ARTICLE

Sustainable Central Banking

ROSA MARÍA LASTRA & CHRISTINA PARAJON SKINNER[*]

In the past several years, central banks globally have begun to consider whether, and to what extent, questions of climate change and sustainability intersect with their statutory mandates. The issues are not straightforward nor is there a one-size-fits-all approach. A range of important questions thus remain unanswered. To what extent can central banks pursue climate change and sustainability goals within their legislative authorities and thus retain legal legitimacy around these actions? Where legal authority exists, how can central banks operationalize climate or sustainability goals—are existing tools fit for purpose or are new ones required? What is the best distribution of tasks between political authorities and depoliticized agencies with narrower mandates? Inasmuch as public discourse and debate have thrown up these thorny questions, the next several years will require policy and academic conversation to explore them. To that end, this Article develops a set of principles for central banks to consider when addressing these climate policy governance questions, in particular with regard to the limits and legitimacy of sustainable central banking. It does so by examining the legal frameworks governing, and unfolding climate initiatives in, the U.S. Federal Reserve, the U.K. Bank of England, and the European Central Bank.

[*] Sir John Lubbock Chair in Banking Law, Centre for Commercial Law Studies, Queen Mary University of London; Assistant Professor, The Wharton School of the University of Pennsylvania. This Article was drafted in the context of a collaborative project with staff in the Legal Department of the International Monetary Fund, ahead of the publication of two IMF working papers on key legal issues at the intersection between climate change and, respectively, central banks' legal frameworks and banking law. Andrew Orita and Daniele d'Alvia provided excellent research assistance.

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INTRODUCTION

Around the globe, central banks' purpose, powers, status, and identity are in flux.[1] What is the role and responsibility of a modern central bank? Whether central banks can or should address the environmental issues concerning climate change and sustainability has become the signature question in this respect.[2] Though public attention to environmental issues has become heightened in the past few years, a period of high inflation, geopolitical instability, and energy insecurity has complicated central banks' mission immensely. So, too, have varying outcomes of judicial review.[3]

This Article reflects on the divergent approaches toward climate change taken by the central banks in the U.S., EU, and U.K., with particular focus on the intersection between public law norms and central banking policy. In undertaking this analysis, the Article suggests a set of overarching principles—*Grundnorms*—that can be used to guide central banks around the world as they navigate pressure from government and citizens to address climate change, on the one hand, and limits in public law and organic central bank statutes on the other. In developing a comparative analysis of the specific cases of the Federal Reserve, the Bank of England, and the European Central Bank, the Article derives principles that aim toward a set of international best practices for sustainable central banking.

Central banks are not primarily mandated to tackle climate change.[4] Still, scholars and policymakers have advanced a host of rationale and motives

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1. *See* Christina Parajon Skinner, *Central Bank Activism*, 71 DUKE L.J. 247, 249–54 (2021) (discussing the pressure on central banks in recent years to expand their emergency support measures more broadly in the economy and in markets, to tackle climate change, and address inequality). *See also* Charles Goodhart & Rosa Lastra, *The Changing and Growing Roles of Independent Central Banks Now Do Require a Reconsideration of Their Mandate*, ACCT., ECON., L. 1 (2023).

2. *See* Christina Parajon Skinner, *Central Banks and Climate Change*, 74 VAND. L. REV. 1301, 1354–64 (2021) (scoping the legal authority of the U.S. Federal Reserve to address climate change under its various legal mandates); Jeff Cockrell, *Don't Rely on Central Banks to Fight Climate Change*, CHI. BOOTH REV. (Oct. 18, 2021), https://www.chicagobooth.edu/review/dont-rely-central-banks-fight-climate-change.

3. Skinner, *supra* note 1, at 325 n.357.

4. Generally speaking, monetary policy decisions are justiciable in the European Union/euro area, but usually not in the United States. The U.S. Supreme Court has reined in agency initiatives to address climate change in the absence of clear authority from Congress under the so-called major questions doctrine. West Virginia v. E.P.A., No. 20–1530, slip op. at 20 (U.S. June 30, 2022). Technically, the holding was relatively narrow—that "Congress did not grant [the Environmental Protection Agency] in Section 111(d) of the Clean Air Act the authority to devise emission caps based on the generation shifting approach the Agency took in the Clean Power Plan." *Id.* at 4. Yet in relying on the so-called "major questions" doctrine, the Court fired a warning shot across the bow to the administrative state—and the U.S. Federal Reserve's experimentation with climate policy is likely not exempt. *Id.* at 4–6. In contrast, the European Court of Human Rights has considered whether policy inaction in dealing with climate change could be considered a human rights abuse. *See Requête no 39371/20 Cláudia DUARTE*

for enlisting central banks to tackle climate change. For some, climate change presents a financial stability risk—either because physical events will reduce the value of bank assets or because transition risk (i.e., policy changes driving a transition to low-carbon economics) will.[5] On that view, this form of systemic risk is something that central banks should tackle head on. Others see central banks' balance sheets as powerful tools for capital allocation; or, somewhat relatedly, see central banks' regulatory or supervisory powers as useful for incentivizing banks to lend to green projects and firms (by buying green assets or requiring green collateral) while dissuading them from financing brown endeavors.[6] Ultimately, however, whether a central bank can use its monetary, regulatory, or supervisory tools in this respect comes down to its legal authority (i.e., its mandates) and superseding public law constraints.[7]

To date, some scholarship and policy work has considered the particular legal mandates in respect of each individual central bank—the Fed, the BOE, and the ECB.[8] Yet gaps remain where *international principles* are concerned.[9] Part of the reason for the lack of internationally agreed upon

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AGOSTINHO et autres contre le Portugal et 32 autres États [Duarte Agostinho & Others v. Portugal & Others], App. No. 39371/20, 4–5 (Nov. 30, 2020), https://hudoc.echr.coe.int/eng?i=001-206535. *See also* Joana Setzer et al., *Climate Change Litigation and Central Banks* 13–15, 19–20 (Eur. Cent. Bank, Working Paper No. 21, 2021) (introducing the German Constitutional Court's, the Supreme Court of the Netherlands', and the District Court of The Hague's cases that courts affirm human rights perspective in response to climate change). *But see* Assoc. Press, *EU's Top Court Rejects Effort to Force Tougher Climate Rules*, PBS (Mar. 25, 2021, 6:27 PM), https://www.pbs.org/newshour/world/eus-top-court-rejects-effort-to-force-tougher-climate-rules (explaining that the highest court in the EU has declined to enforce tougher climate rules).

5. *See* Heather Boushey, Noah Kaufman & Jeffrey Zhang, *New Tools Needed to Assess Climate-Related Financial Risk*, WHITE HOUSE COUNCIL OF ECON. ADVISORS (Nov. 3, 2021), https://www.whitehouse.gov/cea/written-materials/2021/11/03/new-tools-needed-to-assess-climate-related-financial-risk-2/; Tina Emambakhsh et al., *Climate-related Risks to Financial Stability*, EUR. CENT. BANK (May 2022), https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202205_01~9d4ae00a92.en.html; *Climate Change: What Are the Risks to Financial Stability?*, BANK OF ENG. https://www.bankofengland.co.uk/knowledgebank/climate-change-what-are-the-risks-to-financial-stability (last visited Nov. 24, 2022); BASEL COMM. ON BANKING SUPERVISION, CLIMATE-RELATED RISK DRIVERS AND THEIR TRANSMISSION CHANNELS 1, 6–7 (Bank for Int'l Settlements 2021), https://www.bis.org/bcbs/publ/d517.pdf.

6. Skinner, *supra* note 1, at 288–89 nn.181–82.

7. *See* Skinner, *supra* note 2, at 1354–64 (staking this claim and examining it relative to the Fed).

8. *See* Skinner, *supra* note 2, at 1325–53 (examining the legal mandates of the Fed). *See also* Marco Lamandini, David Ramos & Javier Solana, *The European Central Bank (ECB) as a Catalyst for Change in EU Law. Part 1: The ECB's Mandates*, 23 COLUM. J. EUR. L. 1, 5–22 (2016) (exploring the ECB's mandate); Forrest Capie, *The Bank of England Over 325 Years*, 38 ECON. AFFS. 357, 358, 361–62 (2018) (exploring the BOE's mandate).

9. Many central banks have convened in international fora—such as the Financial Stability Board (FSB) and Basel Committee for Banking Supervision (BCBS)—to discuss their shared interests in addressing climate change. *See, e.g.*, BASEL COMM. ON BANKING SUPERVISION, PRINCIPLES FOR THE EFFECTIVE MANAGEMENT AND SUPERVISION OF CLIMATE-RELATED FINANCIAL RISKS 1 (Bank for Int'l Settlements 2022), https://www.bis.org/bcbs/publ/d532.pdf; FIN. STABILITY BD., FSB

standards likely stems from the wide divergence, thus far, of national approaches to climate change. These differing approaches present real limits to what central banks might be willing to agree in international fora like the Financial Stability Board, the Bank for International Settlements, the Basel Committee on Banking Supervision, or the G20.[10] After all, as with all central banking policy, implementation of internationally agreed best practice must ultimately be national and pursuant to domestic authority and law.[11] Consequently, the international community of central bankers still struggles to identify common ground.

The core claim of the Article is that this divergence among national central banks' approaches (and legal mandates) is not an impediment but rather an opportunity to discern some common ground. Accordingly, the primary aim of this Article is to develop a set of principles by examining, side-by-side, the experiences of the U.S. (the Federal Reserve, the "Fed"), the U.K. (the Bank of England, the "BOE") and the EU/euro area (the European Central Bank, the "ECB"). Other jurisdictions in the developed and developing world that are also confronting the same challenges should find these principles useful.

Some context at the outset is instructive. The central banking community first began to frame climate change as an overlooked aspect of their mandates (or an area where mandates should be expanded) in 2015, at the initiative of Mark Carney, the then-Governor of the BOE and Chairman of the Financial Stability Board ("FSB").[12] Speaking to an audience at Lloyd's of London, Mr. Carney described climate change as a "tragedy of the horizon," and lamented that climate change seemed to fall outside "the horizon of technocratic authorities, like central banks, who are bound by

ROADMAP FOR ADDRESSING CLIMATE-RELATED FINANCIAL RISKS 1, 1–2 (2021), https://www.fsb.org/2021/07/fsb-roadmap-for-addressing-climate-related-financial-risks.

10. *See* FIN. STABILITY BD., https://www.fsb.org/ (last visited Nov. 24, 2022); BANK FOR INT'L SETTLEMENTS, https://www.bis.org/ (last visited Nov. 24, 2022); *Overview*, BASEL COMM., https://www.bis.org/bcbs/ (last visited Nov. 24, 2022); *see also* James McBride, Anshu Siripurapu & Noah Berman, *What Does the G20 Do?*, COUNCIL ON FOREIGN RELS., https://www.cfr.org/backgrounder/what-does-g20-do (last visited Nov. 24, 2022).

11. *See Basel Regulatory Framework*, BD. OF GOVERNORS OF FED. RSRV. BD. (Feb. 13, 2017) https://www.federalreserve.gov/supervisionreg/basel/basel-default.htm; *see also* News Release 2022-109, Bd. of Governors of the Fed. Rsrv. Sys., Fed. Deposit Ins. Corp. & Off. of the Comptroller of the Currency, Agencies Reaffirm Commitment to Basel III Standards (Sept. 9, 2022), https://www.occ.treas.gov/news-issuances/news-releases/2022/nr-ia-2022-109.html (reporting federal bank regulatory agencies' commitment to implementing the "Basel III" standards issued by the BCBS in 2017).

