These operations comprise the following types: main refinancing operations (hereinafter “MROs”), long-term refinancing operations (hereinafter “LTROs”), fine-tuning operations and structural operations. Focusing on the types of central importance for the Eurozone’s system, MROs and LTROs are liquidity-providing transactions with a frequency of one week and one month, respectively, which provide the financial sector with the bulk of refinancing. In more detail, MROs aim at steering both short-term interest rates and liquidity in the banking sector, whereas LTROs mainly provide for additional, longer-term refinancing. In that regard, the ECB provides an important (public) service to banks, by contributing substantially to their funding.

Under the light of the single monetary policy framework, as in force, it is required that all Eurosystem credit operations, including -by definition- the liquidity-providing transactions, are based on adequate collateral. Aiming at the protection of the Eurosystem from potential losses, there are certain eligibility criteria pertaining to the underlying assets provided by counterparties. As a matter of fact, the collateral framework of the ECB contributes to the minimization of its balance sheet potential impairment and to the promotion of prudent liquidity management. The ECB takes collateral primarily to limit credit risk, as well as to address liquidity risk in cases of non-marketable instruments. It should be noted that there is a single collateral framework implemented in the Eurosystem, in the context of which a list of assets considered eligible, is created. In that regard, the collateral mechanism may indirectly influence price stability, depending on its effects on bank

---

236 Gortsos, Ch. (2021), 10.
237 The regulatory framework for the implementation of the single monetary policy is governed by a series of legal acts, spearheaded by Guideline (EU) 2015/510 of the ECB of 19 December 2014 (General Documentation Guideline), as currently in force. The last amendment was introduced by Guideline 2021/889 of the European Central Bank of 6 May 2021.
239 Gortsos, Ch. (2021), 26.
240 European Central Bank (2004), 10; See also, European Central Bank (2000).
241 See indicatively, Goodhart, Ch. (1988); Ricks, M. (2016).
242 Article 18 para 1 ESCB/ECB Statute; Gortsos, Ch. (2021), 31.
243 European Central Bank (2011a), 98.
244 International Monetary Fund (2008), 7.
245 Bankenverband (2021), 5.
funding and the opportunity costs related to the collateral assets.  

Against this backdrop and bearing in mind that climate-related issues have been deafeningly present and threatening, the ECB’s support to the Union’s environmental policy could commence from reviewing its collateral policy in terms of risk and sustainability. At first, it is useful to distinguish between the ‘brown’ and the ‘green’ sector of the economy: the former comprises market players who produce damaging emissions for the environment, whereas the latter corresponds to undertakings using environmentally friendly operating methods. Following several relevant reports, it has been observed that the ECB’s collateral policy is not in line with the goals of the Paris Agreement and the EU Green Deal, as it underpins carbon lock-in and de facto supports carbon-intensive corporations, disproportionately to their contribution to employment and production. In particular, it has been reported that more than 120 billion euros in corporate bonds held by the ECB originate from carbon-intensive corporations, which contribute to the EU’s carbon emissions and fuel climate crisis. As a matter of fact, 62.7% of ECB’s corporate bonds held as collateral come from fossil fuel companies or other relative carbon-intensive undertakings, which contribute the minimum to employment and production.

In need for the alignment of the ECB’s monetary operations with the environmental objectives set in the Union and the shift to a climate-friendly and conscious modus operandi, the ECB could consider, on the one hand, which assets are deemed eligible for its collateral framework and, on the other hand, the consideration of climate-related risks in the valuation of assets and the calibration of its risk management framework. Specifically, the ECB may expand its collateral framework by including ‘green assets’ in the list of eligible assets, a measure that would promote funds associated with fewer climate-related risks, and subsequently, fewer possibilities of default. As a consequence, the cost of capital for low-carbon corporations would be significantly reduced in comparison with high-carbon sectors, ultimately awakening the ‘brown’ sector of the economy to adapt to the current climate conditions and enhancing effective measures against climate change. The liquidity premium generated by the increased eligibility of low-carbon assets -and, by extension, ECB’s contribution to the combat against climate change- would therefore create a powerful signalling effect for the financial sector. Lastly, the ECB should carefully assess any climate-related risks associated with relevant assets held as collateral, as well as monitor the methodology of valuating these assets and, if deemed necessary, update it.

1.1.2. Differentiated reserve requirements

Pursuant to Article 19 para 1 of the ESCB/ECB Statute, the ECB “may require credit institutions
established in Member States to hold minimum reserve on accounts with the ECB and national central banks in pursuance of monetary policy objectives”. The ECB’s Governing Council is responsible for the determination of minimum reserves by issuing relevant Regulations, while this determination is linked to the elements of each credit institutions’ balance sheet. The two key functions of minimum reserves are: the stabilization of money market interest rates and the amplification of structural liquidity shortage of the banking sector. Specifically, the required reserves enable credit institutions to smooth out any liquidity fluctuations, as well as they increase the demand for central bank credit, enhancing at the same time ECB’s ability to steer market rates.

The minimum reserve requirements could have an impact on bank’s funding, as, in case the central bank reduces the percentage of required reserves, banks will have more capital available for lending. In that regard, a potential differentiation in the required reserves can influence capital flows into the desired direction. More analytically, it has been supported that “[v]ariable ‘asset-based reserve requirements’ were [historically] widely used […] to promote lending to desired sectors”. Against this backdrop, the ECB may contribute to the fight against climate change and incorporate environmental objectives by utilizing the mechanism of minimum reserves. In particular, by lowering the reserve requirements for green assets, the ECB could favor green investments over conventional, carbon-intensive investments. Hence, banks owning a larger share of green lending could enjoy lower benchmarks of required reserves, and the ECB, in its turn, could substantially contribute by its traditional monetary tools to the support of Union’s environmental policy and the integration of sustainability into the market.

1.2. Unconventional monetary policy tools

Following the outbreak of the GFC (2007-2009) and the subsequent fiscal crisis in the euro area, the ECB adjusted its monetary policy and resorted to ‘unconventional’ monetary policy tools for the combat of low inflation. In the pursuit of bolstering liquidity, the ECB extended the maturity period of LTROs, expanded the list of eligible assets as collateral and purchased massive amounts of covered bonds, widely known as APPs. The utilisation of non-traditional monetary tools (balance sheet policy) by the ECB -also known as quantitative easing- may be conducive to the realisation of the desired green transition and the enhancement of the collective effort to deal with the climate crisis.

1.2.1. Green APPs

In the spirit of doing “whatever it takes to save the euro”, since the eruption of the GFC and

---

255 Article 19 para 1 second sentence of the ESCB/ECB Statute; Since 26 June 2021, Regulation (EU) 2021/378 of January 2021 “on the application of minimum reserve requirements (recast) (ECB/2021/1)” is applicable.

256 For more, see the ECB’s website: https://www.ecb.europa.eu/explainers/tell-me/html/minimum_reserve_req.en.html.


260 See on this, Campiglio, E. (2016) and Rozenberg, J. et al. (2013).


263 Gortos, Ch. (2021), 38.

264 European Central Bank (2012).
mainly in mid-2014, the ECB has started to employ unconventional monetary tools for the implementation of its monetary policy.265 Being one of the mostly used non-standard monetary tools in the application of the ECB’s quantitative easing, asset purchase programmes were principally introduced to fight deflation.266 Specifically, their main objective is the purchase of large quantities of financial assets,267 and mainly the purchase of sovereign and corporate bonds. Indicatively, some of the APPs are the Corporate Sector Purchase Programme (hereinafter “CSPP”), the Outright Monetary Transactions (hereinafter “OMT”) Programme and the Public Sector Purchase Programme (hereinafter “PSPP”).268 These measures lead to the expansion of ECB’s balance sheet, the injection of liquidity into the system and the subsequent reduction of interest rates.269

Before proceeding to the examination of ways through which the ECB could ‘green’ its quantitative easing operations, it is deemed critical to briefly underline some important conclusions related to the ECB’s asset purchase programmes. To start with, the OMT was the first programme that triggered intense debates pertaining to its compatibility with EU law,270 commencing with a CJEU judgement271 and concluding to an ultra vires review by the German Federal Constitutional Court (hereinafter “GFCC”),272 which held that: first, for determining whether a measure falls into the category of monetary policy framework, its objectives and the tools used to achieve them should be principally examined,273 second, the potential subsequent effects of a monetary measure to the economic policy do not alter the character of the measure merely because it may indirectly influence the stability of the euro area,274 and, third, the OMT is considered a monetary policy measure and is, therefore, compatible with EU law.275 Furthermore, apart from the OMT programme that has not yet been activated,276 the PSPP and the CSPP are part of an expanded asset purchase programme of the ECB,277 aiming at addressing problems of prolonged low inflation.278 It should also be noted that the PSPP was contested before the GFCC279 and, following a preliminary ruling of the CJEU, the validity

