APPLICATION OF RULES OR POLICIES IN THE ECB? LEGAL AND INSTITUTIONAL CHALLENGES IMPACTING THE CLIMATE TRANSITION

NUNO ALBUQUERQUE MATOS[1]
nunoalbuquerquematos@gmail.com

Cómo citar/Citation
Albuquerque Matos, N. (2023).
Application of rules or policies in the ECB? Legal and
institutional challenges impacting the climate transition.
Revista de Derecho Comunitario Europeo, 76, 157-184.
doi: https://doi.org/10.18042/cepc/rdce.76.05

Abstract

The paper argues that the ECB is far less an independent institution as Treaty provisions portray. This is due to the lack of institutional alternatives at the EU level to effectively and rapidly deal with complex situations make it the only credible solution, even if very imperfect. This state of affairs does not allow a comparative institutional analysis to be conducted, which is crucial to good public policy decisions. Significantly, the ECB has experienced two different periods: a frictionless and a complex one. The latter has been characterized by increasing monetary policy alignment with the European Council's political decisions, having materialized in intervention in Member States' bond markets during the financial and covid-19 crises. The overreliance on the ECB has recently been consolidated, as it decided to address the issue of climate change from a monetary standpoint in order to speed up the climate transition. However, this trend may not be consistent with its primary mandate of maintaining price stability and, in different ways, may hinder its independence.

Keywords

Monetary policy; European Central Bank; climate transition; Central Bank independence; price stability.

---

1 PhD Candidate, Católica Research Centre for the Future of Law, Universidade Católica Portuguesa, Lisbon. PhD visitor European University Institute, Florence. Vice-Chair CES Law Research Network of the Council for European Studies at Columbia University.

¿APLICACIÓN DE REGLAS O POLÍTICAS EN EL BCE? DESAFÍOS LEGALES E INSTITUCIONALES CON IMPACTO EN LA TRANSICIÓN CLIMÁTICA

Resumen

El estudio argumenta que el BCE es mucho menos independiente de como lo describen las disposiciones jurídicas del Tratado. Esto se debe a la falta de alternativas institucionales a nivel de la UE para hacer frente a situaciones complejas con eficacia y rapidez. Así, el BCE se convirtió en la única solución creíble, aunque muy imperfecta, lo que no permite realizar un análisis institucional comparado, crucial para las buenas decisiones de política pública. Significativamente, el BCE ha experimentado dos períodos diferentes: uno mas sencillo y otro complejo. Este último se ha caracterizado por un mayor alineamiento de la política monetaria con las decisiones políticas del Consejo Europeo, habiéndose materializado en la intervención en los mercados de bonos de los Estados miembros durante las crisis financiera y de la COVID-19. Recientemente se ha consolidado la excesiva confianza en el BCE, que decidió abordar el tema del cambio climático desde un punto de vista monetario para acelerar la transición climática. Sin embargo, esta tendencia puede no ser consistente con su mandato principal de mantener la estabilidad de precios y, de diferentes maneras, puede obstaculizar su independencia.

Palabras clave

Política monetaria; Banco Central Europeo; transición climática; independencia del Banco Central; estabilidad de precios.

APPLICATION DES RÈGLES OU DES POLITIQUES À LA BCE? DÉFIS JURIDIQUES ET INSTITUTIONNELS IMPACTANT LA TRANSITION CLIMATIQUE

Résumé

L'article soutient que la BCE est bien moins une institution indépendante que les dispositions du traité le décrivent. Cela est dû au manque d'alternatives institutionnelles au niveau de l'UE pour traiter des situations complexes efficace et rapidement, et en font la seule solution crédible, même si très imparfaite. Cet état de choses ne permet pas de mener une analyse institutionnelle comparative, indispensable aux bonnes décisions de politique publique. De manière significative, la BCE a connu deux périodes différentes: une sans friction et une autre complexe. Cette dernière s'est caractérisée par un alignement croissant de la politique monétaire sur les décisions politiques du Conseil Européen, qui s'est concrétisé par des interventions sur les marchés obligataires des États Membres pendant les crises financières et du covid-19. La dépendance excessive à l'égard de la BCE s'est récemment consolidée, puisqu'elle a décidé d'aborder la question du changement climatique d'un point de vue monétaire afin d'accélérer la transition climatique. Cependant, cette tendance peut ne pas être compatible avec son mandat principal de maintien de la stabilité des prix et, de différentes manières, peut entraver son indépendance.

Mots clés

Politique monétaire; Banque Centrale Européenne; transition climatique; indépendance de la Banque Centrale; stabilité des prix.

CONTENTS

I. INTRODUCTION

In the Economic and Monetary Union (EMU), there are two distinct phases contextualizing the European Central Bank (ECB) policy-making: a simple and complex period, respectively prior and as from the 2008 financial crisis.

Before the crisis erupted, the ECB navigated a situation of relative financial stability and confidence in the euro currency, fulfilling its price stability mandate in a relatively straightforward manner. However, the financial crisis changed the situation, prompting the central bank to increasingly intervene in the markets, particularly by purchasing Member States' bonds. The same occurred to counter economic and financial effects deriving from the covid-19 pandemic. Interestingly, it did so always after the political decisions had been taken in the European Council, which is the prime EU institution that not only defines broad EU economic policy but actually steers it (Van Middelaar and Puetter, 2022; Puetter, 2014).

Fiscal and monetary policies should act in tandem on certain occasions. However, the magnitude of the ECB's interventions and, mainly, its nature, exposed the institutional weakness of EMU by revealing their Member States' dependence on the ECB. Due to lack of institutional alternatives at the EU level, monetary policy actions were taken out of technical suitability as much as out of political necessity.

Arguably, the way in which the ECB intends to address climate change further confirms this hypothesis. Significantly, the financial and covid-19 crises occurred suddenly and required immediate responses as a consequence, such as provision of short-term liquidity. Therefore, averting imminent financial collapse offers some justification for central bank intervention. On the contrary, tackling climate change is not a new issue and requires long-term investments in a wide array of areas. By taking action, especially only after a political decision was reached by the European Council, the ECB is pushing the limits of the EU legal framework regarding its compatibility with price stability and central bank independence. This is especially the case if we take into consideration the restraint showed by the US Federal Reserve and the Bank of England. This comparison is of added value not only because they are two of the most prominent central banks, but also because the US Federal Reserve represents a federation whose economic development and political system most resembles the EU's. Moreover, the Federal Reserve Act influenced the final outcome of the ESCB legal framework (Lastra, 1992: 475).

Therefore, the question this paper addresses is, how the alignment with other EU institutions' political priorities hinders the consistency of ECB monetary response to tackle climate change with EU law. In part two, I will focus on the implementation of monetary policy in the frictionless and the complex periods in order to show the institutional alignment, whereby the ECB follows the European Council's lead. Then, in part three, by focusing on ECB's action on climate change, I will show how such an alignment impairs the ECB's mandate to achieve price stability and hinders its independence. Lastly, I will briefly focus on the US Federal Reserve and Bank of England's action on climate change, in order to provide contrast with its European counterpart.

II. ECONOMIC AND MONETARY UNION'S EVOLVING CONTEXT

1. ADHERENCE TO RULES IN THE FRICTIONLESS PERIOD

Articles 119 (2) and 127 (1) TFEU lay out the primary objective of the European System of Central Banks (ESCB). The former states that among the activities of the Member States and the Union shall include a single currency and the definition and conduct of a single monetary policy and exchange-rate policy the primary objective of both of which shall be to maintain price stability and, without prejudice to this objective, to support the general economic policies in the Union. Moreover, article 127 (1) TFEU provides that the primary objective of the European System of Central Banks is to maintain price stability. Insofar as this objective is not prejudiced, it may support other general economic policies of the Union.