12. Mark Carney, Governor, Bank of Eng. & Chairman, Fin. Stability Bd., Address at the Bank of England: Breaking the Tragedy of the Horizon—Climate Change and Financial Stability (Sept. 29, 2015), https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf?la=en&hash=7C67E785651862457D9951114 7C7424FF5EA0C1A.

their mandates."[13] That speech also, in referring to the burgeoning conversation around climate change at the FSB, established language that would be used to discuss climate change in the context of central banking and financial markets for years to come—namely, in terms of physical risk, transition risk, and liability risk.[14]

Two years later, in 2017, the international community of central banks formed the Network for Greening the Financial System ("NGFS"), a consortium of central banks dedicated to exploring how central bank tools might be used to facilitate a transition to a low-carbon economy.[15] In particular, the stated goals of the NGFS were established as threefold: (1) to "help strengthen the global response required to meet the goals of the Paris agreement," presumably through central banking action; (2) "to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments"; and (3) to "define[] and promote[] best practices" within central banks and, relatedly, to "conduct[] or commission[] analytical work on green finance."[16]

But in terms of central banking law and practice, the landscape among the world's advanced economy central banks became quite divergent over time. While some such central banks re-tooled a range of their policy levers to address climate change—the BOE and ECB most notably—others, like the Fed, were more reserved. Their differing approaches are rooted in the banks' respective legal frameworks. Indeed, the fact that diverging legal frameworks set central banks on differing legal paths toward addressing climate change is increasingly recognized at the U.S. Federal Reserve and apparent in the public stances taken by leading central bankers in each of these jurisdictions.[17]

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13. *Id.*

14. This language also now informs a growing field of climate litigation. *See* Frank Elderson, Chair, Cent. Banks & Supervisors Network for Greening the Fin. Sys., Member, Exec. Bd. of the ECB & Vice-Chair, Supervisory Bd. of the ECB, The Embrace of the Horizon: Forcefully Moving with the Changing Tide for Climate Action in Financial Sector Policies (June 3, 2021), https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210603~2da57607e2.en.html.

15. *Origin and Purpose*, NETWORK FOR GREENING FIN. SYS. (Sept. 13, 2019, 2:47 PM), https://www.ngfs.net/en/about-us/governance/origin-and-purpose (last visited Sept. 22, 2021).

16. *Id.*

17. *Compare* Jerome H. Powell, Chair, Bd. of Governors of the Fed. Rsrv. Sys., Remarks at the Panel on Central Bank Independence and the Mandate—Evolving Views at the Symposium on Central Bank Independence (Jan. 10, 2023), https://www.federalreserve.gov/newsevents/speech/powell20230110a.htm#:~:text=Sticking%20to%20our%20mandate,the%20case%20for%20our%20independence (remarking that the Fed will "'stick to [its] knitting' and not wander off to pursue perceived social benefits that are not tightly linked to [its] statutory goals and authorities" and noting that "[a]ddressing climate change seems likely to require policies that would have significant distributional and other effects on companies, industries, regions, and nations. Decisions about policies to directly address climate change should be made by the elected branches of government and thus reflect the public's

The Fed, for its part, has no explicit mandate to address climate change or sustainability. In contrast, in the case of the ECB, meanwhile, its secondary objective according to Article 127(1) section 2 of the Treaty for the Functioning of the European Union ("TFEU") in combination with Article 3 of the Treaty of the European Union ("TEU") provides a possible legal basis for the ECB to pursue climate change as a contributory task (though the main responsibility for environmental policies remains with the Member States).[18] Similarly, the Bank of England's Monetary Policy Committee ("MPC") and Financial Policy Committee ("FPC") both have secondary mandates to regard the economic policy of government, including policies that might be interpreted to extend to climate change or sustainability.

The present political situation—domestically and internationally—has further complicated the climate change and central banking conversation in each of these three jurisdictions. Domestically, inflation in these economies has reached decades-highs while Russia's invasion of Ukraine has put the goals of energy security and sustainability somewhat in tension.[19] Overlaying these conversations is increasing populism and pushback against the

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will as expressed through elections"), *with* Isabel Schnabel, Member, Exec. Bd. of the ECB, Monetary Policy Tightening and the Green Transition, Speech at the International Symposium on Central Bank Independence (Jan. 10, 2023), https://www.bis.org/review/r230110k.pdf (remarking that "central banks [are required] to review the scale and scope of their own contribution to the green transition" and that the ECB is "obliged to support the EU's general economic policies in line with [its] secondary objective . . . [and to] ensure that all of the ECB's policies are aligned with the objectives of the Paris Agreement to limit global warming to well below 2 degrees Celsius"). *See also* Chris Giles & Daria Mosolova, *How Do the Federal Reserve and ECB Differ on Tackling Climate Change?*, FIN. TIMES (Jan. 13, 2023), https://www.ft.com/content/986748df-55f5-46ff-8d7c-ac508870a077 (noting that "[a]n apparent gulf has opened up between central banks on either side of the Atlantic over their role in battling climate change").

18. *See generally* THE ECB MANDATE: PERSPECTIVES ON SUSTAINABILITY AND SOLIDARITY, PARL. EUR. DOC. (PE 648.813) 10–13 (2020). It bears noting that some ECB officials began in 2020 to remark that, in their view, climate change poses risks that affect the ECB's primary mandate regarding price stability, as outlined in TFEU Article 127.1. For example, ECB President Lagarde said in an interview with the *Financial Times*, "as we have this price stability mandate . . . , climate change actually has an impact on price stability." Interview with Christine Lagarde, President of the European Central Bank, Fin. Times (July 8, 2020), https://www.ft.com/video/665ad877-69b6-42ba-b513-e9e9ce0739e6. Shortly thereafter, ECB Executive Board Member Isabel Schnabel, citing "material risks to price stability in the medium to long term" posed by climate change, underlined the need to include climate change considerations in the execution of the central bank's core mandate. Isabel Schnabel, Member of the Exec. Bd. of the ECB, Speech at Virtual Roundtable on Sustainable Crisis Responses in Europe: Never Waste a Crisis: Covid-19, Climate Change & Monetary Policy (July 17, 2020), https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200717~1556b0f988.en.html.

19. *See* German Lopez, *A Global Inflation Crisis*, N.Y. TIMES (July 26, 2022), https://www.nytimes.com/2022/07/26/briefing/inflation-prices-ukraine-economy.html; Will Mathis & Ewa Krukowska, *Putin's War Threatens Europe's Ambitious Climate Goals*, BLOOMBERG (July 7, 2022, 12:01 AM), https://www.bloomberg.com/news/articles/2022-07-07/ukraine-invasion-threatens-europe-s-climate-change-goals#xj4y7vzkg.

growing role of the State (especially the central bank) in more areas of social and economic life.[20]

Accordingly, the time is ripe for the international central banking community to bring forward the climate change conversation with a view to dissecting these issues with respect to each distinct policy tool while also balancing the need to maintain legal and democratic legitimacy, adhere to free-market principles, and preserve the independence and accountability of the central bank. The principles developed in this Article aim to guide central banks in establishing—or at least pursuing—policies that balance those economic and democratic values.

To that end, the paper is organized as follows: Part I considers some key central banking functions—monetary policy, macroprudential policy, and microprudential supervision. In the main, Part I encourages central banks to divide balance sheet policy from supervisory policy. It urges central banks to reflect on the institutional and economic risks at stake in using their balance sheets for greening.[21] Central banks have more latitude to pursue climate change goals where microprudential supervision is concerned—though, the scope of acceptable supervisory intervention will vary according to the legal framework and public law environment of each jurisdiction.

In a somewhat 'grey zone' lies financial stability and/or macroprudential climate policy.[22] Here, the international community should expect a range of diverging national approaches that vary according to the unique characteristics of each jurisdiction's banking sector. Also relevant to the supervisory inquiry is the design and authority of other macroprudential authorities, such as the Financial Stability Oversight Council ("FSOC") in the U.S., the Financial Policy Committee ("FPC") of the Bank of England

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20. *See, e.g.*, *When Central Banks Become One-Stop Policy Shops*, ECONOMIST (Apr. 21, 2022) https://www.economist.com/special-report/2022/04/20/when-central-banks-become-one-stop-policy-shops; *see also* Raghuram Rajan, *Central Banking, Political Pressure, and its Unintended Consequences*, *in* POPULISM AND THE FUTURE OF THE FED 3, 4 (James A. Dorn ed., 2022) ("call[ing] for central banks to go back to the knitting and reassess both their goals as well as their use of tools"); Michael J. de la Merced, *How Capitalism is Coping in an Era of Populism*, N.Y. TIMES (Dec. 16, 2020), https://www.nytimes.com/2020/12/16/business/dealbook/capitalism-populism-debate.html; Zoe Thomas, *Why Do Many Americans Mistrust the Federal Reserve*, BRIT. BROAD. CORP. (Dec. 15, 2015), https://www.bbc.com/news/business-35079495.

21. HOUSE OF LORDS ECONOMIC AFFAIRS COMMITTEE, QUANTITATIVE EASING: A DANGEROUS ADDICTION? 47–49 (2021) (noting that Quantitative Tightening ("QT") may be needed to counter the inflationary effects of years of Quantitative Easing ("QE")).

22. Skinner, *supra* note 2, at 1325, 1331–32, 1337, 1341–42 (explaining a similar breakdown in authority in respect of the Federal Reserve's powers specifically, as enabled and constrained by the Federal Reserve Act, Bank Holding Company Act and Dodd-Frank Act).

in the U.K., and a mix of national and supranational arrangements in the EU/euro area.[23]

Part II of this paper turns from central banking law to develop a set of principles for sustainable central banking that incorporate a broader set of institutional considerations. Specifically, Part II outlines three such principles for central banks to incorporate into their climate policy conversations. The first is a principle of subsidiarity (different, as we explain, from the principle of Article 5 of the TEU) that acknowledges capacity in the private sector, or comparative advantage among other regulatory bodies, which suggests a lesser role for the central bank.

The second principle concerns tradeoffs—it urges central bank analysis of the tradeoffs between financial stability and climate policy and monetary policy generally, as well as tradeoffs imposed on households from central bank greening. There are also macro trade-offs to be dealt with that are associated with growth in the size of government interventions relative to market forces. The third principle cautions against climate-related populism and, in mirror image, urges deference to democratically made decisions about which goals to pursue and when—including climate change.

Part III focuses on mechanisms of accountability to ensure that central banks remain committed to these principles and legal boundaries. The central bank is typically a government agency that receives a delegated mandate by law (via a statute, a constitution, or a treaty).[24] Such delegation is always subject to constraints, including the provision of adequate mechanisms of accountability (legislative and others). Central bank independence gives officials a degree of discretion in the pursuit of their delegated mandates, but subject only to a framework of formal rules. However, since central banks are by definition technocracies—composed of unelected experts—a basic problem of legitimacy arises: how to reconcile their powers with the demands of a democracy?[25]

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23. *See* Charles Goodhart & Rosa M. Lastra, *Interaction Between Monetary Policy and Bank Regulation*, *in* EUR. PARL. DIRECTORATE GEN. FOR INTERNAL POL'YS, INTERACTION BETWEEN MONETARY POLICY AND BANK REGULATION 19, 37, 42 n.6, 46 (2015), https://www.europarl.europa.eu/cmsdata/105462/IPOL_IDA(2015)563458_EN.pdf.

24. *See* ROSA MARÍA LASTRA, INTERNATIONAL FINANCIAL AND MONETARY LAW 29–30 (2d ed. 2015) (contending that the central bank is also a bank).

25. *See generally* PAUL TUCKER, UNELECTED POWER: THE QUEST FOR LEGITIMACY IN CENTRAL BANKING 147–292 (2020) (a literature on central bank legitimacy); LASTRA, *supra* note 24, at 76; Christina Parajon Skinner & Carola Binder, *The Legitimacy of the Federal Reserve*, 28 STAN. J. L. BUS. & FIN. 7 (forthcoming 2023) (on file with authors), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3956847.

The answer is through accountability.[26] The design of accountable independence is always a balancing act. In all democratic societies there is a tension between ensuring accountability for governmental actions while simultaneously ensuring that an institution enjoys freedom from political interference sufficient to make decisions without fear or suspicion of political or social capture (or reprisal).[27]

I. CENTRAL BANKING FUNCTIONS

Central bank lawyers and policymakers may well agree in principle that climate change and sustainability are significant to the economy in general. But in practice, each central bank is empowered (and conversely, constrained) by a domestic legal framework, and operates in a country-specific financial marketplace and amid a country-specific political-economy.[28] Invariably, these national distinctions lead to distinct policy stances—including on climate change.

Nonetheless, there is important work for the international community to do in identifying a set of normative principles that should apply universally across all well-functioning central banks. These principles refer to adherence to the rule of law, independence from political pressure, respect for due process, and appropriate transparency. It is with that stance

26. In the United States, independent regulatory commissions have been the subject of extensive debate and criticism. For instance, the 1971 Ash Council Report (the Report of the President's Advisory Council on Executive Organization) on Selected Independent Regulatory Agencies recommended that functions of six agencies, including the Securities and Exchange Commission (SEC), should be transferred to single administrators under the President. In particular, the agencies were criticized for their alleged lack of accountability and their excess of independence. For a review of this report, see Stephen Breyer, *The Ash Council's Report on the Independent Regulatory Agencies*, 2 BELL J. ECON. & MGMT. SCI. 628, 628–37 (1971).