---

265 Gortsos, Ch. (2021), 38.
268 It is noted that in March 2020, the ECB launched the Pandemic Emergency Purchase Programme (PEPP) to counter the risks posed by the coronavirus (COVID-19) outbreak for the monetary transmission mechanism. For more on the features of PEPP, see at: https://www.ecb.europa.eu/mopo/implement/pepp/html/index.en.html.
270 The OMT programme comprises purchases of sovereign bonds of EU Member States without access to the markets and was firstly introduced on 6 September 2012. For more, see Hadjiemmanuil, Ch. (2020), 1333-1335.
274 Ibid, paras 51-52, with reference to the Pringle Case judgement, para 56.
275 Ibid, para 56.
276 For more information see Wolff, G. (2013).
277 Gortsos, Ch. (2021), 40.
279 For more on the final decision of the GFCC, see Dermine, P. (2020), 525-551.
However, it has been observed that the ECB’s purchases of corporate bonds as part of its CSPP, have been closely linked to the ‘brown’ sector of the economy, indicatively oil, gas and automotive industries. Specifically, ECB’s corporate purchases seem to not be aligned with the goals set by the Paris Agreement and the relevant EU commitments, as well as to not adequately reflect climate-related risks. As a consequence, the need for decarbonising the ECB’s monetary operations is considered imperative in order to achieve the required alignment with the democratically defined goals of a green transition.

Against the backdrop of its quantitative easing operations and aiming at the incorporation of environmental considerations into its monetary policy framework, the ECB may direct its asset purchase programmes towards ‘green’ financial assets, indicatively green bonds. The discussion on green quantitative easing has been recently unfolded as a preference in resorting to lending options that promote environmentally responsible development is observed. As a matter of fact, the enrichment of quantitative easing with a green perspective could be an important spur to the greening of ECB’s monetary policy operations, and, subsequently to its contribution to the realisation of Union’s environmental objectives. Since 2019, Christine Lagarde, ECB’s President, was stressing the need to “gradually eliminate” carbon assets and move towards green bonds. It is also worth noting that the ECB has already started to integrate climate considerations into the due diligence procedure for CSPP issuers. Nevertheless, there have been few - principally political- concerns raised pertaining to the potential violation of the market neutrality principle and of the ECB’s independence, attributed to the direction of central bank’s capital towards a certain part of the economy. In that regard, the carbon footprint of these green assets and the assessment of their accompanying risks are also under consideration.

---

280 Judgement of the Court (Grand Chamber) of 11 December 2018, Heinrich Weiss and Others (request for a preliminary ruling from the Bundesverfassungsgericht), C-493/17, ECLI:EU:C:2018:1000. For more, see Hinajeros, Al. (2020), 1376-1377; Ioannidis, M. (2021), 144-145. It is worth noting that in its judgement the GFCC declared the CJEU’s judgement in the Weiss case and the contested decision as ultra vires and not applicable in Germany. See BVerfG, Judgement of the Second Senate of 5 May 2020, 2 BvR 859/15; D’Ambrosio, R. and Messineo, D. (2021).

281 Nelsen, A. (2016); Corporate Europe Observatory (2016).


284 Green’ bonds are the financial instruments whose proceeds are invested towards green projects with a climate-related or environmental benefit. For more, see Volz, U. (2017), 16; European Central Bank (2021c), 157.


286 European Central Bank (2021c), 152.

287 See Climate Bonds Initiative (2019); Climate Bonds Initiative (2019a).

288 European Central Bank (2021c), 152.

289 For an analysis of the arguments raised, see above Section A, Chapter 4.1 and 4.2.


1.2.2. Green TLTROs

Another non-standard monetary policy instrument of the Eurosystem is the Targeted Longer-term Refinancing Operations (hereinafter “TLTROs”), which were introduced by the ECB in June 2014 directly aiming at stimulating demand and raising inflation.\(^{293}\) TLTROs aim at providing long term funding to credit institutions under attractive terms in order to maintain favourable borrowing conditions and stimulate lending of banks to the real economy.\(^{294}\) They are called ‘targeted’, as the amount of lending that banks can receive is linked to their loans to non-financial corporations and households.\(^{295}\) Their main distinctive feature is that they provide liquidity for a much longer period of time than the period associated with standard liquidity-providing instruments of the ECB, and thus they offer stable and dependable funding.\(^{296}\)

As already mentioned, the absence of environmental criteria in the provision of funding by the ECB necessarily conduces to the maintenance of unsustainable practices and carbon lock-ins.\(^{297}\) In that regard, the proposal of green TLTROs may be a key lever in the greening of ECB’s monetary policy operations. Green TLTROs are refinancing operations similar, \textit{on the one hand}, to LTROs as they contribute to the ECB’s primary goal of price stability by incentivising more lending, and, \textit{on the other hand}, to existing TLTROs as they retain their feature of ‘targeting’ a specific sector of the economy, namely, in the present case, green investments.\(^{298}\) The instrument of green TLTROs and the adopted EU Taxonomy\(^{299}\) are interconnected, as the percentage of the interest rate due by banks depends on the volume of lending that falls into the category of sustainable investments.\(^{300}\)

Firstly, the use of green TLTROs in the context of ECB’s monetary policy could be conducive to the realisation of its price stability mandate by addressing potential market failures and preventing any subsequent monetary imbalances. It should not be ignored that climate-related risks and subsequent policy inaction may lead to persistent shocks to output and inflation, namely cause price fluctuations.\(^{301}\) Moreover, TLTROs could contribute to financial stability -in the context of the ECB’s role as a banking supervisor-\(^{302}\) by reducing and dealing with climate-related financial risks that may appear on banks’ balance sheets and that they are currently inadequately priced.\(^{303}\) Last but not least, green TLTROs would facilitate the fulfilment of ECB’s secondary mandate, which requires the support of the Union’s environmental objectives, without prejudice to price stability. The criteria of

\(^{293}\) Gortsos, Ch. (2021), 43; Neri, St. and Siviero, St. (2019), 20; Draghi, M. (2014).
\(^{294}\) There are three series of TLTROs: TLTRO-I, TLTRO-II and TLTRO-III. For more details see at: https://www.ecb.europa.eu/mopo/implement/omo/tltro/html/index.en.html.
\(^{295}\) European Central Bank (2021d).
\(^{298}\) Ibid, 11.
\(^{300}\) Under this perspective, a “frontloading use of the Taxonomy” could be observed, as proposed in European Central Bank (2020).
\(^{301}\) Schnabel, I. (2020).
\(^{302}\) European Central Bank (2020).
sustainability stipulated in the Taxonomy Regulation\textsuperscript{304} reflect the financial market practices supported by EU’s economic objectives, and, in that sense, green TLTR\textsuperscript{o}s aim specifically at this kind of economic policy.\textsuperscript{305} Consequently, green TLTR\textsuperscript{o}s are deemed to reasonably be one of the appropriate measures for expanding ECB’s monetary policy toolbox.\textsuperscript{306}

2. Other policy recommendations pertinent to monetary stability

The adoption of a precautionary approach by the ECB and the subsequent integration of climate-related considerations into its monetary policy framework could be alternatively expressed through policy measures other than the conventional or unconventional monetary tools. The ECB is entitled to employ a series of policy tools for the achievement of its objectives,\textsuperscript{307} and, by extension for attracting green investments and adapting to the current risk-related requirements.

2.1. Green macroprudential regulation and climate-related stress tests

In an attempt to address climate-related risks and fight climate change, the ECB, in its role as a monetary authority and a banking supervisor at the same time, could raid the macroprudential toolkit to introduce appropriate regulatory measures for the incorporation of green objectives into its mandate.\textsuperscript{308} Specifically, green macroprudential policy defines the rules for financial institutions and contribute to the mitigation of systemic financial risks associated with climate change.\textsuperscript{309} These macroprudential tools can include differentiated capital requirements in relation to the proportion of a bank’s green portfolio, countercyclical capital buffers, restrictions on credit exposure, higher risk weight for carbon-intensive sectors and climate stress-tests.\textsuperscript{310} In that regard, the adoption of such tools could influence the lending activity of credit institutions and encourage them to invest more on green assets.