Hence, the primary objective of the ESCB is to ensure price stability[2] in the Union. Without prejudice to such objective, monetary policy can act in a *supporting* role to the general economic policies *in* the Union, insofar as it contributes to achieve article 3 TEU objectives, which are many-fold, namely "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".

Apart from the positive obligation to pursue price stability, the ESCB's mandate also encompasses an obligation to refrain influencing national fiscal policies by way of easing funding of national debt. Indeed, article 123 (1) TFEU prescribes the following:

Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (…) in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments.

This principle of prohibition of monetary financing is important because it is the mirror of the no bailout clause foreseen in article 125 (1) TFEU. Both aim to provide each Member State with a set of incentives that make adherence to fiscal responsibility more likely. This is indeed crucial, since perceptions on the no bailout credibility are key. If nobody believes in its effectiveness, no incentives will be in place either for public authorities to make (fiscal) adjustments or for markets to rigorously distinguish between the creditworthiness of the various national governments (Rodden, 2012: 123; Matos, 2022).

On the contrary, if the supranational government (or institutions) is credible, then there will be strong incentives for national authorities to keep their public finance indicators under control and for market actors to monitor their creditworthiness because default is a real possibility. The point to make here is that stakeholders must take decisions based on a degree of uncertainty and, to that end, the way monetary policy is implemented is indeed crucial.

Importantly, in the first decade of the ECB's existence monetary action was guided by a clear preference for price stability over other targets and, notably, independent of national fiscal policies[3]. This conduct was also

[2] The concept of price stability has evolved over time. See European Central Bank, 1998, European Central Bank, 2003; European Central Bank, 2021b.

[3] The notion that society can be better off by having a central banker who does not share the "social objective function" and, instead, places a larger weight on infla-

important for the ECB to build trust and credibility vis-à-vis the markets and Member States (particularly Germany) in that it was fully committed to delivering on its mandate and ensure stable prices (Estella, 2018: 85).

This period was also characterised by less friction and complexity. Indeed, no major crisis (financial or otherwise) occurred and no major fiscal problems were reported by Member States. As Komesar teaches (Komesar, 1997), in such settings, institutions typically deliver better results, as they are not strained by adverse contexts. Moreover, these situations are also featured by low stakes, whereby there is little incentive for participation. For the general public, demanding a certain monetary policy change could bring about relatively small and diffuse benefits while simultaneously entailing relatively high costs (such policy is complex and, as a result, was seen as a matter for experts). Regarding national central banks within the Governing Council, demanding flexibility at such an early stage and within a stable financial situation could hinder the ECB's credibility while heeding few benefits. This helps explain the prominence of a tighter monetary policy, more in line with the preference of a few Member States.

2. ADHERENCE TO POLICIES IN THE COMPLEX PERIOD

The described situation changes, however, when complexity rises. When reality gets trickier and more intricate, institutions tend to get more strained and less able to deliver quality results. In contrast to what was just referred above, a complex situation typically raises stakes, meaning that more people (or States) will benefit (or bear a cost) from certain public policy choices.

Unfortunately, this may have been the case for the EU and the eurozone. Since 2008 that a more complex situation has unfolded, leading the ECB to a significant change in its monetary policy decisions, much aligned with Member States' decisions in the European Council to safeguard the financial stability of the eurozone as a whole[4] and to address the COVID-19 pandemic[5].

2.1. Financial crisis

As is well known, the financial crisis was sourced in the United States, following the bankruptcy of *Lehman Brothers*. One of the main features of this

tion-rate stabilization relative to employment stabilization, is defended by Rogoff, 1985: 1169.

4 European Council, 2010. See also Lionello, 2020.

5 European Council, 2020.

crisis was the disconnect between the interest rate on the credit granted for housing purchasing purposes and household indebtedness capacity. All these credits were aggregated, securitised and sold worldwide by special purpose vehicles. The impact on the European banking sector was felt soon after, prompting liquidity and solvency crises (Calvão da Silva, 2013: 16).

With the goal of increasing inter-banking loans, Member States jointly approved a banking sector recapitalisation and state guarantee plan — a framework establishing common principles but to be implemented individually by each government[6]. As a consequence of putting this plan into action, public debt levels soared, placing many Member States on an unsustainable public debt and deficit path. Consequently, rating agencies severely downgraded a number of sovereign debt ratings, prompting the ECB to step in (De Grauwe, 2018: 182).

In a statement on 11 February 2010, Heads of State or Government of the EU acknowledged to hold "a shared responsibility for the economic and financial stability in the area. (…) Euro area Member states will take determined and coordinated action, if needed, to safeguard financial stability in the euro area as a whole" (European Council, 2010).

This was the moment where the ECB started to gradually transform, by adopting unconventional monetary policy measures (Dawson and Bobic, 2019: 1005; Van der Sluis, 2019: 263). First, in 2010, the ECB announced the Securities Market Programme (SMP). Although limited in scope (Ioannidis, 2016: 1237) its objective was "to address the malfunctioning of securities markets and restore an appropriate monetary policy transmission mechanism" (Decision of European Central Bank, 2010: recital 3), conditioned on Member States' fiscal frugality.

Further, in 2012 SMP was replaced by Outright Monetary Transactions (OMT), whose objective was to restore an appropriate monetary policy transmission and to safeguard the singleness of monetary policy. Therefore, the ECB framed the programme within article 127 (2) TFEU and article 3 of ECB Statute, as necessary to define and implement the monetary policy of the Union. Of its several features, I would highlight two. First, the ECB can purchase government-issued bonds maturing in one to three years, provided that the government requests financial assistance under the European Financial Stability Fund and European Stability Mechanism — the conditionality principle (Megliani, 2020: 674). Most importantly, conditions must not only be agreed but also effectively implemented to enable eligibility. Second, in

[6] This plan could go up 1.3 trillion euros, well above the US plan, put forward by Treasury secretary Henry Paulson, which could go up to 700 billion dollars.

contrast with SMP, there are no *ex ante* quantitative limits on the size of transactions (European Central Bank, 2012; Falagiarda and Reitz, 2015: 280; Adamski, 2015: 1451).

Lastly, the Public Sector Purchase Programme (PSPP) was adopted in 2015. Contrary to OMT, this programme involved large-scale bond purchases in the secondary market, in particular those issued by national governments, with the aim of increasing inflation. Framing the Decision within the purview of its mandate, the ECB justified it as necessary and adequate. It was necessary for contextual reasons. The central bank argued that interest rates were at their lower bound and purchase programmes focusing on private sector assets were considered to be insufficient and needed to be revamped. It was adequate, given that its portfolio re-balancing effect and the sizable purchase volume of PSPP would further ease monetary and financial conditions (Decision of the European Central Bank, 2015: L/121/20).

2.2. COVID-19 pandemic

On a similar vein, the European Council held a video conference on 10 March 2020. Among its conclusions, the Heads of State or Government of the EU held that, tackling socio-economic consequences would require the Union and its Member States to use all instruments that are necessary. In particular, we will address any impact on liquidity, on support for SME's and specific affected sectors, and their employees. Flexible application of EU rules in particular as regard State aid and Stability and Growth Pact will be needed (European Council, 2020).