27. Accountability can be defined as an obligation owed by one person (the accountable) to another (the accountee) according to which the former must give account of, explain and justify his actions or decisions against criteria of some kind, and take responsibility for any fault or damage. *See generally* Fabian Amtenbrink & Rosa M. Lastra, *Securing Democratic Accountability of Financial Regulatory Agencies—A Theoretical Framework*, *in* MITIGATING RISK IN THE CONTEXT OF SAFETY AND SECURITY—HOW RELEVANT IS A RATIONAL APPROACH? 115 (Richard V. de Mulder ed., 2009) (suggesting needed accountability arrangements in the institutional design of financial regulation in Europe and beyond). *See also* Rosa M. Lastra & Geoffrey P. Miller, *Central Bank Independence in Ordinary and Extraordinary Times*, *in* CENTRAL BANK INDEPENDENCE 31 (Jan Kleineman ed., 2001); JAN KLEINEMAN, CENTRAL BANK INDEPENDENCE: THE ECONOMIC FOUNDATIONS, THE CONSTITUTIONAL IMPLICATIONS AND DEMOCRATIC ACCOUNTABILITY (1st ed. 2001); Rosa M. Lastra & Heba Shams, *Public Accountability in the Financial Sector*, *in* REGULATING FINANCIAL SERVICES AND MARKETS IN THE TWENTY FIRST CENTURY 165 (Eilís Ferran & Charles A.E. Goodhart eds., 2001); Luis Garicano & Rosa M. Lastra, *Towards a New Architecture for Financial Stability: Seven Principles*, 13 J. INT'L ECON. L. 597 (2010).

28. *See* Christina Parajon Skinner, *How Green Can Central Banking Be?*, 3 CCLS ENERGY & CLIMATE CHANGE L. INST. REV. 25 (2021). *See also* Skinner, *supra* note 2, at 1325–47 (discussing the Fed's powers specifically).

in view—a broad-based acceptance of sovereign divergence in climate policy but international convergence around shared governance norms—that this Part considers the brass tacks of central bank balance sheet policy (as an instrument of monetary policy), macroprudential supervision, and microprudential supervision. It draws on the recent experiences of the Fed, BOE, and ECB.

A. Balance Sheet Policy

A range of proposals and initiatives to use the central bank balance sheet to either drive or facilitate transition finance are underway at the BOE and ECB. These include various programs to buy green bonds, or to otherwise design asset purchase programs to prefer green over brown bonds (for example, via collateral requirements). Leaving aside the lack of a commonly accepted taxonomy on what constitutes green or brown (despite a number of efforts to advance in this direction in the EU and internationally),[29] the

29. See, for example, the EU Taxonomy Regulation which provides a classification system, establishing a list of environmentally sustainable economic activities with six environmental objectives: (1) Climate change mitigation (2) Climate change adaptation (3) The sustainable use and protection of water and marine resources (4) The transition to a circular economy (5) Pollution prevention and control (6) The protection and restoration of biodiversity and ecosystems. Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the Establishment of a Framework to Facilitate Sustainable Investment, and Amending Regulation (EU) 2019/2088, 2020 O.J. (L 198) 13, *available at* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852. In 2022 a revised text included, under strict conditions, specific nuclear and gas energy activities in the list of economic activities covered by the EU taxonomy. *See* Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards Economic Activities in Certain Energy Sectors and Delegated Regulation (EU) 2021/2178 as regards Specific Public Disclosures for those Economic Activities, 2022 O.J. (L 188) 1, *available at* https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022R1214. The International Sustainability Standards Board (ISSB) established at COP26 in November 2021 which aims to develop a unified set of standards for sustainability disclosures in the capital markets and is supported by the International Organization of Securities Commissions (IOSCO). *See About the International Sustainability Standards Board*, IFRS, https://www.ifrs.org/groups/international-sustainability-standards-board/ (last visited July 28, 2022); Press Release, IOSCO, IOSCO Welcomes ISSB's Publication of Sustainability Standards Exposure Drafts (Mar. 31, 2022), https://www.iosco.org/news/pdf/IOSCONEWS638.pdf. But there is no universally accepted definition of what constitutes a green asset or a brown asset. Kern Alexander and Rosa M. Lastra discuss in a paper titled "Banking Regulation and Environmental Sustainability" (companion to the one Lastra and Skinner presented at the IMF workshop review to in the first footnote) the recent consultation by the European Banking Authority (in the context of prudential supervision) with a view to developing a green supporting factor that would provide a lower risk weight for so-called 'green' loans. *See* EUR. BANKING AUTH., THE ROLE OF ENVIRONMENTAL RISKS IN THE PRUDENTIAL FRAMEWORK (2022), https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Discussions/2022/Discussion%20paper%20on%20the%20role%20of%20environmental%20risk%20in%20the%20prudential%20framework/1031947/Discussion%20paper%20on%20role%20of%20ESG%20risks%20in%20prudential%20framework.pdf.

issue of credit allocation is always contentious from both distributional and a market-discipline perspectives.[30]

For the BOE, these initiatives have mostly involved the greening of its corporate bond purchase scheme, which was introduced in 2016 to buy investment grade bonds from a wide range of U.K. companies.[31] The decision to engage in this manner of so-called green quantitative easing ("QE") was,[32] for the BOE, formally supported by U.K. law. The Bank of England's monetary policy committee ("MPC") has a primary responsibility to maintain price stability and a secondary objective to have regard to the government's economic program.[33]

In March 2021, the Chancellor of the Exchequer revised the MPC's remit to state that the Government's economic strategy included supporting the transition to a net zero economy. In particular, the Chancellor wrote that the MPC "remit [should] reflect the Government's economic strategy for achieving strong, sustainable and balanced growth that is also environmentally sustainable and consistent with the transition to a net zero economy."[34] Accordingly, in pursuit of the MPC's secondary objective, it now also has a de facto mandate to fashion its monetary policy in pursuit of low-carbon transition goals.[35] The Bank then adjusted its approach to corporate bond buying "to account for the climate impact of the issuers of the bonds we hold."[36]

The ECB takes climate change into account in its monetary policy framework following the July 2021 implementation of its new monetary policy strategy, which includes a Climate Change Action Plan (also related to the Strategy for Financing the Transition to a Sustainable Economy

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30. *See* Sara Dietz, *Green Monetary Policy Between Market Neutrality and Market Efficiency*, 59 COMMON MKT. L. REV. 395 (2022) (offering a critical analysis in the context of the ECB). We thank Sara Dietz for observations and comments on our paper. *See also* Isabel Schnabel, Member, Exec. Bd. of the ECB, Welcome Address at the ECB DG-Research Symposium: Climate Change, Financial Markets and Green Growth (June 14, 2021). Many argue (including one of us, Lastra) that tax is a better tool from the perspective of distributional justice.

31. *Greening our Corporate Bond Purchase Scheme (CBPS)*, BANK OF ENG., https://www.bankofengland.co.uk/markets/greening-the-corporate-bond-purchase-scheme (last visited June 19, 2021).

32. *See, e.g.*, YANNIS DAFERMOS ET AL., CAN GREEN QUANTITATIVE EASING (QE) REDUCE GLOBAL WARMING? (2018), https://feps-europe.eu/wp-content/uploads/downloads/publications/feps%20gperc%20policybriefgreenqe.pdf.

33. Bank of England Act 1998, c. 11, Part II, § 11(b) ("subject to" the maintenance of price stability, the MPC "shall . . . support the economic policy of Her Majesty's Government, including its objectives for growth and employment").

34. Letter from Rishi Sunak, Chancellor of the Exchequer, to Andrew Bailey, Governor, Bank of Eng. (Mar. 3, 2021) [hereinafter Sunak Letter A], https://www.bankofengland.co.uk/-/media/boe/files/letter/2021/march/2021-mpc-remit-letter.pdf?la=en&hash=C3A91905E1A58A3A98071B2DD41E65FAFD1CF03E.

35. *Id.*

36. *See* Camilla Hodgson et al., *Bank of England Given New Mandate to Buy 'Green' Bonds*, FIN. TIMES (Mar. 3, 2021), https://www.ft.com/content/f436d69b-2bf0-48cd-bb34-644856fba17f.

adopted by the European Commission).[37] As part of the new monetary policy strategy going forward, the ECB appears to believe that it must understand the extent to which climate change affects its primary mandate of price stability (in line with President Lagarde's recent speech) including the proper functioning of the transition mechanism.[38] The ECB also believes it must consider the extent to which it must take climate considerations into account as part of its secondary objective to support the economic policies in the Union according to section 2, Article 127 (1) of the TFEU and Article 3 of the TEU.[39]

This secondary objective of the ECB (a neglected mandate according to Jens van't Klooster and Nik de Boer)[40] was discussed during that same strategy review. The wording of Article 127(1) section 2 of the TFEU in combination with Article 3 of the TEU is broad: it includes employment, growth, protection, and improvement of the quality of the environment and several elements of social sustainability. Furthermore, Article 11 of the TFEU requires that "environmental protection requirements must be integrated into the definition and implementation of the Union's policies and objectives, in particular with a view to promoting sustainable

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37. *See* Press Release, Eur. Cent. Bank, ECB Presents Action Plan to Include Climate Change Considerations in Its Monetary Policy Strategy (July 8, 2021), https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1~f104919225.en.html*; see also* Press Release, Eur. Cent. Bank, ECB's Governing Council Approves Its New Monetary Policy Strategy (July 8, 2021), https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708~dc78cc4b0d.en.html; *The ECB's Monetary Policy Strategy Statement*, EUR. CENT. BANK, https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.en.html (last visited June 19, 2022); René Smits, *Elaborating a Climate Change-Friendly Legal Perspective for the ECB*, *in* SUSTAINABLE FINANCE—LEGAL ASPECTS (forthcoming) (manuscript at 9), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3913653; Schnabel, *supra* note 30, ¶¶ 16–20. The ECB has exclusive competence over monetary policy since its inception in 1999.

38. As stated in a recent paper written by Lastra et al., at the request of the European Parliament on the Transmission Protection Instrument, the ECB has introduced in the last few years a number of tools to address risks to the "monetary policy transmission mechanism" without properly defining such transmission mechanism, raising concerns about the objectives of unconventional tools in the light of the Treaty mandate. KERSTIN BERNOTH ET AL., THE ECB'S TRANSMISSION PROTECTION INSTRUMENT: A LEGAL & ECONOMIC ANALYSIS (2022), https://www.europarl.europa.eu/cmsdata/253891/QA-07-22-986-EN-N.pdf. Stefan Gerlach notes: "[T]he strength of the transmission varies naturally between euro area economies because of differences in economic and financial structures." *Letter: ECB Has to Avoid Mislabelling and Own Up to Its TPI Agenda*, FIN. TIMES (July 29, 2022), https://www.ft.com/content/211c0b48-f649-4ed0-8639-8e3b864179b7.

39. EUROPEAN CENTRAL BANK, ANNEX: DETAILED ROADMAP OF CLIMATE CHANGE-RELATED ACTIONS (2021), https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210708_1_annex~f84ab35968.en.pdf (establishing a detailed roadmap with a timeline to take concrete action). We thank Sara Dietz for observations on these points.

40. NIK DE BOER & JENS VAN'T KLOOSTER, THE ECB'S NEGLECTED SECONDARY MANDATE: AN INTER-INSTITUTIONAL SOLUTION 9–10 (2021), http://www.positivemoney.eu/wp-content/uploads/2021/10/The-ECBs-neglected-secondary-mandate_v6.0.pdf. A longer paper entitled: "The Paradox of the ECB's secondary mandate" is forthcoming in the *Journal of Common Market Studies*.

development."[41] Therefore, it was determined that these Treaty provisions already permitted the ECB to address climate change in its policies as long as they did not compromise the primary objective of price stability.[42]

The ECB has also, for the past few years, engaged in a version of green QE by, for example, using its funds to invest in the Bank for International Settlements' green bond fund.[43] Indeed, the ECB President has been vocal in her support of greening monetary policy:

> If we do not account for the impact of climate change on our economy, we risk missing a crucial part of the overall picture. This means that our job of preserving price stability must include further work on better understanding how climate change affects our role. We must incorporate climate change into everything we do: our models, data, projections and analyses. Ultimately, we need to ensure that our monetary policy accounts for the impact of climate change.[44]

In similar spirit, Isabel Schnabel, an ECB Board Member, suggested in June 2021 that the central bank would reconsider the allocation of asset purchases for its Corporate Sector Purchase Programme (CSPP) towards less carbon-intensive sectors of the economy or 'greener' firms.[45] And in July 2022 the Governing Council of the ECB decided "to take further steps to include climate change considerations in the Eurosystem's monetary policy framework" and "decided to adjust corporate bond holdings in the Eurosystem's monetary policy portfolios and its collateral framework, to introduce climate-related disclosure requirements and to enhance its risk management practices."[46]

In our view, however, the definition of green or brown assets or firms is a decision for the political authorities, not for the ECB. And of course,

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41. TFEU, *infra* note 145, at 53.