Specifically, given the recent economy-wide climate stress test conducted by the ECB\textsuperscript{311} and the release of the relevant results in September 2021,\textsuperscript{312} it is crucial to underline the importance of the climate stress test tool. This policy tool may admittedly have multiple benefits for the Eurosystem\textsuperscript{313} and the financial system as a whole, as it assesses its resilience towards the transition to a low-carbon economy by providing information on the risks resulting from climate change.\textsuperscript{314} Generally, stress tests have been a vital component of the banking toolkit, as they are used to examine how bank capital

\textsuperscript{305} For the allocation of private credit to the State’s economic policy objectives, see Bezemer, D. et al. (2018), 11; Monnet, E. (2018).
\textsuperscript{306} Braun, B. and Downey, L. (2020).
\textsuperscript{307} This phrase could directly refer to the Tinbergen Rule, which states that for each policy goal there must be at least one policy tool. For more see, Arrow, K. J. (1958), 89-97.
\textsuperscript{308} Richards, A. (2021).
\textsuperscript{309} Park, H. and Kim, J.D. (2020), 12.
\textsuperscript{310} Volz, U. (2017), 14.
\textsuperscript{311} Elderson, Fr. (2021).
\textsuperscript{312} European Central Bank (2021e).
\textsuperscript{313} See European Central Bank (2021e), 151.
\textsuperscript{314} De Guindos, L. (2021), 1,
and liquidity will be affected under certain hypothetical -but plausible- scenarios.\textsuperscript{315} In that regard, climate stress-tests investigate the resilience of banks and other non-financial companies in a range of climate-related scenarios.\textsuperscript{316}

In more detail, the centralized economy-wide climate stress test conducted by the ECB in 2021 comprises three pillars: \textit{first}, the assessment of the impact of extreme climate events over a period of thirty years, \textit{second}, mapping of banks through loan and security holdings by virtue of a comprehensive dataset, and \textit{third}, the recognition of climate-related transmission channels for firms and banks.\textsuperscript{317} The scenarios employed were the following: \textit{318} the ‘orderly transition’, \textit{319} the ‘disorderly transition’\textsuperscript{320} and the ‘hot house world’.\textsuperscript{321} Following the completion of the relevant climate stress test, the ECB concluded \textit{-inter alia-} that, if climate-related issues are not addressed, banks and companies will be severely affected. The cost of swiftly adapting and incorporating green policies is much lower than the cost of not acting at all,\textsuperscript{322} as well as the benefits of early action are profound.\textsuperscript{323} It is also noted that if climate change is not effectively mitigated, its subsequent effects would be concentrated in specific geographical areas and sectors.\textsuperscript{324} This climate stress test constituted the first step in the implementation of the ECB’s roadmap to greening its monetary policy, and its methodology will inform the separate supervisory climate stress test and the Eurosystem balance sheet climate stress that will be conducted in 2022.\textsuperscript{325}

Additionally, it should be highlighted that the Basel accord could be a particularly helpful tool to the process of incorporating environmental concerns into the banking system. Given that the current capital and liquidity requirements under Basel III do not necessarily require the consideration of the impact of climate-related risks on banks’ balance sheets,\textsuperscript{326} the assessment and incorporation of environmental risks by the Basel Committee as a potential threat to the stability of the banking sector, would have a powerful signaling effect for the market and would encourage regulators and central banks in general to adapt their risk management frameworks.\textsuperscript{327} Lastly, a straightforward path for addressing climate-related systemic risk would be the introduction of ceilings on the credit invested in certain carbon-intensive activities.\textsuperscript{328} Although this practice has not been extensively used the last years, it could be a useful means for limiting credit expansion without an increase of the interest.

\begin{itemize}
\item \textit{Volz, U. (2017), 14.}
\item \textit{Alogoskoufis, S. et al. (2021a), 5.}
\item \textsuperscript{318} These scenarios were created by the Network of Central Banks and Supervisors for Greening the Financial System. See \textit{Network for Greening the Financial System (2020a).}
\item \textsuperscript{319} The ‘orderly transition’ translates into a timely and effective application of climate policies, which effectively limit global warming.
\item \textsuperscript{320} This scenario corresponds to a delayed implementation of policies with high transition costs and limited physical risk.
\item \textsuperscript{321} It refers to the scenario that no climate-related measures are applied.
\item \textit{European Central Bank (2021f).}
\item \textit{Alogoskoufis, S. et al. (2021a), 5.}
\item \textsuperscript{322} \textit{Ibid, 8.} For example, firms located in areas that are mostly exposed to physical risk will face a severe crisis in their creditworthiness.
\item \textit{Alogoskoufis, S. et al. (2021a), 69; Caswell, G. (2021).}
\item \textsuperscript{326} See \textit{Basel Committee on Banking Supervision (2016); ESRB (2016).}
\item \textsuperscript{327} \textit{Park, H. and Kim, J.D. (2020), 12.}
\item \textsuperscript{328} \textit{Volz, U. (2017), 14.}
\end{itemize}
2.2. Disclosure requirements

Another policy tool that could be conducive to the correct pricing of climate-related risks and, by extension, to a smoother green transition with the contribution of the ECB, would be the introduction of disclosure requirements. As the Financial Stability Board’s Task Force on Climate-related Financial Disclosures proposes, the imposition of disclosure requirements on banks, companies and other market players would have a catalytic effect in improving transparency of climate-related financial risks, and, consequently, in forming the basis for an effective green macro-prudential regulation. More specifically, the ECB may introduce its own disclosure requirements in relation to private assets used as collateral in the context of its monetary policy operations. In this way, issuers will be incentivized to disclose complete and comparable information more quickly, and, thus the ECB will be provided with essential information for the preparation of its risk management toolkit.

Information gaps pertaining to the sustainability dimension of a company or an asset, hinder the decision-making procedure of investors or market players in general, especially of small and medium enterprises (hereinafter “SMEs”). These data gaps render the assessment of a firm’s risk exposure to climate risk more difficult, as well as make it harder to clarify the impact of their activities on non-financial objectives, such as the fight against climate change. Against this backdrop, the disclosure of climate-related risks pertaining to the business strategy and model of a bank or company, its governance or its risk management framework could equip (long-term) investors and the ECB with better data and, consequently, lead them to reassess their decisions under the light of climate change issues. Lastly, the ECB may consider the introduction of climate risk disclosures as a criterion for its asset purchase programmes and as the basis for a differential treatment of collateral and asset purchases.

3. The principle of proportionality as a backstop to the ‘greening’ of monetary policy

The employment of innovative ‘green’ monetary policy tools as well as the incorporation of environmental objectives into the already existing instruments in the context of the single monetary policy framework, require the ECB’s compliance, as an EU institution, with the general principles of EU law. As a general rule, insofar as EU institutions exercise their discretion on policy areas, they should comply with the European principles, among which the principle of proportionality is included. This exercise of political discretion is bounded by judicial review, by virtue of which it is verified if the relevant measure is vitiated by a manifest error or a misuse of powers, as well as if the

332 European Central Bank (2021c), 14; European Central Bank (2021f).
334 Ibid.
335 See Climate Bonds (2019).
336 See more in European Central Bank (2021c), 149; Reuters (2021); Moody’s Analytics (2021).
337 European Central Bank (2021c), 17.
Competent authority has abided by the limits of its discretion. Except for the proportionality principle, some other boundaries to the discretion of EU institutions are the principle of non-discrimination and the prevalence of human health and the environment over economic interests.

Proportionality principle constitutes the cornerstone of the EU administrative law principles, which has been acknowledged as a generally accepted rule since 1956. Pursuant to Article 5 para 4 TEU (ex Article 5 EC), “[u]nder the principle of proportionality, the content and form of Union action shall not exceed what is necessary to achieve the objectives of the Treaties”. Given the rather generic and practically vague wording of the principle in the Treaties, the CJEU has proceeded to the interpretation of proportionality principle and has defined the three judicial stages for characterising a measure as proportionate: first, the measure should be suitable or appropriate for achieving the objective pursued (“suitability test”), second, the measure should be necessary, namely the less onerous one among the available alternatives for the attainment of the relevant objective (“necessity test”) and proportionate stricto sensu, namely the burden imposed on the affected party should be proportionate in relation to the objective pursued. The Court is competent to exercise judicial control over the actions of the Union and the measures taken by Member States by applying the above criteria for reviewing whether the principle of proportionality is respected. In that regard, proportionality principle is not only a fundamental principle of EU law, but also a means for

---

339 The issue of judicial review of ECB decisions will be further analysed in Chapter 4 below. See, indicatively, Judgement of the Court of First Instance (Second Chamber, Extended Composition) of 26 November 2002, Trenker v. Commission, T-141/00 (Joined Cases T-74/00, T-76/00, T-83/00, T-84/00, T-85/00, T-132/00, T-137/00, T-141/00), EU:T:2002:283, para 201; See also Opinion of AG Kokott delivered on 18 November 2003 (ECLI:EU:C:2003:619), Judgement of the Court (Second Chamber) of 9 September 2004, Kingdom of Spain v. Commission of the European Communities, C-304/01, ECLI:EU:C:2004:495, para 59.