On 18 March 2020, the ECB announced the Pandemic Emergency Purchase Programme (PEPP). According to the Governing Council, this programme would be a "new temporary asset purchase programme of private and public sector securities to counter the serious risks to the monetary policy transmission mechanism and the outlook for the euro area posed by the outbreak and escalating diffusion of the coronavirus, COVID-19" (European Central Bank, 2020). It would allow the purchase of private and public sector securities in amounts of up to €750 billion, including a waiver of the eligibility requirements for securities issued by the Greek Government.

Similar to other programmes, the aim of PEPP was to protect the monetary policy transmission mechanism as well as to counter the serious risks to the outlook of the euro area. The cause, however, was different. While other programmes, such as OMT, were inspired by the prospect of eurozone disintegration and focused on a few Member States experiencing financial distress, the latter was meant to address a much wider, overreaching and horizontal situation. As President Lagarde announced, "the shock the Eurozone now faces is exogenous and affects all Eurozone Member States" (European Central Bank, 2020).

There are also resemblances with PSPP, such as the use of the ECB capital key to purchase allocation, which revealed to be a problem. With the benefit of hindsight, Member States were not equally affected by the pandemic. This is demonstrated, for instance, by the way Next Generation EU was devised, allocating more funds to the most affected States.

However, in contrast to OMT, PEPP is not a selective instrument that allows the ECB to focus on a specific Member State. Ultimately, there must also be purchases of other Member State bonds (Van der Sluis, 2020).

Flexibility would be the hallmark of the programme. Whereas the benchmark allocation across jurisdictions continued to be the capital key of the national central banks, the buying operations was expected to see fluctuations over time, across asset classes and among jurisdictions. Resembling Draghi's statement on 26 July 2012, Lagarde stated that the "Governing Council will do everything necessary within its mandate" (European Central Bank, 2020).

The programme was subsequently reinforced, first by €600 billion on 4 June 2020, and by €500 billion on 10 December 2020, to a total €1,850 trillion. On 16 December 2021 the Governing Council decided to discontinue net asset purchases under the PEPP at the end of March 2022. The maturing principal payments from securities purchased under the PEPP will be reinvested until at least the end of 2024.

2.3. Conclusion

From the foregoing it can be concluded that the ECB has changed its monetary policy actions overtime. During a less complex period, it was capable of delivering a policy commensurate with the rules underpinning its mandate. However, as complexity increased, its task became increasingly more difficult.

In fact, this section has shown the ECB's actions are increasingly aligned with the European Council's decisions and Member States individual needs. Notably, it started intervening in Member States' secondary bond markets, therefore increasing their dependency on the central bank to generate demand and becoming almost umbilically interconnected[7].

7 Since the PSPP was set up until 2021, central banks have significantly expanded their portfolio of Member States' public debt (for instance, from 19 % to 36 % of Portuguese debt; from 4 % to 28 % of Spanish debt; from 3 % to 16 % of Italian debt; from

The blurring of the principle of prohibition of monetary financing may not only hinder but principle of price stability (Friedman, 1968) but also, most importantly, the principle of central bank independence (Lastra, 1992: 33; Kämmerer, 2022: 158). This latter principle is at the core of central banking credibility and was of essence during the negotiations that led to the creation of the ECB (Louis, 2020: 797). One of the effects brought about by independence (or autonomy)[8] is that markets get more assurances that decisions broadly reflect technical expertise, which fosters investors' foreseeability, confidence and, thus, stability and growth. Without it, however, an element of unpredictability is introduced, which hinders foreseeability and potentially affects capital allocation.[9]

The next section will focus on how the ECB is addressing climate change and assess whether the same pattern exists and what may the potential legal consequences be.

III. ADDRESSING CLIMATE CHANGE WITH MONETARY POLICY IN THE EUROPEAN UNION

1. FACTUAL EVOLUTION

Similarly to the developments described above, in March 2019 the European Council's conclusions reiterated the Union's commitment to the Paris Agreement and recognised the need to increase global efforts to tackle climate change (European Council, 2019a: 5).

Moreover, in June 2019, EU Heads of State or Government emphasised the importance of the United Nations Secretary General's Climate Action Summit, due in September 2019, for bolstering global climate action and invited "the Council and the Commission to advance work on the conditions, the incentives and the enabling framework to be put in place so as to ensure a transition to a climate-neutral EU (…)" (European Council, 2019b: 4).

5 % to 20 % of French debt and from 4 % to 26 % of German debt). See: https://tinyurl.com/48kpsxpe.

8 Fabian Amtenbrink consider that the term "autonomy" better depicts the position of the central bank in the Union legal order, as the institution fulfils its monetary policy mandate significantly insulated from outside influence. See Amtenbrink, 2019: 935.

9 However, the consensus over the added value of central bank independence is waning over time, especially during periods of low inflation expectations, as explained by Summers. See Summers (2017).

However, it was only in December 2019 that a definite endorsement was agreed. Indeed, EU leaders concluded that "[i]n the light of the latest available science and of the need to step up global climate action, the European Council endorses the objective of achieving a climate-neutral EU by 2050, in line with the objectives of the Paris Agreement" (European Council, 2019c: 1). In addition, the European Council "recognises the need to put in place an enabling framework that benefits all Member States and encompasses adequate instruments, incentives, support and investments to ensure a cost-effective, just, as well as socially balanced and fair transition" (European Council, 2019c: 3). Moreover, the European Commission published an encompassing communication on the European green deal (European Commission, 2019), a precursor of the Regulation (EU) 2021/1119 (European Climate Law) which establishes, in article 2 (2), that the "relevant Union institutions and the Member States shall take the necessary measures at Union and national level, respectively, to enable the collective achievement of the climate-neutrality objective"[10].

Shortly after, in January 2020, the ECB started conducting a strategic review on how to conduct its monetary policy. Pursuant to such exercise, it concluded that, within its mandate, the Governing Council will ensure that the Eurosystem takes into account the implications of climate change and the carbon transition in the monetary policy realm. Moreover, the ECB considers addressing climate change and the carbon transition to be a major global challenge and a policy priority for the EU (European Central Bank, 2021c: 13)[11], having committed to an ambitious climate-related action plan (European Central Bank, 2021a).

Hence, there is an increasing alignment with political priorities of Member States also regarding climate change. This development places legal problems which deem the ECB as a flawed institutional choice for the climate transition as it hinders important EU law provisions and principles.

[10] Next Generation EU is the ultimate expression of a horizontal approach to an encompassing climate transition. In fact, according to article 18 (4) (e) of Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 establishing the Recovery and Resilience Facility, more than 35 % of the funds must be allocated to projects which contribute to the green transition, including biodiversity, or to addressing the challenges resulting therefrom. See, for instance, Olesti Rayo (2022); Nettesheim (2021); Fabbrini (2022: 48).

[11] Climate-related issues also bear an impact on supervised entities, as banking supervision carried out supervisory climate stress tests to "check banks" preparedness to deal with climate risks. See European Central Bank, 2022.