42. *See* Chiara Zilioli & Michael Ioannidis, *Climate Change and the Mandate of the ECB: Potential and Limits of Monetary Contribution to European Green Policies*, 59 COMMON MKT. L. REV. 363 n.4 (2022).

43. Press Release, Eur. Cent. Bank, ECB to Invest in Bank for International Settlements' Green Bond Fund (Jan. 25, 2021), https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210125~715adb4e2b.en.html#:~:text=With%20this%20investment%2C%20the%20ECB,and%20other%20environmentally%20friendly%20projects.

44. *See* Christine Lagarde, *Painting the Bigger Picture: Keeping Climate Change on the Agenda*, EUR. CENT. BANK BLOG (Nov. 7, 2022), https://www.ecb.europa.eu/press/blog/date/2022/html/ecb.blog221107~1dd017c80d.en.html.

45. *See* Schnabel, *supra* note 30, ¶¶ 47–48.

46. Press Release, Eur. Cent. Bank, ECB Takes Further Steps to Incorporate Climate Change Into Its Monetary Policy Operations (July 4, 2022), https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.pr220704%7E4f48a72462.en.html.

the 2022 war in Ukraine presents several challenges when it comes to reliance on 'green' energy, transition to net zero, and energy security.[47]

In contrast to the ECB and the BOE, the Fed does not have existing monetary policy authority to address climate change. As such, relative to the BOE and ECB, the Fed is far more constrained. The Fed's dual mandate refers to both price stability and maximum employment as goals on equal footing.[48] There is no aspect of that mandate which requires the Fed to use its monetary policy tools to ease the path of the government's economic agenda.[49]

Moreover, Section 14 of the Federal Reserve Act does not authorize the Fed to buy private bonds of any kind in connection with an asset purchase program pursuant to which bonds are bought in the open market.[50] It bears emphasis that the Fed's Covid-era corporate bond purchase facility was authorized under a different section, limited to exigent circumstances, and for the purpose of addressing an acute liquidity crisis in the financial sector, per the terms of the Federal Reserve Act.[51] It remains legally unclear, however, whether the Board of Governors could create policy instructing or requesting Federal Reserve Banks to prefer buying 'green' Treasury bonds over standard U.S. Treasuries (or mortgaged-backed securities) when engaging in open market operations, if the U.S. Treasury were to one day issue them.

Indeed, to the extent the Fed has any legal discretion to use monetary policy toward green goals, it resides with the Reserve Banks' collateral policy.[52] For instance, the Reserve Banks are not specifically prohibited by the Federal Reserve Act from fashioning discount window lending policy or emergency liquidity facilities that prefer (or require) green bonds as collateral over brown ones. Politics, however, may impose a different manner of constraint. Historically, the Reserve Banks' efforts to use collateral policy to reinforce value-laded judgments about where credit should flow (and where it should not) saddled the Fed with public controversy and was not

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47. Mathis & Krukowska, *supra* note 19.

48. Federal Reserve Act § 2A (1977), 12 U.S.C. § 225a.

49. While the long-standing implicit understanding among central bankers had been that price stability was the de facto 'primary mandate'—given the challenges of securing maximum employment in the absence of stable prices—that notion has been contested in recent years as some members of the Board of Governors advocated a more forceful policy stance on the employment arm of the dual mandate. *See* Christina Parajon Skinner, *Capture the Fed*, *in* POPULISM AND THE FUTURE OF THE FED 63–79 (James A. Dorn ed., 2022) (discussing the history of the dual mandate and the ways in which the Fed's August 2020 monetary policy framework revision served as the basis for re-elevating or re-shaping the employment objective).

50. Federal Reserve Act § 14, 12 U.S.C. § 353.

51. *Id.* § 13(3) (1932), 12 U.S.C. § 343.

52. *Id.* § 10B (1932), 12 U.S.C. § 347(b); *Id.* § 13(3) (1932), 12 U.S.C. § 343.

ultimately looked favorably upon by members of Congress.[53] More importantly perhaps, central banks require a clear legal mandate to use their balance sheets to pursue sustainability; as we will discuss, this is necessary to the democratic and legal legitimacy of any such policy. Accordingly, for the Federal Reserve Banks to lawfully move forward in the way the BOE and ECB have done or discussed would require congressional approval.

Even where a clear legal mandate exists, deploying the balance sheet toward greening purposes can pose longer term challenges for the legitimacy and credibility of a central bank's commitment—and ability—to pursue price stability especially during inflationary periods.[54] This is so for two main reasons. The first pertains to the democratic legitimacy of unelected technocrat central bankers making decisions about winners and losers in the economy.[55] Where central banks use policy tools to affect the flow and cost of funding in the economy, effectively, they are substituting their judgment about which sectors of the economy receive market-rate funding and which do not. Such decisions are more properly made by democratically responsive institutions, namely, the legislature.

Second, green balance sheet policies may distort financial markets by introducing allocative inefficiencies. As one of us (Professor Skinner) has elsewhere written, using balance sheet policy to pursue green goals not only directly channels money toward green businesses, it also "induces a so-called 'greenium' where, observing the imprimatur of the central banks and thus presuming where the regulatory winds are blowing, the market allocates credit to these 'green' companies on terms much more favorable than the 'brown ones.'"[56] How will central banks decide which bond purchases favor allocative efficiency—and in what amounts—and how will they satisfy their burden of proof in demonstrating as much before the public and the legislature?

These market distortions may be especially likely to arise in jurisdictions like the U.S. where there are no established criteria for deciding which bonds should be considered green versus brown.[57] Nor is there, even as a starting point, an agreed approach to deciding who would make such

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53. *See* Skinner, *supra* note 2, at 1351.

54. *See* Skinner, *supra* note 1, at 257–58; Skinner, *supra* note 2, at 1309.

55. ECONOMIC AFFAIRS COMMITTEE, *supra* note 21, at 31 (reporting on the dangers of picking winners and losers).

56. Christina Parajon Skinner, *The US Federal Reserve: Policy Initiatives and Legal Constraints in Addressing Climate Change*, *in* INSTITUTO AFFARI INTERNZTIONALI, PAVING THE WAY FOR GREENER CENTRAL BANKS: CURRENT TRENDS AND FUTURE DEVELOPMENTS AROUND THE GLOBE 47, 51 (Nicola Bilotta and Dabirzio Botti eds., 2022).

57. *See* Michael Gambro & Michael Ruder, *Challenges in Standardization of Green Bonds: The US Perspective*, IFLR (July 27, 2021), https://www.iflr.com/article/2a646s6e09807mimb1wxs/challenges-in-standardisation-of-green-bonds-the-us-perspective.

determinations, how to verify them as accurate, and how to hold these decisionmakers accountable and free from conflicts of interest. As a result, even where the legal authority to engage in green monetary policy is established, in practice, green balance sheet policies have become politically contentious.

The political ramification of green balance sheet policy is apparent in the House of Lords' inquiry into QE. In their final report, the Economic Affairs Committee ("EAC") cited oral evidence that the BOE's new so-called green mandate, referenced above, "puts the central bank in the position of choosing and making value judgments about green winners and losers. Deciding what is and is not in the green perimeter seems like a difficult task to take on with objectivity. The genie is out of the bottle at this point, but the discretion at least is a bit unhelpful to independence."[58] Likewise for the Fed and the ECB, the possibility of central-bank-directed credit allocation has been incredibly divisive and has led to reputational challenges.[59]

Overall, these experiences suggest that it is critical to the institutional integrity of central banks to refrain from eliding monetary policy with fiscal policy. Insofar as green balance sheet policy effectuates credit policy, such initiatives should be reserved for fiscal policy makers who are more democratically equipped to make the associated value judgments and assessments about resource and goal trade-offs.

B. Macroprudential Policy and Supervision

Although the balance sheet is perhaps the most powerful of central banking tools, much of the central banking work on climate change has, to date, unfolded in the financial stability policy space and thus rested on the central bank's financial stability mandate.[60] This work started early on in the conversation about central banks and climate change. In November 2020,

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58. ECONOMIC AFFAIRS COMMITTEE, *supra* note 21, at 31.

59. *The Greening of the Federal Reserve: Powell Endorses Bank Stress Tests to Allocate Capital for Climate Policy*, WALL ST. J. (Jan. 11, 2022), https://www.wsj.com/articles/the-greening-of-the-federal-reserve-jerome-powell-climate-11641941000.

60. *See* BD. OF GOVERNORS OF THE FED. RSRV. SYS., FINANCIAL STABILITY REPORT 55 (2022), https://www.federalreserve.gov/publications/files/financial-stability-report-20221104.pdf; EUR. CENT. BANK & EUR. SYSTEMIC RISK BD., THE MACROPRUDENTIAL CHALLENGE OF CLIMATE CHANGE (2022), https://www.esrb.europa.eu/pub/pdf/reports/esrb.ecb.climate_report202207~622b791878.en.pdf; Sam Woods, Deputy Governor for Prudential Regul. & Chief Exec. Officer of the Prudential Regul. Auth., Climate Capital, Speech (May 24, 2022), https://www.bankofengland.co.uk/speech/2022/may/sam-woods-speech-on-the-results-of-the-climate-bes-exercise-on-financial-risks-from-climate-change; Celso Brunetti et al., *Climate-related Financial Stability Risks for the United States: Methods and Applications*, BD. OF GOVERNORS OF THE FEDERAL RSRV. SYS., FINANCE & ECON. DISCUSSION SERIES (July 2022), https://www.federalreserve.gov/econres/feds/climate-related-financial-stability-risks-for-the-united-states.htm; *see also* sources cited *supra* note 5.

the FSB investigated various channels through which climate-related risks would impact the financial system in destabilizing ways.[61]

Extending the analysis first sketched out by Mark Carney, this work focused principally on the potential physical risks associated with climate change—the impact on asset prices from physical weather events—and transition risks—the impact on asset prices and business viability flowing from policies requiring a transition away from certain forms of energy.[62] Since that time, numerous speeches and research papers have asserted climate change as a financial stability risk.[63] And central banks established workstreams to explore a potential nexus between climate change and financial stability, which sought to develop new macroprudential tools for preventing the fallout from 'black swan' type climate events or cliff-edge transition policies.[64]

While the bulk of this communication with the public[65]—and amid central banking expert circles—assumes that there is at least some authority for central banks to address climate change as a financial stability risk, as is the case with balance sheet policy, the limits of this macroprudential authority vary widely across each jurisdiction. In particular, whether a central bank can legitimately develop macroprudential climate policies depends on two factors: (1) the nature of the central bank's financial stability mandate (i.e., remit); and (2) the nature of the balance sheets and business model of the systemically important banks in the jurisdiction. Again, the Fed, BOE, and ECB illustrate the possibility of diverging approaches that appropriately reflect their diverging legal frameworks, banking/financial sectors, and economies.

Consider first the BOE, which has arguably gone the furthest in refitting its financial stability policy tools for climate change purposes. It has, for example, innovated a new stress test that is more exploratory in nature—

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61. FIN. STABILITY BD., THE IMPLICATIONS OF CLIMATE CHANGE FOR FINANCIAL STABILITY (2020), https://www.fsb.org/2020/11/the-implications-of-climate-change-for-financial-stability/.

62. *Id.*

63. *See, e.g.*, Tobias Adrian, Counsellor & Director, Monetary & Cap. Mkts. Dep't., IMF, Opening Remarks at the IMF Policy Dialogue on Climate-Related Financial Risks and Green Finance in Asia and the Pacific: Climate Finance and Financial Stability: Some Areas for Further Work (June 1, 2022), https://www.imf.org/en/News/Articles/2022/06/01/sp060122-climate-finance-dialogue-opening-remarks-by-tobias-adrian; Fernando Restoy, Chairman, Fin. Stability Inst., Speech: The Role of Prudential Policy in Addressing Climate Change (Oct. 22, 2021), https://www.bis.org/speeches/sp211008.htm.