340 Judgement of the Court of First Instance (Second Chamber, Extended Composition) of 26 November 2002, Trenker v. Commission, T-141/00 (Joined Cases T-74/00, T-76/00, T-83/00, T-84/00, T-85/00, T-132/00, T-137/00, T-141/00), EU:T:2002:283, para 186.

341 Ibid. In this case, the notion of “economic interests” corresponds to those of individual market participants.


344 The principle of proportionality has started to flourish the period of 1980-1990, during and after which the European Court of Justice (the then Court of Justice of the European Communities) has developed the principle at hand by means of its case-law. See for more, Sarmas, I. (2018), 19.


346 It is worth noting though, that, as far as the third stage is concerned, there have been conflicting opinions and uncertainty on the matter. According to Craig, P. (2012), it is suggested that the EU courts will assess this aspect of the proportionality test only if an applicant directly addresses its arguments towards it.

347 See, Judgement of the Court (Fifth Chamber) of 13 November 1990, The Queen v. Minister of Agriculture, Fisheries and Food and Secretary of State for Health, ex parte: Fedesa and others, ECLI:EU:C:1990:391, para 13; Judgement of the Court (Sixth Chamber) of 16 December 1999, Union Deutsche Lebensmittelewerke GmbH v. Schutzverband gegen Unwesen in der Wirtschaft e.V., ECLI:EU:C:1999:615, para 30; Judgment of the Court of 12 March 2002, The Queen v. Secretary of State for the Environment, Transport and the Regions, ex parte Omega Air Ltd (C-27/00) and Omega Air Ltd, Aero Engines Ireland Ltd and Omega Aviation Services Ltd v. Irish Aviation Authority (C-122/00), ECLI:EU:C:2002:161, para 62.


349 Christianos, V. et al. (2011), 159.
controlling the activities of the Union and its Member States.\textsuperscript{350}

As it has been generally accepted, the CJEU is usually ‘restrained’ in the application of proportionality tests over the actions of the Union, as it principally presumes that the legislator encompasses unifying objectives through its activity.\textsuperscript{351} By recognizing legislator’s discretion to conclude which measure is more suitable, necessary and proportionate in each relevant case, the Court may deem an action as disproportionate mainly in cases where there is an obvious or blatant violation of the principle.\textsuperscript{352} The opposite is demonstrated in the judicial exercise of the proportionality test on measures taken by Member States.\textsuperscript{353} Hence, it is important to note that the CJEU normally regards proportionality principle as a lenient limit to political discretion, especially in policy areas that require complex assessments, such as monetary policy.\textsuperscript{354}

More analytically, the principle of proportionality applied in monetary policy framework presupposes that: first, the ECB’s actions should be suitable to address any potential and identified risks to price stability, second, they should be necessary for the achievement of the desired objective, and third, the benefits arising from ECB’s activity should outweigh their costs.\textsuperscript{355} As highlighted in Gauweiler case, in which the ECJ issued a preliminary ruling on the validity of the OMT programme (referring to the purchase of government bonds in the secondary markets) that the ECB has expressed its intention to implement in the exercise of its monetary policy, the ESCB has a wide margin of discretion in the design and implementation of monetary policy measures because “[it] is required […] to make choices of a technical nature and to undertake forecasts and complex assessments”.\textsuperscript{356} The same rationale has been followed by the CJEU in Weiss case, where the Court recalled the ECB’s broad discretion in the area of monetary policy and reviewed whether it has made a manifest error of assessment in its decision to apply the PSPP (as part of its quantitative easing programme, relating to the purchase of sovereign bonds in the secondary markets).\textsuperscript{357} Hence, the CJEU proceeded to the examination of proportionality regarding the PSPP, by assessing the suitability of the programme in relation to the monetary objectives pursued, and its necessity in comparison with the available tools.\textsuperscript{358}


\textsuperscript{351} An example of the ‘restrained’ stance of the Court could be found in Judgement of the Court of 17 December 1970, Internationale Handelsgesellschaft mbH v. Einfuhr- und Vorratsstelle für Getreide und Futtermittel, Case C-11/70, ECLI:EU:C:1970:114, para 12, 16.


\textsuperscript{354} Solana, J. (2018). 15. See also, Judgement of the Court of 10 December 2002, The Queen v Secretary of State for Health, ex parte British American Tobacco (Investments) Ltd and Imperial Tobacco Ltd, Case C-491/01, ECLI:EU:C:2002:741.

\textsuperscript{355} Mersch, Y (2019).

\textsuperscript{356} See, C-62/14, Gauweiler, para 68. For a granular analysis of the decision, see Lamandini, M., Ramos, D, and Solana, J. (2016). 6-19. See, also by analogy, Judgement of the Court (Fourth Chamber) of 8 July 2010, Afton Chemical Limited v. Secretary of State for Transport, C-343/09, ECLI:EU:C:2010:419, para 28 and Judgement of the Court (Second Chamber) of 17 October 2013, Billerud Karlsborg AB and Billerud Skärblacka AB v. Naturvårdsverket, C-203/12, ECLI:EU:C:2013:664, para 35.

\textsuperscript{357} For an analysis of the consequences of PSPP regarding the principle of proportionality, see Markakis, M. (2020), 1258; Egidy, S. (2021), 285-308.

\textsuperscript{358} See, C-493/17, Weiss, para 78 et seq. See also, Hinajeros, A. (2019), 663.
Under the light of the above, it could be supported that potential objections on the legality of ‘green’ monetary policy tools adopted by the ECB, are backed by the principle of proportionality. More specifically, proportionality equals efficiency,\(^{359}\) as it practically constitutes a means for weighting the advantages and disadvantages of a measure, namely -shortly- an optimization tool.\(^{360}\) By analogy, a monetary measure -either conventional or ‘green’- is deemed to be beneficial and compatible with the objective pursued, when its costs or the imposed burden are not excessive in comparison with the desired outcome.\(^{361}\) Additionally, it should be reminded that the legality of a measure, irrespective of its nature as monetary, economic or else, is largely based on its reasoning.\(^{362}\) Establishing the causal link between the reasons leading to the adoption of a measure and the measure itself is the fundamental first step for justifying the proportionality, and, by extension, the legality of an act.

Against this backdrop and with the assumption that the ECB is mandated to contribute to environmental protection and, therefore, incorporate into its monetary policy framework ‘green’ instruments, the principle of proportionality could be utilised as a ‘backstop’ to their contested legality.\(^{363}\) Compliance with the prerequisites of necessity, suitability and proportionality \textit{stricto sensu} could play an instrumental role both in validating the legitimacy of a monetary policy measure and in establishing, to the extent that the concerned measure contributes to the ‘greening’ of monetary policy framework, a legal basis for the ECB to align its \textit{modus operandi} with the current environmental demands of the Union.