2. CONSISTENCY WITH EU LAW

2.1. Problem of compatibility with price stability

Article 127 (1) TFEU provides that monetary policy is oriented by primacy of price stability, which means that it must be the overriding concern of the ECB. According to Zilioli and Ioannidis, the environment may, at first glance, have little to do with price stability (Zilioli and Ioannidis, 2022: 367). However, as noted in *Gauweiler*[12] (among many others, Goldmann, 2014: 265; Kumm, 2014: 203; Fabbrini, 2015: 1003; Borger, 2016: 139) and *Weiss*[13] (see Lang, 2018: 923; Van der Sluis, 2019: 263; Dawson and Bobic, 2019: 1005) the CJEU accepts other considerations to be taken into account in order to carry out its primary objective, such as an adequate transmission of monetary policy.

While I will not deal with the appropriateness of such a concept here, suffice to say that actions intended to preserve the transmission mechanism are covered by article 127 (1) TFEU and, therefore, fall within the mandate of the ECB. In fact, the Court considered that the objectives of a measure, as well as the instruments used to implement it, are pivotal in order to establish its nature and, as such, to determine whether it falls under monetary or economic policy. Accordingly, the Court considered OMT as falling within the remit of monetary policy for a number of reasons. First, the objective of safeguarding the singleness of monetary policy does not exceed the mandate, given that it must be single. Second, the objective of preserving the appropriate transmission of monetary policy is not only likely to achieve the referred singleness but also to maintain price stability. According to the Court, the reason for this is that the mechanisms used for effective transmission are essential in price developments. Hence, disrupting these mechanisms necessarily affect the ability to guarantee price stability. And while monetary policy decisions might also spill over to economic policy matters (such as to contribute to the stability of the Euro area) that circumstance does not change its inherent nature.

A similar judicial reasoning may occur regarding climate change. According to Isabel Schnabel, there are several inflation risks. First, the inherent costs associated to climate change (climateflation). As natural disasters and extreme weather events becomes more frequent, the greater the

---

[12] Judgement of the Court of 16 June 2015, *Gauweiler and Others,* C-62/14, EU:C:2015:400.

[13] Judgement of the Court of 11 December 2018, *Weiss and others,* C-493/17, EU:C:2018:1000.

impact on economic activity and prices. Moreover, energy prices, such as oil and gas, have been increasing ever since the COVID-19 pandemic started to subside, in the summer of 2021, and have skyrocketed with the Russian invasion of Ukraine (fossilflation) which has a significant impact on the price of several goods. Third, conducting the green transition requires investments in technological process in the company world. However, especially in the transition period, these investments require a massive amount of metals and minerals. If excessive demand was not already enough to increase prices, supply chain disruptions further deepen the problem (greenflation) (European Central Bank, 2022; see also Calliess and Tuncel, 2023: 800).

Governments retain primary responsibility for addressing climate change, notably through fiscal policy. Notwithstanding, the ECB's mandate requires it to assess the impact of climate change and to further incorporate climate considerations into its policy framework, especially given that physical and transition risks related to climate change have implications for both price and financial stability, and affect the value and the risk profile of the assets held on the Eurosystem's balance sheet.

Among other measures[14], corporate sector bond purchases (CSPP) are considered an important instrument, given that they allow a lower cost of capital. However, re-allocate capital to climate-friendly companies is one of the ECB's most contentious responses. Some in the doctrine argue in favour of such an approach, "given that inflationary pressures might arise from a decline in the supply of goods or from productivity shocks caused by weather-related events such as droughts, floods, storms and sea level rises" (Batten, 2018: 1).

Importantly, however, the amount of investment necessary to perform the climate transition is already very significant, and it will continue to be[15]. One of the problems is that the scale of these investments may disrupt supply-demand equilibrium and create inflation. According to McKinsey:

> If supply of key materials or low-emissions sources of energy does not keep up with demand, this could result in shortages and price increases, which we have not considered in our quantification. Higher-order effects could magnify risks and

[14] Which include internalisation and higher disclosure of environmental risks, for instance by introducing rules on defaults or to increase information requirements regarding collateral eligibility. See Zilioli and Ioannidis, 2022.

[15] McKinsey estimates that the transformation of the global economy needed to achieve net-zero emissions by 2050 would be universal and significant, requiring 9.2 trillion dollars in annual average spending on physical assets, 3.5 trillion dollars more than today. See McKinsey (2022).

> increase costs, particularly in the short term. For example, depending on how the transition is financed, the effects on the overall economy could be substantially higher than sized here. Finally, effects could also be larger under an abrupt or delayed transition. (2022: 3)

In this context, it is important to note that, especially with PSPP and PEPP, monetary policy has been very flexible over several years, trebling the ECB's balance sheet in the 2015-2021 period, from €2.780 trillion to €8.564 trillion.[16] Although, half to two-thirds of inflation may be explained by non-demand components (supply and non-discernible causes) in the Eurozone during the 2017-2022 period (Gonçalves and Koester, 2022: 73),[17] increasing to availability of money, via monetary policy, could make for a grimmer outlook for inflation. Especially if we take into account the already large demand of a fiscal nature and a limited amount of goods and services able to deliver so-called "green" products.

Another obligation flowing from article 127 (1) TFEU is that ECB's action must be conducted in a way that favors an efficient allocation of resources. Importantly, such efficiency is dependent on market neutrality by public authorities. Disregarding such principle necessarily affects asset allocation, as the market incorporates public intervention in its decisions on investment.

Crucially, to increase the ECB's balance sheet would necessarily introduce an element of discrimination on firms' bond purchasing and, hence, breach the principle of market neutrality. As Steinbach observes, market neutrality means that the ECB purchases securities without taking the nature of the issuer's activities into account, in particular their sustainability. As a result, the CSPP portfolio contains a significant share of carbon-intensive sectors, which would have to be re-balanced, by conducting a reassessment of the asset purchasing programmes allocation, potentially excluding certain bonds that conflict with EU decarbonization objectives (Steinbach, 2022: 333; Jourdan and Kalinowski, 2019: 23; differently, arguing that market neutrality does not constitute a legally relevant limitation, see Calliess and Tuncel, 2023: 817-818).

In the same vein, it is not the task of the ECB to pick winners and losers, given that market neutrality is a powerful tool to pursue price stability while simultaneously preventing market distortions through biased interventions. Indeed, monetary policy should not be tailored to correct market distortions and political actions or omissions (Weidemann, 2020; Christie, 2021).

---

16 An interactive version of the ECB's balance sheet is available at: https://tinyurl.com/36sab4yv.

17 The figures are similar in the United States. For an overview, see Shapiro (2022).

Not only will climate transition take quite some time to conduct but also, and most importantly, EU policies do not envision a fully-fledged green economy, one where the whole economy would function with green standards. On the contrary, the net-zero policies currently in place only imply that human activity is reduced or changed so that greenhouse emissions produced can be totally absorbed by the planet (European Commission, 2021: 10). In this context, only the former course of action would adequately address the issue of neutrality. However, since for the foreseeable future such a prospect is not yet realistic, the policies are enacted on the assumption that greenhouse gases will continue to be emitted to the atmosphere and, likely enough, in a very heterogeneous way across sectors and companies. As a result, tailoring monetary policy to favour sectors that are less carbon-intensive effectively excludes many sectors of the economy, potentially on a permanent basis.

In conclusion, price stability is better preserved by following the principle of market neutrality. Hereby lies the ECB's green paradox: in an effort to rush the transition, one may actually be delaying it. In fact, if inflation deviates too much from target, then the ECB would be obliged to comply with its primary objective and scale back its intervention.

2.2. Problem of compatibility with central bank independence

Let us assume that climate policy would be in line with price stability. In this situation, the mandate of the ECB can be broader, as the second part of article 127 (1) TFEU states that 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 (3) of the Treaty on European Union", such as a high level of protection and improvement of the quality of the environment.