64. *See* Lael Brainard, Governor, Bd. of Governors of the Fed. Rsrv. Sys., Remarks at "Transform Tomorrow Today" Ceres 2021 Conference: Financial Stability Implications of Climate Change (Mar. 23, 2021), https://www.federalreserve.gov/newsevents/speech/brainard20210323a.htm.

65 . *See* ROSA M. LASTRA & SARA DIETZ, COMMUNICATION IN MONETARY POLICY, MONETARY DIALOGUE PAPERS (European Union 2022), https://www.europarl.europa.eu/RegData/etudes/STUD/2022/703339/IPOL_STU(2022)703339_EN.pdf (holding the importance of central bank communication).

the Climate Biennial Exploratory Scenario ("CBES").[66] This innovation has allowed the BOE to consider a fuller range of possible implications from climate change. Importantly to that end, the CBES is unmoored from the traditional time horizon adopted by the post-2008 supervisory stress tests, which were considered too short to capture the range of risks associated with climate change risk.[67] The CBES has also given the FPC more latitude to explore asset price movements not immediately apparent from a current balance sheet snapshot.[68]

For the BOE, this expanded view of financial stability risk was again supported by its legal framework. The Banking Act 2009 states as one of the Bank's primary objectives "to protect and enhance the stability of the financial system of the United Kingdom."[69] That is to say that Parliament gave the BOE an express responsibility to address financial stability risks. Implicitly, Parliament also gave the BOE the authority to define or consider what a financial stability risk is—after all, Parliament did not itself offer a definition and instead gave the Bank's Court of Directors the responsibility to "determine the Bank's strategy in relation to the Financial Stability Objective."[70] Parliament clearly intended for that financial stability strategy to be dynamic, providing that the Bank's Court should "from time to time review, and if necessary revise, the strategy."[71]

Perhaps most importantly, Parliament located the U.K.'s macroprudential authority, the FPC, within the BOE.[72] It made that statutory body responsible for the "identification of, monitoring of, and taking of action to remove or reduce, systemic risks with a view to protecting and enhancing the resilience of the UK financial system."[73] The FPC thus has the legal authority to, among other things, design new stress tests in order to fulfill that responsibility.[74]

Further, the FPC is statutorily responsible for adjusting its interpretation of what does or might constitute a financial stability risk based on the Government's economic policy and outlook.[75] Annually, by law, His

66. *Key Elements of the 2021 Biennial Exploratory Scenario: Financial Risks from Climate Change*, BANK OF ENG. (June 8, 2021), https://www.bankofengland.co.uk/stress-testing/2021/key-elements-2021-biennial-exploratory-scenario-financial-risks-climate-change.

67. *Id.* at nn.67–68.

68. *Id.*

69. Banking Act 2009, c. 1, § 4(4) (Eng.).

70. Bank of England Act 1998, c. 11, § 9A(1)(a).

71. *Id.* at § 9A(1)(b).

72. *Id.* at § 9(B)(1).

73. *Id.* at § 9C(2).

74. *See id. Stress Testing*, BANK OF ENG., https://www.bankofengland.co.uk/stress-testing (last visited July 29, 2022).

75. *See* Bank of England Act 1998, c. 11, § 9C(2); *Financial Stability*, BANK OF ENG., https://www.bankofengland.co.uk/financial-stability (last visited July 29, 2022).

Majesty's Treasury ("HMT") is instructed to set out for the FPC the government's economic agenda including its understanding of the meaning of "financial stability."[76] Pursuant to that authority, in its March 2021 remit letter to the FPC, the Government underlined its views on climate:

> As the world recovers from the pandemic, we also face a tipping point for our climate. The shift to a world where we are at net zero will mean systemic changes across all parts of our economy. This includes delivering a financial system which supports and enables the transition to an environmentally sustainable net zero economy by expanding the supply of green finance, and that is resilient to the physical and transition risks that climate change presents.[77]

Accordingly, because Parliament has both expressly instructed the BOE to pursue financial stability goals in a dynamic and evolving fashion and because it has authorized the BOE to accept a definition of financial stability as established by the Government—its efforts to expand the macroprudential toolkit with the CBES and perhaps otherwise are legally justifiable—and arguably required.

In contrast, there are other central banks—like the Fed—that are more restrained from expanding their macroprudential toolkit to address financial stability risks, like climate change, which are subject to uncertainty caused by human and scientific adaptation. The Fed, quite unlike the FPC, lacks an express mandate to pursue macroprudential policy.[78] While Congress

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76. *See* Letter from RT Hon. Jeremy Hunt MP, Chancellor of the Exchequer, to Andrew Bailey, Governor, Bank of Eng., Financial Pol'y Comm. Remit & Recommendations: Autumn Statement 2022, (Nov. 17, 2022), https://www.gov.uk/government/publications/remit-and-recommendations-for-the-financial-policy-committee-autumn-statement-2022/financial-policy-committee-remit-and-recommendations-autumn-statement-2022 ("The Committee should also continue to regard risks from climate change as relevant to its primary objective. Climate change may pose risks to the stability of the UK financial system, including physical risks, and transition risks, resulting from a transition towards a net zero economy that is sudden, disorderly or more generally fails to appropriately balance environmental and economic factors.").

77. Letter from Rishi Sunak, Chancellor of the Exchequer, to Andrew Bailey, Governor, Bank of Eng. (Mar. 3, 2021) [hereinafter Sunak Letter B], https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/965778/FPC_Remit_and_Recommendations_Letter_2021.pdf.

78. Though some, including one of us, Lastra, argue that financial stability is implied or implicit as an objective of its supervisory and lender of last resort responsibilities, financial stability and "safety and soundness" are close cousins. *See* LASTRA, *supra* note 24, at 126 (noting that "[f]inancial stability has long been an elusive idea, difficult to define in positive terms"); *see also* Thomas C. Baxter, Jr., Gen. Couns. & Exec. Vice President Fed. Rsrv. Bank of N.Y.C., Keynote Speech at BIS Central Bank Legal Experts Meetings: Bank, Resolution Experiences in the United States—the Measures, the Challenges, the Way Ahead (Feb. 5, 2016) (transcript on file with authors). Baxter argues that financial stability can be seen in the penumbra of the Federal Reserve Act, as part of the Fed's legal mandate (derivative). He writes: "The answer is found in the penumbra of our monetary policy mandate in Section 2A of the Federal Reserve Act(…)[dual mandate] . . . Because you may not achieve maximum employment or

considered supplying an explicit financial stability mandate to the Fed within the Dodd-Frank Act, like Parliament gave the BOE in the Financial Services and Markets Act, the legislative history shows that it intentionally chose not to do so.[79] This suggests that the Fed's role in regard to financial stability is limited to the traditional financial stability functions historically understood by the Federal Reserve Act, such as conducting microprudential supervision and acting as lender of last resort in times of acute economic crises that threaten liquidity shortages in the financial sector.

These dynamics have impacted the Fed's policy choices in the macroprudential supervisory space. While other central banks have forged ahead with climate stress tests or scenario analysis,[80] the Fed—perhaps in recognition of the limits of its statutory authority—has chosen to pilot a voluntary climate scenario analysis in 2023.[81] Not only was this exercise presented as voluntary to the banking industry, the Fed has also been quite clear that the exercise is experimental "and there will be no capital or supervisory implications from the pilot."[82]

Ultimately, the scope of a central bank's authority to use its policy tools to address financial stability risk turns on the definition of "financial stability." In the U.S., because there is no definition supplied by Congress, arguably, the Fed is constrained in how far it can rely on the term (and revise it) to expand its own jurisdiction. For the Fed to assume the authority to

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stable prices in an environment of financial instability, the Federal Reserve has the derivative objective of financial stability. Moreover, financial stability is also a component of the Federal Reserve's activity as a prudential supervisor, and Dodd-Frank expanded the Federal Reserve's responsibility in a number of ways for systemic non-bank financial companies, bank holding companies, and financial market utilities." *Id.* at 2. *See also id.* ("The strengthening of these prudential standards makes systemically important firms more resilient and reduces the probability of disorderly failure, thus enhancing financial stability.").

79. *See* RENEE HALTOM & JOHN A. WEINBERG, DOES THE FED HAVE A FINANCIAL STABILITY MANDATE? (Fed. Rsrv. Bank of Richmond 2017), https://www.richmondfed.org/-/media/richmondfedorg/publications/research/economic_brief/2017/pdf/eb_17-06.pdf.

80. FIN. STABILITY BD., SUPERVISORY AND REGULATORY APPROACHES TO CLIMATE-RELATED RISKS, INTERIM REPORT (2022), https://www.fsb.org/wp-content/uploads/P290422.pdf.

81. The banks that have volunteered for the pilot exercise are Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, Morgan Stanley, and Wells Fargo. *See* BD. OF GOVERNORS OF THE FED. RSRV. SYS., PILOT CLIMATE SCENARIO ANALYSIS (CSA) EXERCISE: PARTICIPANT INSTRUCTIONS (2023), https://www.federalreserve.gov/publications/climate-scenario-analysis-exercise-instructions.htm.

82. Press Release, Bd. of Governors of the Federal Reserve Sys., Federal Reserve Board Announces that Six of the Nation's Largest Banks will Participate in a Pilot Climate Scenario Analysis Exercise Designed to Enhance the Ability of Supervisors and Firms to Measure and Manage Climate-Related Financial Risks (Sept. 29, 2022), https://www.federalreserve.gov/newsevents/pressreleases/other20220929a.htm. ("The climate scenario analysis exercise, on the other hand, is exploratory in nature and does not have capital consequences. By considering a range of possible future climate pathways and associated economic and financial developments, scenario analysis can assist firms and supervisors in understanding how climate-related financial risks may manifest and differ from historical experience.").

define financial stability—thereby conferring on itself a mechanism for increasing its own power—presents some governance challenges. Principally, it frustrates the Fed's accountability: the lack of statutory criteria for what constitutes a financial stability risk confounds congressional and public scrutiny of whether the Fed has appropriately set the parameters of the phrase and likewise whether the Fed has adequately justified revisions or extensions of it.[83] This will no doubt be a challenge for the Fed and the U.S. Congress to address in coming years—in regard to climate change and all manner of uncertain, long-horizon risks.

In the U.K. the lines of accountability are clearer, as discussed.[84] In supplying a rather open-ended financial stability mandate to the FPC, Parliament conferred ex ante the power on the BOE to shape and revise "financial stability" as a category of actionable risk. HMT thus has the authority to fill the bucket of financial stability risk, categorically, thereby deploying the Bank's intellectual energy and policy tools in a democratically legitimate way. While this may not be the ideal model for the U.S. system to adopt, the comparison is instructive of how the Fed's macroprudential authority is relatively more muted than other jurisdictions from a legal and democratic legitimacy perspective.

As another important point of contrast, the Fed is not the United States' macroprudential authority as the FPC is for the U.K. Rather, the Dodd-Frank Act, in Title I, created a new interagency council, the Financial Stability Oversight Council ("FSOC"), to spearhead that work.[85] Congress thus tasked the FSOC with considering whether there are financial institutions or activities that pose new forms of financial stability risk—not the Fed in the first instance. Finally, unlike the arrangement in the U.K., in the U.S. the Fed has no similar obligation to follow instructions from the U.S. Treasury regarding what constitutes a financial stability risk and indeed doing so would flout several decades of central banking custom that separates the White House, the Treasury, and the Fed.[86]

The Fed, then, is limited in how far it can expand its interpretation of what constitutes a financial stability risk beyond the traditional understanding of solvency or liquidity risks to large, systemically important institutions. Presently, climate change does not appear to pose either solvency or liquidity risks to this set of institutions. The U.S. SIFIs are geographically and sectorally diverse; and after the 2008 global financial crisis they are generally well capitalized. For these reasons, one cannot

83. *See* Skinner, *supra* note 2, at 1313–14.

84. *See, e.g.*, Bank of England Act 1998, c. 11, § 9A(1)(b).

85. 12 U.S.C § 5321.