4. **An assessment of the CJEU’s future stance towards the legality of the ECB’s green monetary policy**

The ECB’s competence to design and implement the single monetary policy in the Union coupled with its statutory independence does not translate into unfettered discretion.\(^{364}\) The ECB is bound by several statutory provisions and other binding and non-binding instruments regarding environmental protection issues, such as -indicatively- Article 191 TFEU, Article 37 of the EU Charter of Fundamental Rights and Article 11 TFEU,\(^{365}\) and, as an EU institution, it is also subject to the judicial review of the CJEU.\(^{366}\) Although the legality of ‘green’ monetary policy measures has not yet been examined by the Court, as the question of whether the ECB is mandated to incorporate environmental considerations into its operations precedes any judicial reviews on the matter, it would be interesting to attempt to outline the CJEU’s stance towards a future relevant judicial case. For lack of relevant

\(^{361}\) See the interesting case-law of the French Supreme Administrative Court on the matter, Conseil d’ État (Assemblée), 28.05.1971, Ministre de l’équipement et du logement c. Fédération de défense des personnes concernées par le projet actuellement dénommé “Ville nouvelle Est”, No. 78825; Conseil d’ État (Assemblée), 28.03.1997, Association contre le projet de l’autoroute transchablaissienne et autres, No. 170856.
\(^{362}\) This procedural guarantee has been underlined by the ECJ in \textit{Gauweiler} case (para 69), where the Court held that “[t]hose guarantees include the obligation for the ESCB to examine carefully and impartially all the relevant elements of the situation in question and to give an adequate statement of the reasons for its decisions” (emphasis added).
\(^{363}\) See for more, Marsh, D. (2020).
\(^{365}\) The regulatory framework pertaining to environmental issues under which the ECB should operate has been granularly presented under Section A, Chapter 3.
First and foremost, pursuant to Article 263 TFEU, the CJEU is competent to review the legality of the ECB’s acts, except for its recommendations and opinions, in the context of an action for annulment brought before the Court either by Member States, EU institutions or any natural or legal person.\(^{367}\) It is noted that the *locus standi* of the non-privileged applicants, i.e. natural and legal persons, requires that an act is either addressed to that person or that it is of direct and individual concern to it.\(^{368}\) The subject of the judicial review is clearly delineated in the same article, stipulating that the CJEU has jurisdiction to review the legality of an EU institution’s act (including the ECB’s) in matters extending to lack of competence, infringement of an essential procedural requirement, infringement of the Treaties or of any rule relating to their application, and misuse of power.\(^{369}\)

More analytically, given that the ECB is competent for maintaining price stability and controlling the transmission mechanism of monetary policy, the establishment of a direct and individual link with a legal and -*a fortiori*, a natural- person is quite difficult.\(^{370}\) As a matter of fact, the NCBs, being usually the recipients of the ECB’s decisions, act as an ‘intermediary’ between the latter and the legal persons to which the measure of monetary policy applies,\(^{371}\) and their conflicts are primarily resolved at a national level.\(^{372}\) However, as it has been repeatedly observed, the ECB’s decisions related to the implementation of monetary policy are usually reviewed in the context of a preliminary request brought before the CJEU by national courts.\(^{373}\) The above observation is justified, merely because, when a national court has to incidentally review the legality of the ECB’s decisions, the former cannot declare such decision void as originating from an EU institution.\(^{374}\) On the contrary, it should refer the matter to the CJEU by way of preliminary reference.\(^{375}\)

Taking into consideration the recent case-law of the Court, referring indicatively to *Pringle* case\(^{376}\) or *Gauweiler* case, and more recently *Weiss* case, the CJEU has played a catalytic role in the formation of monetary and economic policy in the Union. It has developed a consistent standard of judicial review, which comprises “[…] *a close scrutiny of the purposes of a mandate or competence, a check whether the instruments deployed serve the mandate, and an analysis whether the effects are proportionate to the objectives*”.\(^{377}\) This trilogy of objectives in the context of the Court’s judicial review may be confirmed by a mere examination of its rationale in the highly-discussed *Weiss* case: *first*, the Court has assessed whether the unconventional monetary policy measure of PSPP adopted

\(^{367}\) It is noted that pursuant to Article 35 ESCB/ECB Statute, the CJEU has exclusively jurisdiction on ECB monetary matters.

\(^{368}\) Grünwald, S. (2021a), 408.

\(^{369}\) Article 263

\(^{370}\) Ibid, 409.

\(^{371}\) By analogy with the argument used in Grünwald, S. (2021a), 409, concerning the relation among the National Resolution Authorities (NRAs), the SRB and the banks to which the relevant measures apply.

\(^{372}\) The interaction of the ECB with natural persons is quite limited and mostly -if not always- indirect.

\(^{373}\) See the cases of Gauweiler and Weiss, by way of mere indication.

\(^{374}\) Grünwald, S. (2021a), 412.


\(^{376}\) See Herrmann, Ch. (2013), 410-416.

by the ECB, contributed to the purpose of price stability, second, if the relevant Decision was in line with the ECB’s monetary policy mandate, and, third, it proceeded to a proportionality test in relation to the objectives of monetary policy.

Additionally, it is useful to note that the ECB has discretion in determining which measures of monetary policy that it deems appropriate, would use for achieving its policy objectives. It is commonly accepted though, that the technical complexities accompanying the mechanism of monetary policy as well as the subsequent effects of the implementation of monetary policy measures on the financial system as a whole, render the substantive review of relevant matters a cumbersome issue for the CJEU. In other words, the complexity and specificity of the monetary policy framework and the added difficulty in determining whether a measure is considered part of monetary or economic policy, intensify the level of judicial consistency required by the Court in dealing with the future issue of ‘greening’ the single monetary policy.

Nevertheless, the CJEU has progressively formed its opinion in relation to many institutional and operational aspects of the ECB as an EU institution. In that regard, the Court’s jurisprudence is essential both for interpreting the role of the ECB in the context of the ESCB and the European legal system, and, by extension, for foreseeing its future stance in the issue at hand. More specifically, in the case between the Commission of the European Communities and the European Central Bank, the Court held that the ECB’s independence to carry out its statutory tasks is “strictly functional” and is not intended to exempt it from complying with the statutory provisions in the Treaties and the ESCB Statute, but, on the contrary, the ECB should contribute to achieving the objectives of the European Union. Furthermore, as stipulated in the Gauweiler case, the ECB is required to comply with certain procedural guarantees while exercising its political discretion with the aim of protecting monetary and/or financial stability. According to the above ruling, the ECB is instructed to proceed to a careful and impartial examination of the relevant elements of the case as well as to adequately state the reasons for its decisions. A recent and relevant paradigm has been noted in the context of the resolution of Banco Popular, where the Appeal Panel of the Single Resolution Board (hereinafter “SRB”) has underscored the importance of the right to access to documents, as a procedural guarantee

---

378 See, Weiss, para 52, 54, 76.
379 Ibid, para 10-12.
380 Ibid, para 71 et seq.
381 Ioannidis, M., Hlásková-Murphy, S.-J. and Zilioli, Ch. (2021), 11. For a comparative examination of the EU administrative discretion, see Mendes, J. (2017).
382 By analogy with the same issue raised regarding the resolution mechanism in the context of the SRM in Grünewald, S. (2021a), 397.
383 It is noted that in Gauweiler (para. 38), the Court chose to focus its ruling on the objectives of monetary policy rather than the effects of the measures used in order to determine whether the respective measure falls into the category of monetary or economic policy.
385 Ibid, para 126; See also European Central Bank (2003); Braun, B. (2017), 12.
387 See, Gauweiler, para 69.
for investors affected by the implementation of SRB’s decision.388

Moreover, by virtue of CJEU’s jurisprudence in the field of monetary policy, it is widely accepted that the ECB enjoys broad discretion when it must decide on matters of technical nature or when it has to undertake complex assessments and forecasts.389 The above discretion of the ECB is counterbalanced by the principle of proportionality, which is repeatedly used by the Court in order to assess the legitimacy of a measure. In these cases, namely where the ECB has to deal with technical issues and undertake complex forecasts, the Court conducts a “manifest error of assessment” test in reviewing the proportionality of a monetary measure. In that regard, it its noted that the CJEU has recognized the broad discretion of the ECB in the field of monetary policy, and, especially in the process of structuring and implementing asset purchase programmes.390 However, this deference and lenient scrutiny of the Court does not correspond to an absence of control,391 but, on the contrary, it translates into a substantial and procedural judicial review: as far as the substantial part is concerned, the fact that a reasoned analysis is disputed does not necessarily lead to a manifest error of assessment on the part of the ECB, since, due to the complexity of monetary policy measures and the discretion granted to the ECB, the latter is solely required to use its economic insight and technical means in order to proceed to the relevant analysis.392 On the other hand, the procedural part of judicial review extends to the review of ECB’s compliance with certain procedural guarantees, which include -as previously stated- the obligation to present the reasons for each decision, the obligation to carefully and impartially examine the relevant elements of each situation and the requirement to carry out an accurate analysis on the basis of its economy and technical expertise.393

To conclude, as acknowledged by Mr. Draghi in his response to a parliamentary question in 2018, the CJEU shall be prepared to deal with potential validity issues concerning any decision that would disregard environmental concerns.394 Given the ECB’s discretion in determining which measures are more appropriate for the implementation of the single monetary policy in the Union, as well as the complexities, technicalities and other economic variables accompanying the monetary policy mechanism, the Court should employ all the interpretative tools originating both from the Treaties and -mostly- from its jurisprudence in order to assess the legality of ‘green’ monetary policy measures. To sum up, it should primarily review whether the adopted measure in the context of the ECB’s monetary policy, contributes to the Union’s objectives. Additionally, the Court should apply the proportionality test on the measure under examination, processing all three stages, namely suitability,