Therefore, the ECB can take on other objectives of the Union concomitantly, although to the extent that they do not place price stability in jeopardy. At the outset, one has to question which economic policies are eligible supported by monetary policy? A literal reading of the article, when reference is made to economic policies *in* the Union, allows a broad interpretation, as to encompass both Union and Member States enacted policies. However, it may do so in a supporting role only. This secondary role makes sense, given that the mentioned objectives "are so broad that an attempt by the ECB to concretize them and support them would de facto require assessments that would amount to autonomous policymaking" (Zilioli and Ioannidis, 2022: 370). In addition, in respect of the principle of institutional balance, stipulated by article 13 (2) TEU, policymaking is within the realm of political institutions, which does not encompass the ECB.

So why did the ECB only incorporate environmental concerns in its monetary policy concerns and did not do the same with the other general economic policies? Every secondary goal stipulate in the Treaties is embodied with the same legal value and, consequently, no hierarchy is established. Thus, in principle, each of those secondary policies should be supported on equals terms. While the ECB cannot put the different set of economic policies into practice, Member States have, for instance, comprehensive social policies as well as, together with the Union, scientific and technological policies. However, none of these seem to be specifically targeted by monetary policy, which raises questions not only on the legality of the ECB intervention, but also on the adequateness of its mandate regarding secondary objectives. In fact, by cherry-picking which secondary objectives to pursue, it paradoxically places the ECB in the political realm, raising issues of legality and democratic legitimacy (Klooster and Boer, 2023: 740).

In the doctrine, some argue that, in the absence of an established hierarchy, the ECB should look at the prioritisation as given by political institutions (Zilioli and Ioannidis, 2022: 384). The bodies responsible for indicating priorities for the purpose of article 127 (1) TFEU are primarily the European Council, but also the Council and the European Parliament. Moreover, this practice should be accompanied by compliance with the principle of proportionality and the duty to state reasons under article 296 TFEU. However, this would be difficult to reconcile with the principle of independence of the ECB which, under article 130 TFEU, prohibits the ECB from seeking or taking instructions from Union institutions when pursuing its objectives. While it is true that deference to the assessments and prioritisations of Union institutions does not amount to issuance of direct instructions or influence exertion, it does make the ECB impacted by third party institutions' political priorities into account.

Likewise, the European Climate Law could portray the same issues concerning independence. While directly applying to Union's political institutions, it does not explicitly rule out the ECB from its scope. And, most certainly, the ECB is a relevant institution within the EU, as it holds the competence to an exclusive and impactful policy. Excluding it from the European Climate Law's scope was already considered as defeating its spirit and objectives, as it requires the Union as a whole to achieve climate neutrality by 2050 (Arriba-Sellier, 2023). However, by considering the ECB to be subject to this law would, again, force it to consider the Union's political priorities. Hence, it would not be inconceivable to consider this kind of effect as periling independence through the back-door.

Importantly, this is where independence and accountability intersect. On the one hand, I would concur that the European Climate Law does not require the ECB to submit its policies to the Commission for assessment. Rather, article 6 requires the Commission to review the consistency of Union measures with the objective of climate neutrality and climate change adaptation, regardless of the author of the measure (Arriba-Sellier, 2023). It may require the Commission to take the necessary measures in accordance with the Treaties, ultimately bringing the ECB before the CJEU. Given the aforementioned political priorities, enhanced judicialisation may be anticipated. While accountability through the judicial process is nothing new, one should be careful when adding avenues for institutional conflict, in particular when they seem to be of limited effectiveness and legality. Regarding the former, the CJEU has already shown its limits to its intervention in the realm of the ECB's monetary policy decisions, as its deferent approach in *Gauweiler* and *Weiss* have shown. In fact, the Court has expanded the reach of the ECB's competences further into the economic field. Given the precedent, similar deference could occur with the climate transition as well.

As for legal grounds, as referred above, the Member States explicitly stated in the Treaties that they wanted price stability to be the primary objective of monetary policy. Therefore, any secondary objectives (including environmental) must be addressed as long, and insofar as it does not hinder price stability. In this regard, it is not difficult to foresee seemingly conflicting monetary and economic (climate) policy decisions, for instance increases in interest rates, reducing central bank balance sheet or reducing liquidity in the economy. It would be odd to see the judicial process getting more involved because the ECB would be caught between choosing compliance with primary law or abiding by political priorities defined by secondary law. Surely, ECB independence does not separate it entirely from Union and exempt it from every rule of EU law. Hence, as the Court in OLAF[18], there are no grounds which prima facie preclude EU legislature from adopting measures capable of applying to the ECB[19]. However, and crucially, the European Climate Law presents a materially different situation, whereas the ECB is not being asked to implement internal procedures to prevent fraud or any unlawful activities detrimental to the Union's financial interests, but to adapt the way it conducts its core task to contextual factors (with a different view, arguing that there is no issue with ECB independence, see Calliess and Tuncel, 2023: 812).

As a result, given the current framework as defined by the Treaties, the ECB should neither cherry-pick the secondary objectives nor be subject to contextual political objectives, either directly or indirectly.

18 Judgement of the Court of 10 July 2003, *Commission v ECB,* C-11/00, EU:C:2003:395.

19 *Ibid.,* paragraph 136.

2.3. Opportunity of tackling climate change

Another issue is related to the opportunity in tackling climate change. At the outset, the Treaty of Maastricht already included respect for the environment, social protection and social cohesion as objectives of the Community (article G [2] of Treaty on European Union), which should be supported by the central bank (article G [25] of Treaty on European Union).

Moreover, both the Member States and the EU have signed the Kyoto Protocol and Paris Agreement. The former was adopted on 11 December 1997 and, due to the ratification process, entered into force on 16 February 2005. It only binds developed countries — therefore, the EU and its Member States — and places a heavier burden on them under the principle of common but differentiated responsibility and respective capabilities, because it recognizes that they are largely responsible for the current high level of emissions in the atmosphere.

The Paris Agreement is a legally binding international Treaty on climate change. It was adopted on 12 December 2015 and entered into force on 4 November 2016. In accordance with article 216 (1) TFEU the Union may conclude agreements with international organisations. It shall do so, for instance, where the conclusion of such agreements is necessary in order to achieve, within the framework of the Union's policies, one of the objectives referred to in the Treaties. Pursuant to article 216 (2) TFEU, "[a]greements concluded by the Union are binding upon the institutions of the Union and on its Member States".

Likewise, current article 11 TFEU requires environmental protection to be fully integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development (Calliess and Tuncel, 2023: 804). Notwithstanding, the importance of environmental protection has been increasing since its first Treaty enshrinement in the 1986 Single European Act, from both a literal and systematic point of view. Indeed, the 1992 Maastricht Treaty amended the provision in order to make it more imperative. But, crucially, the 1999 Amsterdam Treaty and the 2007 Lisbon Treaty changed its systematic location, placing it under *Principles* and the horizontal clauses, respectively (Zilioli and Ioannidis, 2022: 377). Environmental protection has been hailed not only by the political process but also by the judicial branch, as the CJEU has also confirmed its obligatory nature[20].

Although these Treaty provisions cover all EU institutions and, as such, their actions should have been taken in tandem, it did not happen in practice. As such, it could be argued that the ECB could have anticipated itself to the

[20] Judgement of the Court of 16 July 2009, *Horvath*,C-428/07, EU:C:2009:458.