86. *See* Michael Salib & Christina Parajon Skinner, *Executive Override of Central Banks*, 108 GEO. L.J. 905 (2020).

objectively connect climate-related shocks (physical or transition) to a discernable threat to the health of any of these institutions' solvency or liquidity upon review of their balance sheet exposures.[87]

Precisely for this reason, several pieces of research within the Federal Reserve System have begun to question whether physical risks pose discernable stability risk to the U.S. financial system.[88] Where transition risk is concerned, setting aside the question of whether the U.S. Congress will impose cliff-edge-like transition policies (which presently seems unlikely), financial institutions are already demonstrably taking efforts to trim their exposure to heavy carbon producers and enhance climate related risk-management procedures.[89] Ultimately, though, that the Fed may well take a different view of climate and financial stability from other jurisdictions does not imply that it is agnostic about climate change; it simply acknowledges the divergence in its legal framework and the particular strengths and size of the U.S. banking sector.

The ECB seems to present a case that is somewhere in the middle of the Fed and the BOE. In the EU, the European Central Bank[90] shares macroprudential authority with the European System Risk Board ("ESRB") [91] and the relevant national authorities (financial stability councils).[92] For its part, the ECB will likely continue to consider climate change from the perspective of the direct and indirect effects on price stability (its primary objective according to Article 127 (1) of the TFEU) and from the perspective of its effects on financial stability (which remains a

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87. *See* Skinner, *supra* note 2, at 1317–20.

88. *See, e.g.*, Kristian Blickle & Donald Morgan, *Climate Change and Financial Stability: The Weather Channel*, FED. RSRV. BANK OF N.Y.C.: LIBERTY STREET ECON. (Apr. 4, 2022), https://libertystreeteconomics.newyorkfed.org/2022/04/climate-change-and-financial-stability-the-weather-channel/.

89. *See* Sarah E. Light & Christina P. Skinner, *Banks and Climate Governance*, 121 COLUM. L. REV. 1895 (Oct. 18, 2021). *But see* DANIEL O. BELTRAN ET AL., *What Are Large Global Banks Doing About Climate Change?* (Bd. of Governors of the Federal Reserve Sys., Int'l Finance Discussion Papers 1368, 2023), https://www.federalreserve.gov/econres/ifdp/files/ifdp1368.pdf.

90. The SSM (Single Supervisory Mechanism) with the ECB at the centre was established as the first pillar of the Banking Union in 2014. *See* LASTRA, *supra* note 24, at 355–56.

91. The ESRB was established on the basis of recommendations from the so-called De Larosière Report, bearing in mind the distinction between the EU area—over which the ESRB would have jurisdiction—and the Eurozone—over which the ECB has jurisdiction. DE LAROSIÈRE GROUP, THE HIGH-LEVEL GROUP ON FINANCIAL SUPERVISION IN THE EU (2009), https://ec.europa.eu/economy_finance/publications/pages/publication14527_en.pdf; Council Regulation 1024/2013, 2013 O.J. (L 287) 63. *See also* Goodhart & Lastra, *supra* note 23, at 10, 21–22. Notably, however, the ESRB does not have binding decision-making authority. Article 5 of the SSM Regulation sets out the ECB's macroprudential tools. Additionally, "the CRD IV/CRR includes a number of macroprudential instruments, such as counter-cyclical capital buffers, systemic risk, buffers and capital surcharges." Rosa M. Lastra, *The Macroprudential Approach: Policy, Supervision or Regulation?*, MACROPRUDENTIAL MATTERS (Oct. 25, 2021), https://macroprudentialmatters.com/the-macroprudential-approach-policy-supervision-or-regulation/; *see also* LASTRA, *supra* note 24, at 389.

92. *See* Lastra, *The Macroprudential Approach, supra* note 91; *see also* Goodhart & Lastra, *supra* note 23, at 39.

contributory task/objective of the ECB according to the now obsolete language of Article 127 (5) of the TFEU).

Overall, the legitimacy of central bank pursuits of climate change goals through the use of financial stability tools depends on whether there is an express financial stability mandate from the legislature; whether the central bank is legally required to have regard to the executive branch's goals for climate or sustainability; and whether the banking sector is already relatively resilient against physical or transition risk. If, as in the case of the U.S., these factors suggest there is no necessary role for the central bank to act, doing so regardless might suggest that the central bank's action is politically motivated or unduly responsive to an executive branch agenda.

C. Microprudential Supervision

The third major area of central bank policy on climate change concerns microprudential supervisory approaches to assessing firm-level resilience to climate-related risks. Here, each of the three jurisdictions' relevant laws all generally afford a similar amount of discretion to the authorities regarding how they may supervise banks for safety, soundness, and good governance. These laws include the Bank Holding Company Act in the U.S., the Bank of England Act and the Financial Services and Markets Act ("FSMA") in the U.K., and the Single Supervisory Mechanism Regulation ("SSMR") in conjunction with the Capital Requirements Regulation, the Capital Requirements Directive CRD IV and other legislative instruments in the EU.[93]

As in other areas, the Bank of England has developed its microprudential supervisory policies considerably toward climate goals. The Prudential Regulation Authority ("PRA") has issued formal supervisory statements as well as informal so-called Dear CEO letters. In 2019, the PRA set initial climate related expectations for U.K. deposit takers, asking firms to incorporate "financial risks from climate change in their governance arrangements . . . [and] financial risk management practice[s]," to begin using longer term scenario analysis" to identify climate risks, and to develop methods for disclosing climate risks to the public.[94] More recently, in January 2022, the PRA sent a letter to the CEOs of U.K. deposit takers underscoring the importance of these expectations and noting that

93 . BASEL COMM. ON BANKING SUPERVISION, PRINCIPLES FOR THE EFFECTIVE MANAGEMENT AND SUPERVISION OF CLIMATE-RELATED FINANCIAL RISKS (2022), https://www.bis.org/bcbs/publ/d530.pdf.

94 . BANK OF ENG. PRUDENTIAL REG. AUTH., ENHANCING BANKS' AND INSURERS' APPROACHES TO MANAGING THE FINANCIAL RISKS FROM CLIMATE CHANGE (2019), https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/supervisory-statement/2019/ss319.

henceforth climate-related financial risks would formally be incorporated into the PRA's "core supervisory approach."[95] The PRA could thus in theory increase capital charges under its Pillar 2 capital framework for firms assessed to have significant exposure to climate related financial risks as early as this year.[96]

In the EU, the ECB has outlined similarly forward leaning supervisory approaches to climate related risks.[97] It bears noting that the supervisory relevance of climate change and other environmental considerations for the ECB[98] and for the European Banking Authority[99] reflects a broader trend around climate change and bank regulation in Europe.[100] In March 2022, the ECB published its report on banks' progress towards transparent disclosure of their climate related and environmental risk profiles.[101] As stated in the executive summary: "[R]egulation of climate-related and environmental risk disclosures is expected to become increasingly stringent and to have a very clear impact on banks' disclosures in the coming years."[102]

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95. Letter from David Bailey, Exec. Dir., UK Deposit Takers, and Melanie Beaman, Dir., UK Deposit Takers, to Chief Exec. Officer, UK Deposit Takers (Jan. 12, 2022), https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2022/january/uk-deposit-takers-2022-priorities.pdf?la=en&hash=C4AF2E8171C532EF391CF8378BEB4E94B7738BE5&fbclid=IwAR3z1b7FnHgTxXaScoYSC-jlEOHs6kM2MsQzBC9uxQPliTCSXdr1amxstM8.

96. Pillar 2 refers to capital requirements as articulated by the Basel regime for international banking standards. BANK FOR INT'L SETTLEMENTS, BASEL COMMITTEE ON BANKING SUPERVISION REFORMS – BASEL III, https://www.bis.org/bcbs/basel3/b3summarytable.pdf (last visited Apr. 13, 2023).

97. Since the advent of the Banking Union, the ECB has exclusive competence for the supervision of significant credit institutions in the euro area. It also has supervisory responsibilities over the credit institutions of countries that have entered into close cooperation with the SSMR (Bulgaria and Croatia). *See* LASTRA, *supra* note 24, at 363.

98. *See* EUR. CENT. BANK, GUIDE ON CLIMATE-RELATED AND ENVIRONMENTAL RISKS: SUPERVISORY EXPECTATIONS RELATING TO RISK MANAGEMENT AND DISCLOSURE (2020), https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf.

99. The EBA is one of the three European Supervisory Authorities, aimed at ensuring consistent prudential regulation and supervisory practices across the EU banking sector. *See* LASTRA, *supra* note 24, at 383, 399–400; THE ROLE OF ENVIRONMENTAL RISKS IN THE PRUDENTIAL FRAMEWORK 10 (Eur. Banking Auth., Discussion Paper No. EBA/DP/2022/02, 2022), https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Discussions/2022/Discussion%20paper%20on%20the%20role%20of%20environmental%20risk%20in%20the%20prudential%20framework/1031947/Discussion%20paper%20on%20role%20of%20ESG%20risks%20in%20prudential%20framework.pdf ("The EBA encourages further developments in the use of the mechanisms in the Pillar 1 framework [regarding supervision] to appropriately capture environmental risks.").

100. *See generally* Kern Alexander & Paul Fisher, *Banking Regulation and Sustainability* (Nov. 5, 2018) (unpublished manuscript), https://ssrn.com/abstract=3299351; EUR. BANKING AUTH., *supra* note 29 (offering a recent consultation by the EBA).

101. *See* EUR. CENT. BANK, SUPERVISORY ASSESSMENT OF INSTITUTIONS' CLIMATE-RELATED AND ENVIRONMENTAL RISKS DISCLOSURES: ECB REPORT ON BANKS' PROGRESS TOWARDS TRANSPARENT DISCLOSURE OF THEIR CLIMATE-RELATED AND ENVIRONMENTAL RISK PROFILES (2022), https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.ECB_Report_on_climate_and_environmental_disclosures_202203~4ae33f2a70.en.pdf.

102. *Id.* at 2.

The ECB has also stated that it will continue to assess the climate risks embedded in its risk assessments.[103]

In comparison, the Fed has again been more reserved in its approach to microprudential supervision of climate risk. It has always acknowledged that banks' management of credit risk falls within its purview as a bank supervisor.[104] This, as the Chair recently implied, may well include supervision of climate risks to the extent those risks become credit risks.[105] Still, the Fed's determination of what, in practice, this will mean for its supervisory approach remains in process.[106] It appears that *public law* may become the operative constraint on the Fed's expansion of its climate-focused microprudential supervision.

In this respect, the U.S. provides a good illustration of how public law can limit a central bank in the climate space even if central-bank-specific law does not. Although the "safety and soundness" provision of the Bank Holding Company Act may be interpreted broadly, the Administrative Procedure Act ("APA") applies to all administrative agencies, including presumably the Fed when it acts as a regulator and supervisor, and thus renders such rules judicially reviewable.[107] This means that any new capital-

103. *See* EUR. CENT. BANK, GUIDE ON CLIMATE-RELATED AND ENVIRONMENTAL RISKS 2, 3 (2020), https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf; *see also* EUR. CENT. BANK, 2022 CLIMATE RISK STRESS TEST (2022), https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.climate_stress_test_report.20220708~2e3cc0999f.en.pdf. Furthermore, the ECB's recent thematic review of climate-related and environmental risks strategies identifies good practices originating from a range of institutions across various business models to meet the supervisory expectations set out in this 2020 ECB Guide on climate-related and environmental risks. *See* ECB/ESRB PROJECT TEAM ON CLIMATE RISK MONITORING, CLIMATE RELATED RISK AND FINANCIAL STABILITY (2021), https://www.esrb.europa.eu/pub/pdf/reports/esrb.climateriskfinancialstability202107~79c10eba1a.en.pdf. In November 2022, the ECB also published a compendium of good practices related to strategy-setting, governance and risk appetite, as well as risk management. *See* EUR. CENT. BANK, THEMATIC REVIEW ON CLIMATE AND ENVIRONMENTAL RISKS 2022 – FINAL RESULTS (2022), https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.221102_presentation_slides~76d2334552.en.pdf. *See also* Kern Alexander & Rosa Lastra, *International Banking Regulation and Climate Change*, OXFORD BUS. L. BLOG (Jan. 9, 2023), https://blogs.law.ox.ac.uk/blog-post/2023/01/international-banking-regulation-and-climate-change (discussing the ECB's incorporation of "climate risks into risk management and supervision and stress testing").

104. *See* FED. RSRV. BANK OF S.F., WHAT IS THE FED: SUPERVISION AND REGULATION, https://www.frbsf.org/education/teacher-resources/what-is-the-fed/supervision-regulation/ (last visited Feb. 26, 2023).

105. *See* Powell, *supra* note 17, ¶ 8.