388 See Decision of the Appeal Panel of the SRB in case 38/17 to 43/17, available at SRB’s website: https://www.srb.europa.eu/en/cases/search. Compliance with procedural guarantees has been emphasized also by the European Court of Human Rights (ECtHR), which has repeatedly pointed out the importance of the right to a fair trial. For more, see Lamandini, M., Ramos, D. and Solana, J. (2017), 255 et seq.
389 Ioannidis, M., Hlásková-Murphy, S.-J. and Zilioli, Ch. (2021), 26; See also, Judgment of the Court (Fourth Chamber) of 8 July 2010, Afton Chemical Limited v. Secretary of State for Transport, C-343/09, ECLI:EU:C:2010:419, para 28; Judgement of the Court (Second Chamber) of 17 October 2013, Billerud Karlsborg AB and Billerud Skärblacka AB v. Naturvårdsverket, C-203/12, ECLI:EU:C:2013:664, para 35.
390 See Gauweiler, para 68; Weiss, para 73.
391 See Judgment of the Court (Grand Chamber) of 15 February 2005, Commission of the European Communities v. Tetra Laval BV, Case C-12/03, ECLI:EU:C:2005:87, para 39.
392 See Weiss, para 91; See also, Gauweiler, para 75.
393 See Gauweiler, para 69 and 75; Weiss, para 30 and 91.
394 Committee on Economic and Monetary Affairs (2018a), 18.
necessity and proportionality *stricto sensu*. Against this backdrop, it should also assess the compliance of the relevant decision with the substantial and procedural perspective of the principle, and, by extension review whether the measure under discussion is adequately justified, thoroughly examined and appropriately analyzed with regard to the ECB’s technical and economic expertise.

The entirety of these methodological tools and the uniqueness of (green) monetary policy measures should be taken into consideration by the Court in its hypothetical or forthcoming review of their legality in the context of EU law. A concise and in-depth assessment of the newly introduced ‘green monetary policy’ of the ECB would require whatsoever the readiness of the Court to utilize its classical methodological tools and, at the same time, its novelty in recognizing the necessity of aligning the Union’s monetary policy framework with its environmental objectives.

---

395 The components of proportionality principle have been presented in detail under Section B, Chapter 3.
Conclusion

At the dawn of the 26th UN Climate Change Conference taking place in Glasgow this year, bringing countries together towards the goal of accelerating compliance with the Paris Agreement and the UN Framework Convention on Climate Change, the imperativeness of dealing with climate change is undisputed. Environmental protection has become a fundamental principle of the European Union and the entirety of the legal framework comprising both the statutory provisions and the relevant -binding or legally significant- instruments in the Union, highlight the holistic European environmental approach on the matter, as well as form the basis on which the ECB could play its part.

Although sustainability has long been a general economic policy in the Union, the impending climate change imperils any notion of balanced growth and circular economy. It is noted that the intertwining of the economy and climate change promises to structure global politics and social balance for the foreseeable future.396 More specifically, the devastating effects of the current climate crisis are becoming increasingly evident. By way of mere indication: major flooding in north-western Europe, China and north-eastern United States, extreme heatwaves and wildfires in southern and eastern Europe and in North America, as well as increased droughts and more severe storms worldwide. These paradigms are tragically echoing that the climate and environmental crisis is already upon us.

The ECB is an EU institution and a supranational monetary authority, competent to define and implement the single monetary policy in the Union. Its primary objective is defined under Article 127 para 1 TFEU, corresponding to price stability, namely -according to the ECB’s renewed monetary policy strategy- to the maintenance of prices at a symmetric and medium-term inflation target of 2%. Without prejudice to the above primary goal of price stability, the ECB should support the general economic policies in the Union, as enshrined in Article 3 para 3 TEU. Specifically, the ECB shall contribute to the sustainable development of Europe based on a high level of protection and improvement of the quality of the environment. Moreover, Article 127 para 5 TFEU sets out the duty of the ECB to contribute to the smooth conduct of European policies relating to financial stability, without imposing though any exclusive competence on the ECB.

Climate-related threats are typically distinguished into two categories, physical risk and transition risk, and they both imperil price and financial stability. On the one hand, physical risks correspond to all risks resulting from natural disasters and gradual climate changes in general (ex. pollution, droughts, biodiversity loss, wildfires, storms, deforestation), which may harm the ability of borrowers to repay their debts or depreciate the value of collateral assets. This was also emphasized by the ECB’s Vice-President in March 2021, stating that: “[…] in the absence of further climate policies, the costs to companies arising from extreme weather event rise substantially, and greatly increase their probability of default”.397 On the other hand, transition risks include those risks which are closely linked to the transition to a low-carbon economy, namely green transition. These risks are hugely influenced by legislative measures and consumer preferences, and may have a significant impact on the broader

396 Worland, J. (2021), 56.
economy in case of an abrupt transition. Climate-related risks are interconnected with stable prices and financial stability, constituting a systemic threat for the economy. In the risk management framework of credit institutions, and, *a fortiori*, of the ECB, it is more than imperative that the latter confront these externalities, primarily in fulfilment of its primary objective of price stability.

The ECB is mandated to take into consideration climate-related concerns, and, by extension, to undertake proactive measures in achieving the goal of environmental protection and aligning its operations with the Union's policy goals. Firstly, this duty arises from its own mandate: since climate-related risks threaten price stability, the ECB is the only institution responsible for securing its realisation and maintaining prices stable against any peril. In that regard and pursuant to its secondary objective, the ECB is required to support the general economic policies in the Union, among which the goal of environmental protection and sustainability is included. Furthermore, the ECB is bound by the integration principle as enshrined in Article 11 TFEU, which applies to all EU policies and activities, and by the consistency requirement presented in Article 7 TFEU. Additionally, besides the above Treaty provisions which set the ECB’s operation field, there are other policy instruments that shape the regulatory framework in which the ECB shall act. A series of European initiatives, such as the EU Green Deal, the Taxonomy Regulation, the EU Recovery Fund and the introduction of the EU Climate Law, as well as the recent case-law of several national Courts in the EU, dictate a ‘greener’ approach to every aspect of institutional activity, including the ECB’s monetary policy.

Against this position, counterarguments have been raised with regard to the principle of market neutrality and the ECB’s democratic legitimacy and independence. The doubts are mainly referring to the potential infringement of the ECB’s institutional independence and democratic legitimacy due to the incorporation of environmental objectives into its monetary policy mandate, as well as the possibility of disrupting the ‘neutrality’ of the market by focusing its operations on certain ‘green’ assets. However, the ECB’s independence should not be considered as an obstacle, but rather as a tool for responding to the concerns of the public and realising its monetary objectives. Market efficiency and climate neutrality shall prevail over the principle of market neutrality, which may unjustifiably limit the ECB’s monetary operations and, subsequently, result in enormous costs both in financial and environmental terms.

Under the light of the above, it could be rationally concluded that the ECB shall accept its precautionary duty and undertake early action in the fight against climate change. Although the policy objectives in the Union are multiple, climate risk policy enjoys a primary position in comparison with other policy objectives, by its nature. In that regard, the pre-emptive stance of the ECB, namely the incorporation of environmental objectives into its mandate and the alignment of its policy framework with the current climate-related goals, would -by definition- influence its monetary policy tools. More analytically, the ECB’s adaptation to the environmental policy framework in the Union could be better effectuated by virtue of both its conventional and unconventional monetary instruments. Indicatively, the ECB may reshape its collateral framework by including ‘green’ assets as eligible collateral, it could differentiate its reserve requirements, as well as it may introduce ‘green’ TLTROs in order to achieve a longer-term refinancing mechanism in line with the current environmental considerations. It is noteworthy that the ECB could adapt its operations as regards its asset purchase programmes as well, which have played a crucial role recently in dealing with multiple -financial or other- crises.
‘Green’ APPs may focus on ‘green’ assets, namely assets connected to low-carbon activities and corporations, and, hence, accelerate the transition to a sustainable economy, in which greenhouse gas emissions and policies disregarding environmental concerns will have been significantly restricted.