European Council on this matter. By waiting for the definition of the latter's political priorities to define its own green policy, it furthers the view that monetary policy in the Union is increasingly influenced by Member States policy priorities or financial situation. Significantly, the ECB does so when reality is intricate and complex, furthering the view of lack of institutional choice in the EU in these situations, as the central bank is the only one with the necessary financial power to make a difference EU-wide (Van der Sluis, 2021).

However, regarding the relationship between ECB asset purchases and their effect on Member States, one should look beyond the letter of the law and focus on the *raison d'être* of those Treaty provisions. In this regard, in its current form, article 130 TFEU primary purpose is to avoid the exercise of *political influence* over the ECB. That would indeed be the case were direct instructions formally issued. However, from an effects-based perspective, one should admit the possibility that political institutions' priorities seem to be indirectly influencing the ECB and its policy definition. Moreover, article 130 TFEU does not distinguish between instructions regarding the primary and secondary objectives, as it only refers to the tasks and duties conferred upon the ECB by the Treaties, nor between direct or indirect instructions.

To be sure, this is not to say that the ECB cannot align its policies with other institutions and, in many instances, that may well be the case. However, its policy definition should be effectively autonomous, as the example of the FED shows (as described infra). Unfortunately, the factual description depicted above seems to point in a different direction.

IV. COMPARATIVE EXAMPLES OF INSTITUTIONAL RESTRAINT

It should be recognised that the ECB has very much followed the Union's policy priorities, as defined by the European Council since the financial crisis erupted, in particular when financial stability of the eurozone as a whole was introduced as a Union objective. The same can be said regarding the responses to COVID-19 pandemic as well as climate change. Although these circumstances may be a product of correlation and not of causality, a pattern has been created whereby the ECB closely follows political priorities shortly after their definition, which may hinder the perception of independence.

In contrast, the US Federal Reserve (FED) is acting with more caution[21], despite enjoying a broader mandate and increased political focus on climate

[21] Although it is not the scope of this paper, one could speculate whether the differences in approach by the ECB and the FED in addressing climate change could be related to the

change. First, the US Federal Reserve Act of 1913 establishes that the US central bank must pursue other policy objectives concomitantly to price stability, such as economic growth, employment and the stability of the financial system. In fact, the introductory part of such Act states that its intention is to provide for the establishment of Federal Reserve Banks, to furnish an elastic currency. According to Lastra, the concept of *elastic* does not mean stable, but adaptable — with the ability to stretch and then return to its original form (Lastra, 2014: 89). Second, the Federal Reserve enjoys a lesser degree of independence than its European counterpart, as the ECB is considered one of the most independent in the world (Lastra, 2020: 31). Finally, the American political system has also devoted increased attention to climate change, both during the 2021 presidential election and also by the importance attributed to the issue in the Biden administration, which created the figure of Special Presidential Envoy for Climate.

With a broader mandate, smaller degree of independence when compared to the ECB and significant political backing, one would think that the FED would be willing to take monetary action to tackle climate change, given that it enjoys a more favourable context. However, it has shown reluctance to do so. On November 2021, the FED issued a press release where it stated that the "primary responsibility for addressing climate change itself rests with elected officials" (Board of Governors of the Federal Reserve System, 2021). And, as Weidmann's argues, central banks should not make up for a lack of political will: "How would their intervention be seen? As a form of support for policies? As an attempt to overturn them? Or as a way of letting politicians off the hook? Would central banks become engulfed in politics and undermine their own independence?" (Weidemann, 2020).

Notwithstanding, the FED further states its commitment "to working within our existing mandates and authorities to address the implications of climate change, particularly the regulation and supervision of financial institutions and the stability of the broader financial system" (Board of Governors of the Federal Reserve System, 2021). Thus, the FED's willingness to include climate change in its supervisory policy contrasts with its reluctance in the monetary policy realm. Although not uncontested (Hamerschlag, 2022: 577), a research note issued by the Federal Reserve Bank of San Francisco (one of the branches of the US Federal Reserve System) argued that while "the effects and risks of climate change are relevant factors for the Fed to consider, the Fed is not in a position to use monetary policy actively to foster a transition to a low-carbon economy. Supporting environmental sustainability and limiting

standard of accountability. It is not disputed that the latter is much more scrutinised in Congress than the former in the European Parliament. See Lastra, 2020; Cox, 2021.

climate change are not directly included in the Fed's statutory mandate of price stability and full employment" (Rudebusch, 2019: 4).

Similar action has been taken by the Bank of England (BoE). Broadly speaking, its approach to climate change is to "play a leading role, through its policies and operations, in ensuring the financial system and the Bank itself are resilient to the risks from climate change and in understanding its macroeconomic implications. Where there is alignment with the Bank's objectives and legal framework, it acts to support the transition to a net-zero emissions economy" (Bank of England, 2023: 4).

According to the BoE, such an approach will be based on three key pillars, namely governance, strategy as well as risk management, metrics and targets. These tenets are largely directed at the reduction of the BoE's individual carbon footprint; managing the potential financial impact on its balance sheet; taking stock and preparing its supervised entities to the risks brought about by climate change; building capacity, enhancing the understanding of the macroeconomic impact of the phenomenon and fostering sectorial best practices to counter it. Importantly, the BoE remain committed to maintaining price stability as a primary concern (Bank of England, 2023: 70).

Accordingly, the FED considers it should not actively engage in climate transition efforts by using its monetary policy, given that such action is not directly included in its mandate. Therefore, one can infer that even if these efforts could, theoretically, be considered indirectly included in its statutory mandate, this would not be sufficient for the FED to intervene. This has been confirmed by FED Chair Jerome Powell in 2023, whereby central banks should not pursue perceived social benefits not strictly linked to their mandates (Powell, 2023: 1). Similarly, the BoE is also taking a more balanced and cautious approach.

This brief comparative overview allows one to conclude that central banks should refrain from providing support for political priorities, as they enjoy limited mandates and are not well-suited to make discretionary choices that, in effect, discriminates against polluters.

V. CONCLUSION

This paper has assessed the ECB's monetary policy implementation in two distinct contexts: one where there is less friction and reality is simpler, and one where complexity and financial instability are the main features. Until the financial crisis, EMU reality was more consensual, either regarding its economic governance framework or Member States financial and economic interconnection (Hinarejos, 2015: 7; Craig, 2014: 19). This pre-crisis status quo allowed the ECB to strictly abide by its mandate and connected principles.

However, the ECB was one of the EU institutions more affected by EMU's incompleteness, as it was almost compelled to intervene in sovereign bond markets in order to maintain bond yields at affordable levels.

Comparing policy responses from different institutions in starkly different contexts allows one to shine light at how EMU's institutional imbalance is gradually materialising. In the absence of significant EU fiscal power, the ECB is the only EU institution capable of delivering an effective and timely stabilisation role in situations of economic and financial distress, either experienced by an individual Member State or by the Union as a whole. Notwithstanding, these actions have led to the development of a relation of dependence with Member States, which may hinder monetary policy principles and Treaty provisions.

This tendency has endured and is also visible regarding the tackling of climate change. In this situation, the ECB's intervention is at odds with those of the FED and the BoE, which are two of the world's most important central bank and close peers for comparative purposes. By choosing to take action by way of monetary policy the ECB is not sailing under unchartered territory. Instead, it is consolidating the idea that the European Council's political priorities are one factor determining its monetary policy, which further undermines its independence. Paradoxically, by intervening in order to speed up the climate transition, the ECB is fostering an amount of investment that may actually hinder the process, given that the increase of an already significant demand for transition-related goods might generate inflation, which the central bank will then be due to counter.