106. *See* Bao Nguyen, *US Financial Regulators Signal That They Will Use Their Supervisory Authority to Press Climate Agenda*, SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP (Nov. 3, 2021), https://www.skadden.com/insights/publications/2021/11/us-financial-regulators-signal-that-they-will-use-their-supervisory-authority.

107. *See What Specific Steps Does the Board Take to Issue a Regulation?*, BD. OF GOVERNORS OF THE FED. RSRV. SYS., https://www.federalreserve.gov/faqs/steps-board-takes-to-issue-a-regulation.htm (last visited July 29, 2022); *see also* U.S. GOV'T ACCOUNTABILITY OFF., FINANCIAL REGULATION:

related climate rule, for example, would be subject to review in federal court against a standard of "arbitrary" and "capricious."[108] Pursuant to that standard of review, a federal court could decide that any action that is insufficiently grounded in facts that demonstrate how or why a particular asset class possesses discernable risks to the bank's solvency is unenforceable.

There is also a distinct culture of transparency surrounding agency action and, increasingly, Fed supervision.[109] Some academic observers frown upon the use of informal supervisory guidance in lieu of formal rules that have gone through the procedural rigor required by the APA, since these informal measures lack transparency and inadequate due process.[110] Accordingly, attempting to use soft law mechanisms to supervise firms' climate-related practices and exposures could invite political scrutiny of the Fed.[111] More concretely, public law limits how far the Fed could go by using more opaque or informal mechanisms of supervisory censure or moral suasion. In particular, there are robust protections in American public law against administrative action that violates basic aspects of due process—accordingly, supervisory determinations or pressure tactics that have not afforded banks ample opportunity to be heard and respond may fail to survive judicial review.[112]

Although the ECB has moved forward considerably in the climate supervisory space, it also has some outer limits to observe. For one, Article

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COMPLEX AND FRAGMENTED STRUCTURE COULD BE STREAMLINED TO IMPROVE EFFECTIVENESS 10 (2016), https://www.gao.gov/assets/gao-16-175.pdf ("Safety and soundness refer to a broad range of issues that relate to the health of a financial institution, including capital requirements, risk management, the quality and diversification of an institution's portfolio, liquidity and funds management, and adequate procedures for internal controls.").

108. 5 U.S.C. § 706.

109. *See, e.g.*, MetLife Inc. v. Financial Stability Oversight Council, 177 F. Supp. 3d 219 (D.D.C. 2016) (discussing how the FSOC acted counter to its published guidance without public explanation).

110. *See, e.g.*, Role of Supervisory Guidance, 86 Fed. Reg. 18,173, 18,178 (Apr. 8, 2021) (codified at 12 C.F.R. 262.7) ("[O]ne comment [argued] that [the Fed] should use notice-and-comment procedures, without exception, to issue all 'rules' as defined by the APA, which would include supervisory guidance.").

111. Notably, the Fed has undertaken research on the subject of whether the concept of "double materiality" should inform the Fed's approach to microprudential supervision. Double materiality refers to "the idea that supervisory authorities should consider both the risks that banks face from climate change and the impact of a bank's actions on climate change." The paper concludes that the concept can "be coherently embedded in a microprudential framework." While the author urges that this would not expand the Fed's authority, it is difficult to see how an approach that considered a bank's impact on the climate as great a risk to the bank as the climate's impact on bank assets would not increase the ambit of investments and business decisions the Fed, as supervisory, would determine to be inappropriate from a safety and soundness perspective. *See* Kevin J. Stiroh, *Climate Change and Double Materiality in a Micro- and Macroprudential Context* (Fed. Rsrv. Bd., Working Paper 2022-066, 2022), https://www.federalreserve.gov/econres/feds/files/2022066pap.pdf.

112. *See, e.g.*, A. Dan Tarlock, *Administrative Law: Procedural Due Process and Other Issues*, 58 CHI.-KENT L. REV. 13, 17, 20–22 (1980).

10(1) of the TEU establishes that "the functioning of the Union shall be founded on representative democracy."[113] There are related treaty principles in Article 5(2) TEU surrounding principles of conferral.[114] And, as noted by Zilioli and Ioannidis, "the principle of institutional balance requires the ECB to exercise its powers with due regard for the powers of the other EU institutions."[115] The implication of these public law constraints is that there are clear limits that the ECB cannot trespass in its green agenda. What these limits are will be further considered below.

In summary, although firm-level supervision may be the area where central banking law is most similar across these three jurisdictions—each anchored around safety and soundness goals—in practice, supervisory policy can nonetheless apply quite differently due to public law principles that govern agency or regulatory action and the weight each society places on formal versus informal lawmaking, transparency, and due process.

II. INSTITUTIONAL ARRANGEMENTS

Until this point, this Article has illustrated that, when central banks adhere to the rule of law and acknowledge the specifics of their own economies, climate change policies will necessarily diverge across jurisdictions. On that view, diverging policies are to be expected and indeed encouraged as a sign of central banks' commitment to good governance and accountability. As the central banks studied here—and many others across the globe—continue to refine and reexamine their climate policy strategies and tools, this Part offers three additional principles to shape the governance of central banking as it intersects with climate change.

A. Subsidiarity

As with any important question of authority in a legal order, it is important to consider the principle of subsidiarity in the context of central banking and climate change. Generally, when viable, the principle favors alternatives to centralized authority. Subsidiarity in this context differs from the EU principle of subsidiarity according to Article 5 of the Treaty of the European Union (discussed above), which states that "in areas which do not

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113. TEU, *infra* note 114, at 20.

114. "Under the principle of conferral, the Union shall act only within the limits of the competences conferred upon it by the Member States in the Treaties to attain the objectives set out therein. Competences not conferred upon the Union in the Treaties remain with the Member States." *See* Consolidated Version of the Treaty on European Union art. 5, Oct. 26, 2012, 2012 O.J. (C 326) [hereinafter TEU], https://eur-lex.europa.eu/resource.html?uri=cellar:2bf140bf-a3f8-4ab2-b506-fd71826e6da6.0023.02/DOC_1&format=PDF.

115. *See* Zilioli & Ioannidis, *supra* note 42, at 367 n.10.

fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level" and which is closely linked to the principle of proportionality, which requires that any action by the EU should not go beyond what is necessary to achieve the aims of the Treaties (Article 5 (4) of the TEU).[116]

The following Section suggests that central banks should consider whether there are more decentralized means of advancing a society's climate change goals than through central banking tools.

1. Private Sector Capacity

A fundamental tenet of liberal economic policy is that the government should not intervene when there is a private sector option that works well as a solution.[117] As such, one aspect to subsidiarity involves the capacity of and opportunity in the private sector to facilitate transition to a low carbon economy.

The economic effects of incentives and specialization are relevant here. Banks, like other corporations, are profit-maximizing institutions. They are highly incentivized to lend to the most profitable ventures; and in the case of universal banks to provide advisory and underwriting services to companies likely to be successful to boost profits and reputation.[118] So, while banks' comparative advantage is not in developing green technology, banks *do* specialize in lending to enterprises that have economic promise because they are likely to be successful in their intended venture. In other words, banks' business model is likely to drive them to identify the most promising green transition technologies, to get these technologies to market, and to bring them to global scale.[119] This begs the question, in each economy, of how much urging from central bank supervisors the private sector requires.

It further bears repeating that central bank credit allocations are likely to be much less efficient than the private sector's market forces.[120] Consider, as just one example, the inefficiencies associated with subsidizing green technologies through central bank generated "greeniums" that are not

116. TEU, *supra* note 114, at 18.

117. *See, e.g.*, Stephen K. Aikins, *Political Economy of Government Intervention in the Free Market System*, 31 ADMIN. THEORY & PRAC. 403, 404 (2009).

118. Light & Skinner, *supra* note 89, at 1927–31, 1938–39.

119. *Id.* at 1938–39.

120. *See* Edward Kane, *Good Intentions and Unintended Evil: The Case Against Selective Credit Allocation*, 9 J. MONEY, CREDIT, & BANKING 55, 56–58, 61 (1977).

market-ready.[121] In many cases, such greenium subsidization will introduce significant market waste in the production of green infrastructure or hard assets that do not propel society toward a greener equilibrium once full life metrics—for example, the energy costs and consequences of mining for rare materials—are factored into the economic analysis.

Historically, banks' incentives to finance structural transformations of the economy led them to the forefront of the major industrial and technological transformations of the last two centuries.[122] This begs the question whether central banks today can perform more efficiently than the private banking sector in the coming green transition. Where there is strength and innovation in the private sector, the central bank should have a limited role in driving forward transition finance. Such is the case in the United States. The EU has some parallels: stimulating private investment and mobilizing private resources to support the economic recovery post-Covid became a key part of the Next Generation EU (European Union Recovery Instrument).[123] The point here is that each central bank should take its private sector's incentives and capacity in full view.

2. Institutional and Comparative Advantage

There is a related question of subsidiarity that pertains to the institutional architecture of a given jurisdiction. Within a government, there may well be institutions other than the central bank that are more directly responsible for climate change goals or have a comparative advantage in addressing them, thus obviating or reducing the role of the central bank.

The regulatory architecture in the United States illustrates how subsidiarity combined with institutional comparative advantage suggests a muted role for the Fed in pursuing goals surrounding climate change. The U.S. has a wide array of government institutions—some focused on financial regulation and others on the environment specifically. The FDIC, for example, is the primary regulator for the numerous banks not within the Federal Reserve System—many of which are mortgage lenders and thus, depending on region, stand to be more impacted by the physical effects of

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121. *See* Sanne Wass, *Green Bond 'Greenium' is Evident Globally, Especially Strong for US Dollar Debt*, S&P GLOBAL (Sept. 15, 2021), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/green-bond-greenium-is-evident-globally-especially-strong-for-us-dollar-debt-66609073; *see also* CLARE CHURCH & ALEC CRAWFORD, GREEN CONFLICT MINERALS: THE FUELS OF CONFLICT IN THE TRANSITION TO A LOW-CARBON ECONOMY 1–3 (Int'l Institute for Sustainable Dev. 2018), https://www.iisd.org/system/files/publications/green-conflict-minerals.pdf.

122. *See* Light & Skinner, *supra* note 89, at 1921–22.

123. *See Recovery Plan for Europe*, EUR. COMM'N, https://ec.europa.eu/info/strategy/recovery-plan-europe_en (last visited Nov. 25, 2022); *Next Generation EU*, EUR. COMM'N, https://ec.europa.eu/info/strategy/eu-budget/eu-borrower-investor-relations/nextgenerationeu_en (last visited Nov. 26, 2022).

climate change than the large U.S. SIFIs under the Fed's primary jurisdiction.[124] Insurance firms, meanwhile, are regulated on a state-by-state basis, pursuant to regional authorities familiar with the firms and their policy holders.[125] Finally, quite outside the financial regulatory milieu sits the Environmental Protection Agency ("EPA"), which has long set positive law standards and disclosure rules for businesses.[126]

The U.K., as a smaller economy, has fewer regulatory institutions. While the FCA shares some responsibilities with the PRA/Bank of England, the firms within each of these institution's remits are in many ways distinct. The PRA has broader responsibility over a wider range of firms than the Fed—including over insurers—without as much overlap or redundancy with other agencies regarding climate work.[127] Consequently, our view of institutional subsidiarity may not necessarily imply a lesser role for the U.K. central bank in the way that it does for the Fed. Again, this analysis illustrates how jurisdiction-specific each principle must be in its application.

In the EU, the principle of subsidiarity according to Article 5 of the TEU aims to ensure that the EU institutions do not take action (except in the areas that fall within its exclusive competence) unless it is more effective than action taken at the national, regional, or local level.[128] Although one could imagine an argument that subsidiarity could be reversed to justify Union action, given the cross-border nature of the risks involved, subsidiarity is a politically delicate question for Member States and so there would be political-economy constraints in advancing such a claim. Indeed, as stated above, under EU law the principle of subsidiarity goes hand in hand with the principle of proportionality.[129]

124. *See* Diana Olick, *Mortgage Market is Unprepared for Climate Risk, Says Industry Report*, CNBC (Sept. 23, 2021, 11:38 AM), https://www.cnbc.com/2021/09/23/mortgage-market-is-unprepared-for-climate-risk-says-industry-report.html.

125. *See* NAT'L ASS'N OF INS. COMM'RS, STATE INSURANCE REGULATION: HISTORY, PURPOSE AND STRUCTURE (2011), https://content.naic.org/sites/default/files/inline-files/topics_white_paper_hist_ins_reg.pdf.