Against this backdrop, it is noted that the suggested adaptations to the already existing monetary policy tools, as well as the introduction of alternative policy measures, such as relevant disclosure requirements or climate stress testing, should be in conformity with the current regulatory framework in the Union, as well as its interpretative tools. Thus, the principle of proportionality could be used as a counterweight and an indicator of the legitimacy of the ECB’s monetary measures. As provided for by the CJEU’s jurisprudence, the criteria of suitability, necessity and proportionality stricto sensu constitute indispensable features of a proportionate measure, that, if fulfilled, the relevant instrument is considered to be in accordance with EU law. To conclude, what remains to be seen is which would be the CJEU’s stance towards any future judicial conflict brought before it concerning ‘green’ monetary policy tools and their compliance, on the one hand, with the legal European framework and, on the other hand, with the defined limits of the ECB’s mandate. In any case, only the Court could make a landmark statement on the relationship between the ECB’s objectives and climate protection.

Lastly, it should be noted that “our actions now and over the coming decades could create risks of major disruption to economic and social activity, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century. And it will be difficult or impossible to reverse these changes”.398 Two things, though, could be stated with certainty: first, that the benefits of early action on climate change would far outweigh the costs of not acting, and second, that the future of our planet is largely dependent on the action that humanity takes today.

Bibliography


Bankenverband (2021), Green monetary policy – what instruments are most suitable?, Association of German Banks (2 August 2021), available at: https://bankenverband.de/media/positionspaper/2021-07-28_Position_Green_Monetary_Policy.pdf


Basel Committee on Banking Supervision (2016), Guidance on the application of the core
principles for effective banking supervision to the regulation and supervision of institutions relevant to financial inclusion, Bank for International Settlements

**Basel Committee on Banking Supervision (2021),** *Climate-related risk drivers and their transmission channels,* Bank for International Settlements

**Battiston, S. et al. (2016),** “The price of complexity in financial networks”, *PNAS,* 113 (36), 10031-10036


Bryant, Ch. (2010), *Twenty-Five Years of EU Environmental Law*, Natural Resources & Environment, 25(1)


Christianos, V. (2010), *Εισαγωγή στο Δίκαιο της Ευρωπαϊκής Ένωσης* [Introduction to EU law] (in Greek), Nomiki Vivliothiki.


Christianos, V. et al. (2011), *To Δίκαιο της Ευρωπαϊκής Ένωσης μέσα από τη νομολογία* [European Law through case-law] (in Greek), Sakkoulas Publications


Dellis, G. (2018), Δήμος και Αγορά: Το δημόσιο δίκαιο «αλλιώς», με το βλέμμα της οικονομικής...


Elderson, F. (2021a), *Integrating the climate and environmental challenge into the missions of central banks*:
banks and supervisors, Speech at the 8th Conference on the Banking Union, Goethe University, available at: https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210923~0c7bd9c596.en.html


ESRB (2016), Too late, too sudden: transition to a low-carbon economy and systemic risk, Reports of the Advisory Scientific Committee, No. 6

Euroactiv (2021), Beyond the strategy review: the ECB must act on climate, Euroactiv (22 July 2021), available at: https://www.euractiv.com/section/energy-environment/opinion/beyond-the-strategy-review-the-ecb-must-act-on-climate/, accessed on 27 September 2021


European Central Bank (2011a), The Monetary Policy of the ECB, European Central Bank, third


European Central Bank (2021b), ECB presents action plan to include climate change considerations in its monetary policy strategy, Press release (8 July 2021), available at: https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html


European Central Bank (2021g), 2021 update of the ECB’s Environmental Statement, available at the official ECB’s website:


European Commission (2020c), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Stepping up Europe’s 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people, COM(2020) 562, Brussels (17.9.2020)

European Commission (2020d), Communication from the Commission to the European Parliament,
the Council, the European Economic and Social Committee and the Committee of the Regions – A new Circular Economy Action Plan: For a cleaner and more competitive Europe, COM(2020) 98, Brussels (11.3.2020)


European Commission (2021a), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change, COM(2021) 82, Brussels (24.2.2021)


Gates, B. (2021), Πως να αποφύγουμε μια κλιματική καταστροφή: οι λύσεις που έχουμε και οι καινοτομίες που χρειαζόμαστε [How to avoid a climate disaster: available solutions and necessary innovations] (in Greek), Patakis Publications


Gortzos, Ch. (2014), Εισαγωγή στο Δίκαιο της Οικονομικής και Νομισματικής Ένωσης [Introduction to the Economic and Monetary Union Law] (in Greek), Nomiki Bibliothiki
Gortsos, Ch. (2015), *Last Resort Lending to Solvent Credit Institutions in the Euro Area Before and After the Establishment of the Single Supervisory Mechanism (SSM)*, in “From Monetary Union to Banking Union, on the way to Capital Markets Union”, ECB Legal Conference 2015, ECB, Frankfurt


Horwood, Cl. (2021), Next Generation EU issuance will boost euro’s reserve status, OMFIF (16 June 2021), available at: https://www.omfif.org/2021/06/next-generation-eu-issuance-will-boost-euro-reserve-status/


Ioannidis, M., Hlásková-Murphy, S.-J. and Zilioli, Ch. (2021), “The mandate of the ECB: Legal considerations in the ECB’s monetary policy strategy review”, Occasional Paper Series, No. 276, European Central Bank (September 2021), available at:
IPBES (2019), *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, IPBES secretariat, Bonn, Germany


Krämer, L. and Palaiologou, N. (1992), *Η συνθήκη ΕΟΚ και η προστασία των περιβάλλοντος* [The ECC Treaty and the protection of the environment] (in Greek), A. N. Sakkoula Publications


Moody’s Analytics (2021), ECB to Consider Climate Risks When Reviewing Collateral Framework, Regulatory News (17 September 2021), available at: https://www.moodysanalytics.com/regulatory-news/sep-17-21-ecb%20to%20consider%20climate%20risks%20when%20reviewing%20collateral%20framework


69


Network for Greening the Financial System (2020a), *NGFS Climate Scenarios for Central Banks and Supervisors*, Network of Central Banks and Supervisors for Greening the Financial System, Paris


70
to-agree-on-new-inflation-goal-of-2-allow-overshoot


Richards, A. (2021), “Central banks need to take action now on climate change”, Financial Times (21 April 2021), available at: https://www.ft.com/content/e5be5650-d880-48cd-b3f4-fddeb41480e


Sarmas, I. (2018), Η Δίκαιη ισορροπία: η νομολογία του Ευρωπαϊκού Δικαστηρίου Δικαιωμάτων του Ανθρώπου [The fair balance: the case-law of the European Court of Human Rights] (in Greek), Sakkoulas Publications – Centre for European Constitutional Law


Schwind, J. (2008), *Zukunftsgestaltende Element im deutschen und europäischen Staats- und


Solana, J. (2018), *The power of the Eurosystem to promote environmental protection*, University of Oslo, Faculty of Law, Legal Studies, Research Paper Series, No. 2018-23

Stadler, R. (1996), *Der rechtliche Handlungsspielraum des Europäischen Systems der Zentralbanken*, Baden-Baden, Nomos Verlag


Weidmann, J. (2020), Bundesbank chief: How central banks should address climate change, Financial Times (19 November 2020), available at: https://www.ft.com/content/ed270eb2-e5f9-4a2a-8987-41df4eb67418


Case Law

European Court of Justice


Judgement of the Court of First Instance (Second Chamber, extended composition) of 26 November 2002, Artegodan GmbH v. Commission of the European Communities, Joined Cases T-74/00, T-76/00, T-83/00, T-84/00, T-85/00, T-132/00, T-137/00 and T-141/00, ECLI:EU:T:2002:283

Judgement of the Court of 5 May 1998, The Queen v. Ministry of Agriculture Fisheries and Food, Commissioners of Customs & Excise, ex parte National Farmers' Union, David Burnett and Sons Ltd, R. S. and E. Wright Ltd, Anglo Beef Processors Ltd, United Kingdom Genetics, Wyjac Calves Ltd,
Judgement of the Court (Third Chamber) of 28 January 2010, European Commission v. French Republic, C-333/08, ECLI:EU:C:2010:44

Judgement of the Court (Fourth Chamber) of 5 October 1999, Criminal proceedings against Paolo Lirussi and Francesca Bizzaro, C-175/98 and C-177/98, ECLI:EU:C:1999:486

Judgement of the Court of 9 July 1992, Commission of the European Communities v. Kingdom of Belgium, C-2/90, ECLI:EU:C:1992:310


Judgement of the Court of 13 February 1979, Hoffmann-La Roche v Commission, Case 85/76, ECLI:EU:C:1979:36

Judgement of the Court (Fifth Chamber) of 21 March 1991, Siegfried Rauh v Hauptzollamt Nürnberg – Fürth, Case C-314/89, ECLI:EU:C:1991:143