Problems are seldom posed in simple situations. In these, virtually all institutions can adequately address any issues. However, in complex situations, all institutions deliver less optimal results, as complexity affects quality output horizontally. This should prompt an analysis of which EU institution is better placed to address each challenge. However, it is only possible to compare when alternatives exist and, currently, there is no other mechanism or institution in the EU that can effectively and rapidly address crises other than the ECB. Be that as it may, this paper argues that the ECB should stick to its core principles and closely follow its mandate. Consequently, it should refrain from actively promoting the green transition.

Bibliography

Adamski, D. (2015). Economic constitution of the euro area after the gauweiller preliminary ruling. *Common Market Law Review,* 52, 1451-1490. Available in: https://doi.org/10.54648/COLA2015129.

Amtenbrink, F. (2019). Economic and monetary union. In P. Jan Kuijper *et al.* (eds.). *The Law of the European Union* (pp. 883-940). Deventer: Wolters Kluwer.

Arriba-Sellier, N. de (2023). Obligations without accountability? The European Central Bank and the european climate law. *European Union Law Live,* 18-07-2023. Available in: https://tinyurl.com/pa4426tt.

Bank of England. (2023). *The Bank of England's climate-related financial disclosure 2023* (Report BoE.). London: BoE. Available in: https://tinyurl.com/4vvm6re4.

Batten, S. (2018). *Climate change and the macro-economy: a critical review*. Staff working paper; 706. London: Bank of England. Available in: https://tinyurl.com/2p89awat.

Board of Governors of the Federal Reserve System. (2021). Federal Reserve Board issues statement in support of the Glasgow Declaration by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS). Available in: https://tinyurl.com/yt3xd6cf.

Borger, V. (2016). Outright monetary transactions and the stability mandate of the European Central Bank: Gauweiler. *Common Market Law Review,* 53, 139-196. Available in: https://doi.org/10.54648/COLA2016007.

Calliess, C. and Tuncel, E. (2023). The role of art. 11 Treaty on the Functioning of the European Union in the greening of the European Central Bank Monetary Policy. *German Law Journal,* 24, 796-824. Available in: https://doi.org/10.1017/glj.2023.17.

Calvão da Silva, J. (2013). *Titularização de créditos-securitização*. Coimbra: Almedina.

Christie, R. (2021). Central Banks don't have to pick winners and losers to fight climate change. *Bruegel,* 11-03-2021. Available at: https://tinyurl.com/5bybyz9n.

Craig, P. (2014). Economic governance and the euro crisis: constitutional architecture and constitutional implications. In M. Adams, F. Fabbrini and P. Larouche (eds.). *The constitutionalization of european budgetary constraints* (pp. 19-41). London: Hart Publishing.

Cox, J. (2021). Sen. Toomey accuses the fed of overstepping on climate change and other social issues. *Consumer News and Business Channel,* 29-03-2021. Available in: https://tinyurl.com/3yvxd47d.

Dawson, M. and Bobic, A. (2019). Quantitative easing at the court of justice-doing whatever it takes to save the euro: weiss and others. *Common Market Law Review,* 56, 1005-1040. Available in: https://doi.org/10.54648/COLA2019097.

De Grauwe, P. (2018). *Economics of Monetary Union*. Oxford: Oxford University Press.

Estella, A. (2018). *Legal Foundations of European Union Economic Governance*. Cambridge: Cambridge University Press. Available in: https://doi.org/10.1017/9781316493243.

European Central Bank. (1998). The Central Banks of the European System stability: oriented monetary policy strategy: Speech by the President of the European Central Bank, Dr. Willem F. Duisenberg, at the Institute of European Affairs on 10 November 1998 in Dublin. Introduction. *European Central Bank*. Available in: https://tinyurl.com/3j5xsjcm.

— (2003). The European Central Bank monetary policy strategy. *European Central Bank,* 08-05-2003. Available in: https://tinyurl.com/3227bhxk.
— (2010). Decision of the European Central bank of 14 May 2010 establishing a Securities Market Programme (ECB/2010/5/14). *Official Journal of the European Union,* 20-05-2010. Available in: https://tinyurl.com/yy576ypj.
— (2012). Technical characteristics of simple monetary operations. *European Central Bank,* 06-10-2012. Available in: https://tinyurl.com/t85y8y6w.
— (2015). Decision (EU) 2015/774 of the European Central Bank of 4 March 2015 on a Secondary Markets Public Sector Asset Purchase Programme (ECB/2015/10). *Official Journal of the European Union,* 14-05-2015. Available in: https://tinyurl.com/bdz9tw24.
— (2020). ECB announces €750 billion Pandemic Emergency Purchase Programme (PEPP). *European Central Bank,* 18-03-2020. Available in: https://tinyurl.com/4cx8s3yv.
— (2021a). ECB presents action plan to include climate change considerations in its monetary policy strategy. *European Central Bank,* 08-07-2021. Available in: https://tinyurl.com/3yynecrc.
— (2021b). The ECB's Monetary Policy Strategy Statement. *European Central Bank.* Available in: https://tinyurl.com/yc2jpk5j.
— (2021c). An Overview of the European Central Bank monetary policy strategy. *European Central Bank*. Available in: https://tinyurl.com/mtzjx2yw.
— (2022). A new age of energy inflation: climateflation, fossilflation and greenflation. Speech by Isabel Schnabel, member of the executive board of the European Central Bank, at a panel on monetary policy and climate change at the European Central Bank and its Watchers XXII Conference. *European Central Bank,* 17-03-2022. Available in: https://tinyurl.com/yc6f5dr4.
European Commission. (2019). *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: the European Green Deal.* European Commission. Available in: https://tinyurl.com/td8ddfrh.
— (2021). *Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions: "Fit for 55": delivering the European Union 2030 Climate Target on the way to climate neutrality.* European Commission. Available in: https://tinyurl.com/23pf74m7.
European Council. (2010). Statement by the heads of state or government of the European Union. *Press EC,* 01-02-2010. Available in: https://tinyurl.com/4ddhm76a.
— (2019a). *European Council, 21-22 March 2019: Main results*. European Council. Available in: https://doi.org/10.1055/s-0039-1684163.
— (2019b). *European Council meeting (20 June 2019) - Conclusions*. European Council. Available in: https://tinyurl.com/5ab364tw.
— (2019c). *European Council meeting (12 December 2019) - Conclusions*. European Council. Available in: https://tinyurl.com/2yezbfh8.

— (2020). Conclusions by the President of the European Council following the video conference on COVID-19. *European Council,* 10-03-2020. Available in: https://tinyurl.com/apjbrduc.

Falagiarda, M. and Reitz, S. (2015). Announcements of European Central Bank unconventional programs: implications for the sovereign spreads of stressed euro area. *Journal of International Money and Finance,* 53, 276-295. Available in: https://doi.org/10.1016/j.jimonfin.2015.02.005.

Fabbrini, F. (2015). After the Outright Monetary Transactions case: the supremacy of European Union Law as the guarantee of the equality of the Member States. *German Law Journal,* 6, 1003-1023. Available in: https://doi.org/10.1017/S2071832200019970.

— (2022) *European Union fiscal capacity: legal integration after COVID-19 and the War in Ukraine*. Oxford: Oxford University Press.