Judgement of the Court (Grand Chamber) of 16 June 2015, Peter Gauweiler and Others v Deutscher Bundestag, C-62/14, ECLI:EU:C:2015:400

Judgement of the Court (Full Court) of 27 November 2012, Thomas Pringle v. Government of Ireland and Others, C-370/12, ECLI:EU:C:2012:756

Judgement of the Court (Grand Chamber) of 11 December 2018, Heinrich Weiss and Others, C-493/17, ECLI:EU:C:2018:1000


Judgement of the Court (Grand Chamber) of 21 December 2016, Anonimi Geniki Etairia Tsimenton Iraklis (AGET Iraklis) v. Ypourgos Ergasias, Koinonikis Asfalisis kai Koinonikis Allilegyis, C-201/15, ECLI:EU:C:2016:972

Judgement of the Court (Grand Chamber) of 16 July 2009, The Queen on the application of Mark Horvath v. Secretary of State for Environment, Food and Rural Affairs, C-428/07, ECLI:EU:C:2009:458

Judgement of the Court (Grand Chamber) of 23 October 2007, Commission of the European Communities v. Council of the European Union, C-440/05, ECLI:EU:C:2007:625

Judgement of the Court (Grand Chamber) of 15 November 2005, Commission of the European Communities v. Republic of Austria, C-320/03, ECLI:EU:C:2005:684

Judgement of the Court of First Instance (Second Chamber, Extended Composition) of 26 November 2002, *Trenker v. Commission*, T-141/00 (Joined Cases T-74/00, T-76/00, T-83/00, T-84/00, T-85/00, T-132/00, T-137/00, T-141/00), EU:T:2002:283

Judgement of the Court (Fifth Chamber) of 13 November 1990, *The Queen v. Minister of Agriculture, Fisheries and Food and Secretary of State for Health, ex parte: Fedesa and others*, ECLI:EU:C:1990:391

Judgement of the Court (Sixth Chamber) of 16 December 1999, *Union Deutsche Lebensmittelewerke GmbH v. Schutzverband gegen Unwesen in der Wirtschaft eV.*, ECLI:EU:C:1999:615

Judgment of the Court of 12 March 2002, *The Queen v. Secretary of State for the Environment, Transport and the Regions, ex parte Omega Air Ltd (C-27/00) and Omega Air Ltd, Aero Engines Ireland Ltd and Omega Aviation Services Ltd v. Irish Aviation Authority (C-122/00)*, ECLI:EU:C:2002:161


Judgement of the Court of 10 December 2002, *The Queen v Secretary of State for Health, ex parte British American Tobacco (Investments) Ltd and Imperial Tobacco Ltd*, Case C-491/01, ECLI:EU:C:2002:741

Judgement of the Court (Fourth Chamber) of 8 July 2010, *Afton Chemical Limited v. Secretary of State for Transport*, C-343/09, ECLI:EU:C:2010:419

Judgement of the Court (Second Chamber) of 17 October 2013, *Billerud Karlsborg AB and Billerud Skärblacka AB v. Naturvårdsverket*, C-203/12, ECLI:EU:C:2013:664

Judgment of the Court (Fourth Chamber) of 8 July 2010, *Afton Chemical Limited v. Secretary of State for Transport*, C-343/09, ECLI:EU:C:2010:419

Judgment of the Court (Grand Chamber) of 15 February 2005, *Commission of the European Communities v. Tetra Laval BV*, Case C-12/03, ECLI:EU:C:2005:87

**Opinions**


Opinion of AG Bot delivered on 8 May 2013 (ECLI:EU:C:2013:294), Judgement of the Court (Fourth Chamber) of 11 September 2014, *Essent Belgium NV v. Vlaamse Reguleringsinstantie voor de Elektriciteits Gasmarkt*, Joined Cases C-204/12 to C-208/12, ECLI:EU:C:2014:2192


Opinion of AG Villalón delivered on 14 January 2015 (ECLI:EU:C:2015:7), Judgement of the Court (Grand Chamber) of 16 June 2015, Peter Gauweiler and Others v Deutscher Bundestag, C-62/14, ECLI:EU:C:2015:400

Opinion of AG Kokott delivered on 18 November 2003 (ECLI:EU:C:2003:619), Judgement of the Court (Second Chamber) of 9 September 2004, Kingdom of Spain v. Commission of the European Communities, C-304/01, ECLI:EU:C:2004:495

**Other courts**

Brussels Court of First Instance, VZW Klimaatzaak v. Kingdom of Belgium & Others, Order of 17 June 2021

BVerfG, Judgment of the Second Senate of 5 May 2020, 2 BvR 859/15

BVerfG, Judgement of the Second Senate of 21 June 2016, 2 BvR 2728/13, 2 BvR 2729/13, 2 BvR 2730/13, 2 BvR 2731/13, 2 BvE 13/13

BVerfG, Order of the First Senate of 24 March 2021, 1 BvR 2656/18, 1 BvR 78/20, 1 BvR 96/20, 1 BvR 288/20

Conseil d’ État (Assemblée), 28.05.1971, Ministre de l’équipement et du logement c. Fédération de défense des personnes concernées par le projet actuellement dénommé “Ville nouvelle Est”, No. 78825

Conseil d’ État (Assemblée), 28.03.1997, Association contre le projet de l’autoroute transchablaisienne et autres, No. 170856


Supreme Court of the Netherlands, State of the Netherlands v. Urgenda, No. 19/00135, Order of 20 December 2019
ΔΗΛΩΣΗ ΠΕΡΙ ΜΗ ΠΡΟΣΒΟΛΗΣ ΔΙΚΑΙΩΜΑΤΩΝ ΠΝΕΥΜΑΤΙΚΗΣ ΙΔΙΟΚΤΗΣΙΑΣ

Δηλώνω υπεύθυνα ότι η διπλωματική εργασία, την οποία υποβάλλω, δεν περιλαμβάνει στοιχεία προσβολής δικαιωμάτων πνευματικής ιδιοκτησίας σύμφωνα με τους ακόλουθους όρους τους οποίους διάβασα και αποδέχομαι:

1. Η διπλωματική εργασία πρέπει να αποτελεί έργο του υποβάλλοντος αυτήν υποψήφιου διπλωματούχου.

2. Η αντιγραφή ή η παράφραση έργου τρίτου αποτελεί προσβολή δικαιώματος πνευματικής ιδιοκτησίας και συνιστά σοβαρό αδίκημα, εισηγήσεις ή επιστημονικοί άρθροι. Το υλικό που συνιστά αυτό, αντικείται συνιστά σοβαρό αδίκημα, εισηγήσεις ή επιστημονικοί άρθροι. Το υλικό που συνιστά αυτό, παράγεται από έργο που αναφέρεται την επιβολή κυρώσεων. Για την επιβολή των ακολουθων, το αρμόδιο άρθρο της Επιτροπής Ανακοινώνει το δικαίωμα της επιβολής κυρώσεων σε έργο που αναφέρεται την επιβολή κυρώσεων.

3. Η χρήση αποσπασμάτων από το έργο τρίτων είναι αποδεκτή εφόσον, αναφέρεται η πηγή του σχετικού αποσπασμάτου. Σε περίπτωση χρήσης αποσπασμάτων από το έργο άλλων, η χρήση εισαγωγικών ή σχετικής υποσημείωσης είναι απαραίτητη, ώστε η πηγή του αποσπάσματος να αναγνωρίζεται.

4. Η παράφραση κειμένου, αποτελεί προσβολή δικαιώματος πνευματικής ιδιοκτησίας.

5. Οι πηγές των αποσπασμάτων που χρησιμοποιούνται θα πρέπει να καταγράφονται πλήρως σε πίνακα βιβλιογραφίας στο τέλος της διπλωματικής εργασίας.

6. Η παράφραση κειμενου, αποτελεί προσβολή δικαιώματος πνευματικής ιδιοκτησίας. Για την επιβολή των ακολουθων, το αρμόδιο άρθρο της Επιτροπής Ανακοινώνει το δικαίωμα της επιβολής κυρώσεων σε έργο που αναφέρεται την επιβολή κυρώσεων.

Επιπλέον, παρέχω τη συναίνεσή μου, ώστε υλοτομή να υποβληθεί σε ηλεκτρονικό έλεγχο για την επιβολή κυρώσεων.

Ημερομηνία Υπογραφή Υποψηφίου
14.11.2021

[Σημειωματάριο έγγραφου]