Friedman, M. (1968). The role of monetary policy. *American Economic Review,* 58, 1-17.

Goldmann, M. (2014). Adjudicating economics? Central Bank independence and the appropriate standard of judicial review. *German Law Journal,* 145, 265-280. Available in: https://doi.org/10.1017/S2071832200002947.

Gonçalves, E. and Koester, G. (2022). The role of demand and supply in underlying inflation — decomposing HICPX inflation into components. *Economic Bulletin,* 7, 70-76. Available at: https://tinyurl.com/5ab6csme.

Hamerschlag, B. (2022). Green new Federal Reserve: how the Federal Reserve's existing legal powers could allow it to take action on climate change. *Texas Law Review,* 100, 577-618.

Hinarejos, A. (2015). *The euro crisis in constitutional perspective*. Oxford: Oxford University Press. Available in: https://doi.org/10.1093/acprof:oso/9780198714958.001.0001.

Ioannidis, M. (2016). Europe's new transformations: how the European Union Economic Constitution changed during the eurozone crisis. *Common Market Law Review,* 53, 1237-1282. Available in: https://doi.org/10.54648/COLA2016115.

Jourdan, S. and Kalinowski, W. (2019). *Aligning monetary policy with the European Union climate targets*. Paris: Veblen Institute. Available in: https://tinyurl.com/4k7zdu8e.

Kämmerer, J. (2022). Art. 123, ex art. 101 TEC "Prohibition of Credit Facilities". In H. Siekmann (ed.). *The european monetary union* (pp. 155-173). London: Hart Publishing.

Klooster, J. and Boer, N. (2023). What to do with the European Central Bank secondary mandate. *Journal of Common Market Studies,* 61, 730-746. Available in: https://doi.org/10.1111/jcms.13406.

Komesar, N. (1997). *Imperfect alternatives: choosing institutions in law, economics and public policy*. Chicago: The University of Chicago Press.

Kumm, M. (2014). Rebel without a good cause: Karlsruhe's misguided attempt to draw the Court of Justice of the European Union into a game of "chicken" and what the Court of Justice of the European Union might to about it. *German*

Law Journal, 15, 203-215. Available in: https://doi.org/10.1017/S2071832200002911.

Lang, A. (2018). *Ultra vires* review of the European Central Bank policy of quantitative easing: an analysis of the German Constitutional Court's preliminary reference order in the Public Sector Purchase Programme case. *Common Market Law Review,* 55, 923-951. Available in: https://doi.org/10.54648/COLA2018075.

Lastra, R. (1992). The independence of the European System of Central Banks. *Harvard International Law Journal,* 33, 475-519.

— (2014). The role of central banks in monetary affairs: a comparative perspective. In T. Cottier *et al.* (eds.). *The rule of law in monetary affairs* (pp.78-102). Cambridge: Cambridge University Press.

— (2020). Accountability mechanisms of the Bank of England and of the European Central Bank. In *Study for the Committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of Life Policies. Monetary Dialogue Papers*. Luxembourg: European Parliament Available at: https://tinyurl.com/pvxzkc9p.

Lionello, L. (2020). *The objective of stability of the euro area as a whole: the reform of the European Economic Union and perspectives of fiscal integration.* Cham: Springer. Available in: https://doi.org/10.1007/978-3-030-28045-1.

Louis, J. (2020). L'indépendance de La Banque Centrale Européenne. *Revue Trimestrielle de Droit Européenne,* 12, 797-830.

Matos, N. A. (2022). Can any European Central Bank crisis tool really help Member States? *European Union Law Live,* 21-04-21022. Available in: https://tinyurl.com/cenjcspp.

McKinsey and Company (2022). *The net-zero transition: what it would cost, what it could bring*. McKinsey and Company. Available in: https://tinyurl.com/ybffskzu.

Megliani, M. (2020). From the european stability mechanism to the european monetary fund: there and back again. *German Law Journal,* 21, 674-685. Available in: https://doi.org/10.1017/glj.2020.42.

Nettesheim, M. (2021). Next generation European Union: the transformation of the European Union Financial Constitution. In H. Kube and E. Reimer (eds.), *Solid financing of the European Union* (pp. 9-45). Heidelberg: Institut für Finanz-und Steuerrecht.

Olesti Rayo, A. (2022). El programa Next Generation European Union y el presupuesto de la Unión Europea. *Revista de Derecho Comunitario Europeo,* 73, 727-745. Available in: https://doi.org/10.18042/cepc/rdce.73.01.

Powell, J. (2023). Panel on "Central Bank independence and the mandate: evolving views". *Symposium on Central Bank independence (Stockholm. January 10, 2023).* Available in: https://tinyurl.com/yck3kuja.

Puetter, U. (2014). *The European Council and the Council*. Oxford: Oxford University Press. Available in: https://doi.org/10.1093/acprof:oso/9780198716242.001.0001.

Rodden, J. (2012). market discipline and united states federalism. In P. Conti-Brown and D. Skeel (eds.). *When states go broke: the origins, context, and solutions for the* *american states in fiscal crisis* (pp. 123-145). Cambridge: Cambridge University Press. Available in: https://doi.org/10.1017/CBO9781139150835.009.

Rogoff, K. (1985). The optimal degree of commitment to and intermediate monetary target. *The Quarterly Journal of Economics,* 100, 1169-1189. Available in: https://doi.org/10.2307/1885679.

Rudebusch, G. (2019). *Climate change and the Federal Reserve.* San Francisco: Federal Reserve Bank of San Francisco. Available in: https://tinyurl.com/mrk2xnfa.

Shapiro, A. (2022). *How much do supply and demand drive inflation?* San Francisco: Federal Reserve Bank of San Francisco. Available at: https://doi.org/10.24148/wp2022-18.

Steinbach, A. (2022). The greening of the economic and monetary union. *Common Market Law Review,* 59, 329-362. Available in: https://doi.org/10.54648/COLA2022028.

Summers, L. (2017). Central Bank independence. *L. Summers* [blog], 28-9-2017. Available in: https://tinyurl.com/yssvsz8m.

Van der Sluis, M. (2019). Similar, therefore different: judicial review of another unconventional monetary policy in Weiss, C-493/17. *Legal Issues of Economic Integration,* 46, 263-284. Available in: https://doi.org/10.54648/LEIE2019016.

— (2020). Fighting the fallout: the European Central Bank adopts a Purchase Programme in response to the coronavirus. *EU Law Live,* 25-03-2020. Available in: https://tinyurl.com/2p9v4stb.

— (2021). The European Central Bank should combat climate change, because it can. *EU Law Live (ed. 73),* 01-10-2021. Available in: https://tinyurl.com/y35rb8np.

Van Middelaar, L. and Puetter, U. (2022). The European Council: The Union's supreme decision-maker. In D. Hodson *et al.* (eds.). *The institutions of the European Union* (pp. 51-78). Oxford: Oxford University Press. Available in: https://doi.org/10.1093/hepl/9780198862222.003.0003.

Weidemann, J. (2020). How Central Banks should address climate change. *Financial Times,* 19-11-2020. Available in: https://tinyurl.com/wk2maxaj.

Zilioli, C. and Ioannidis, M. (2022). Climate change and the mandate of the European Central Bank: potential and limits of monetary contribution to european green policies. *Common Market Law Review,* 59, 363-394. Available in: https://doi.org/10.54648/COLA2022029.