126. *See* Caroline B.C. Hermann, *Corporate Environmental Disclosure Requirements*, 35 ENV'T L. REP. 10308 (2005).

127. *What is the Prudential Regulation Authority (PRA)?*, BANK OF ENG. (Oct. 15, 2020), https://www.bankofengland.co.uk/knowledgebank/what-is-the-prudential-regulation-authority-pra.

128. TEU, *supra* note 114, art. 5, at 18.

129. *See* Zilioli & Ioannidis, *supra* note 42, at 371–72 (describing how the principle of proportionality requires "that acts of the EU institutions should be suitable for attaining the legitimate objectives pursued, and should not go beyond what is necessary to achieve those objectives," extending to the ECB's secondary mandate where subsidiary may be such a proportional response).

B. Tradeoffs

1. Distribution

Central banks should also be mindful of the key tradeoffs implied by their climate policy. Some central bank climate policies may give rise to tradeoffs at the household level. These include, for example, the increasingly apparent tradeoff between sustainability and energy security.[130] In the absence of scalable, reliable clean energy alternatives to fossil fuels, central banking tools that drive transition may create hardship for some households which in turn have distributional effects.

We have seen in other settings how central bank policies with distributive impacts pose legitimacy challenges for the central banks. For example, the impression that the prolonged use of unconventional central bank balance sheet tools—and QE in particular—may have wealth effects has undermined public support for central banking interventions in financial markets in times of crisis.[131] Were central banks' financial stability tools—as deployed toward climate change—to come under similar scrutiny for their distributional consequences, they too may lose public favor.

2. Legitimacy

Recent data suggest that public support for central bank initiatives for goals other than price stability can quickly dissipate when inflation rises. A study conducted by one of us (Professor Skinner) with Professor Carola Binder ran two waves of a survey about what average citizens want the Fed to do, first in May and June of 2021, and second in April of 2022.[132] Respondents were asked who they thought should be most responsible for policy areas including price stability, climate policy, reducing economic inequality, and reducing gender inequality. Respondents could choose elected officials, Federal Reserve officials, other unelected officials, other/none of previous choices, or unsure.[133]

Both years, about 60% of respondents thought the Fed should be responsible for price stability.[134] But respondents became less eager for the Fed to have responsibility for policies beyond the scope of their mandate. In 2021, 13% of respondents thought that the Fed should be primarily responsible for climate policy.[135] By 2022, this fell to 3%. This decline

130. *See* Mathis & Krukowska, *supra* note 19.

131. *See* Benjamin Braun, *Speaking to the People? Money, Trust, and Central Bank Legitimacy in the Age of Quantitative Easing*, 23 REV. INT'L POL. ECON. 1064 (2016).

132. Skinner & Binder, *supra* note 25, at 31.

133. *Id.* at 28.

134. *Id.* at 36.

135. *Id.*

accompanied a fall in respondents' reported confidence in the Fed, and an increase in their inflation expectations.[136]

The results in that research suggest some firm limits grounded in democratic legitimacy. The public may not support central bank actions that push to the limit of—and beyond—their mandates when price stability comes under threat. Because the central bank may not always know (or accurately predict) when inflationary shocks will arrive, they should anticipate legitimacy costs will follow from venturing too far beyond their core responsibility to pursue price stability in periods of economic calm.

3. Trust

Closely related to the subject of central bank legitimacy is that of public trust in a nation's institutions more generally. There is a large public choice theory literature that suggests well organized, small groups that can exclude free riders are best positioned to have legislative influence.[137] Relatedly, there is some strand of this literature that theorizes trust in government is inversely related with its size.[138]

To the extent central bank adoption of climate policies appears to respond or even cater to special interests, this could—over the medium to long term—damage a population's willingness to trust a government's economic interventions more generally; or to become skeptical of expert institutions in a broader sense. Loss of trust in central banks may be particularly pronounced were economic distortions—such as the distributive ones discussed above—to follow from climate policies. Again, the possible damage to trust in central banking institutions is a reason to avoid policies that create winners and losers, including in the climate space.

4. Resources

There are also, of course, limitations to how much central banks can accomplish.[139] Focusing on climate change may divert scarce resources from attending to other components of the central bank's remit—or at least it may create the public impression that central banks have neglected other

136. *Id.*

137. *See, e.g.*, Marc Stuart Gerber, *Equal Protection, Public Choice Theory, and Learnfare: Wealth Classifications Revisited*, 81 GEO. L.J. 2141, 2153–54 (1993) ("Public choice theory is the 'economic study of nonmarket decision making, or simply the application of economics to political science.'"); William N. Eskridge Jr., *Politics without Romance: Implications of Public Choice Theory for Statutory Interpretation*, 74 Va. L. Rev. 275, 277 (1988) ("Public choice theory indicates that the legislature will produce too few laws that serve truly public ends, and too many laws that serve private ends.").

138. *See, e.g.*, Eiji Yamamura, *Government Size and Trust*, 70 REV. SOC. ECON. 31 (2012).

139. *See, e.g.*, Andrea Ajello et al., *Monetary Policy Tradeoffs and the Federal Reserve's Dual Mandate*, BD. OF GOVERNORS OF FED. RSRV. SYS. (Aug. 2020), https://www.federalreserve.gov/econres/feds/monetary-policy-tradeoffs-and-the-federal-reserves-dual-mandate.htm.

responsibilities while minding climate change. Indeed, in the high inflation environment today, there is a widespread notion that central banks have become distracted or overly stretched, and as a consequence have fallen down on their core responsibility to maintain price stability.[140]

5. Mandates

This example highlights the broader dilemma for central banks pursuing climate goals—they will invariably face tradeoffs between their mandates.[141] Climate-related financial stability or safety and soundness goals could in theory undermine the central bank's ability to transmit monetary policy to the extent those policies crimp GDP growth, increase joblessness in certain sectors, or damage the public's confidence in central bank pronouncements by inducing more frequent policy errors. Climate related financial stability policy may also work at cross purposes with monetary policy more generally—by, for example, stoking inflation with green bond purchases, shifting labor force participation to more highly skilled workers, or undermining competition objectives through more stringent capital rules or supervision. Central banks will have to wrestle with those possible tradeoffs in a way that comports with legislative and public scrutiny.[142]

6. Competition

Finally, and related to the issue of tradeoffs within the central bank's own mandates, there is the possibility that a central bank's climate policy may come into conflict with the mandates of *other* economic regulators—and national or supranational competition authorities in particular. In the case of climate policy, it may well be that the more expansive a central bank's

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140. *See*, *e.g.*, ECONOMIC AFFAIRS COMMITTEE, *supra* note 21, at 4–5.

141. There is a growing central banking literature acknowledging the dilemma of policy trade-offs. *See, e.g.*, Signe Krogstrup, Governor, Nat'l Bank of Den., Speech at the National Bank of Belgium Policy Seminar About Perspectives on Central Bank Mandates, Instruments, and Policy Trade-Offs (Apr. 26, 2022), https://www.bis.org/review/r220426g.htm.

142. Central banks certainly acknowledge these tradeoffs and try, at least in principle, to reconcile them. For example, the Chancellor does instruct the BOE that, "The MPC and the Financial Policy Committee should continue to have regard to each other's actions, to ensure coordination between monetary and macroprudential policy." *Compare* Sunak Letter A (discussing the green remit of the MPC), *and* Sunak Letter B (demonstrating that climate change is also featured in FPC's remit letter and demonstrating obligations in relation to climate-related matters tailored to the specifics of the Financial Policy Committee), *and* Letter from Rishi Sunak, Chancellor of the Exchequer, to Andrew Bailey, Governor, Bank of Eng. (Mar. 23, 2021), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972443/CX_Letter_-_PRC_Remit_230321.pdf (also demonstrating obligations in relation to climate-related matters tailored to the Prudential Regulation Committee), *with* Financial Services Act 2021, c. 22 (UK), https://www.legislation.gov.uk/ukpga/2021/22 (substantiating a new statutory "have regard" for the PRA to have regard to the net zero target when making CRR rules). But navigating these tradeoffs and tension has, in practice, proven very difficult.

financial stability mandate and endeavors grow to accommodate financial stability climate measures, the more likely it is that the central bank's mandate may collide with competition objectives. If central banks were to use their regulatory or supervisory tools to incentivize banks to take the same or highly similar action to facilitate an economy wide transition to net zero—for example, treating fossil fuel producers, as a class, adversely in underwriting decisions—the end-result may accomplish one goal (a sector-wide reduction of lending to this category of brown borrowers) but could at the same time undermine another (a competitive market place for bank-supplied credit).

In the U.S., longstanding antitrust law generally prohibits coordinated behavior among firms that restrains trade or fetters competition.[143] Likewise, within the EU, competition law has aimed to prevent the distortion of competition and allow for a "free and dynamic" internal market;[144] as in the U.S., the objective of EU competition law aims to promote general economic and consumer welfare.[145] In the U.K. after Brexit, the Competition Act 1998 contained equivalent provisions to Articles 101 and 102 TFEU to restrain anticompetitive behavior.[146]

Already, some central bank-linked net-zero initiatives that required banks to adopt similar anti-brown screening policies have been abandoned for fear of antitrust legal risk. In particular, although the conversations remain private, some speculate that banks' present desire to move away from the Glasgow Financial Alliance for Net Zero ("GFANZ") in the fall

143. In the United States, for example, the Sherman Act is a "comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade." It makes illegal, among other things, "every contract, combination, or conspiracy in restraint of trade." 15 U.S.C. § 1 (2004). Where a restraint of trade is ancillary to some broader purpose, courts may find the restraint unreasonable and therefore unlawful. *See* Addyston Pipe & Steel Co. v. United States, 175 U.S. 211, 228 (1899). For a European account see, for example, F. Enrique González Díaz, *The Notion of Ancillary Restraints Under EC Competition Law*, 19 FORDHAM INT'L L.J. 951 (1995) (noting that "Article 85(1) of the EC Treaty prohibits, as incompatible with the common market, all agreements between undertakings, decisions by associations of undertakings, and concerted practices which may affect trade between Member States that have as their object or effect the prevention, restriction, or distortion of competition within the common market").

144. EUR. PARLIAMENT, FACT SHEETS ON THE EUROPEAN UNION, COMPETITION POLICY, https://www.europarl.europa.eu/factsheets/en/sheet/82/competition-policy%3E%20accessed%20 24%20December%202020 (last visited Nov. 2022).

145. Article 101 TFEU, for example, bans all anti-competitive agreements. Article 101(1) prohibits "all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market." Meanwhile, Article 101(3) provides exceptions, including agreements "which contribute[] to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit . . . " Consolidated Version of the Treaty on the Functioning of the European Union art. 101, June 7, 2016, 2006 O.J. (C 202) 88–89 [hereinafter TFEU].

146. *See id.* (discussing these provisions of the TFEU); Competition Act 1998, c. 1–2 (UK).

of 2022 arose from, among other things, banks' concern that their parallel commitments would invite the scrutiny of domestic competition authorities.[147] Announced in the fall of 2021 by former Bank of England Governor Mark Carney at the COP 26 meetings, the GFANZ aimed to have private capital commit $130 trillion to achieving net zero.[148] By November 2022, there were 122 banking institutions committed to the Alliance.[149] Membership in the alliance initially required that "all GFANZ members must align with the Race to Zero criteria," thus linking banks' membership in GFANZ to a UN initiative ("Race to Zero") that aimed to accomplish the goals set out in the United Nations Framework Convention on Climate Change ("UNFCCC").[150] But by November 2022, GFANZ appeared to have recognized that its effort to coalesce banks around this goal could have anti-competitive effects. Its second annual progress report omitted the Race to Zero language which presumably gives banks space to personalize their path to lowering emissions.[151]

Even if central banks do not require or encourage banks to engage in coordinated behavior that may conflict with formal antitrust laws, they should still be mindful of policy action that may undermine the competitiveness of the banking sector more generally. Layering additional climate-related regulatory and supervisory requirements—like the newly developed climate scenarios analyses, as one example—could, like all regulatory frameworks, add costs to the business of banking and thus raise barriers to new entry.[152] Added regulatory expenses and complications

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147. *See, e.g.*, Tom Metcalf, Alastair Marsh & Natasha White, *Banks May Leave Mark Carney's Climate Group on Legal Risks*, BLOOMBERG (Sept. 21, 2022), https://www.bloomberg.com/news/articles/2022-09-21/banks-may-leave-mark-carney-s-climate-alliance-on-legal-risks?leadSource=uverify%20wall.

148. *See* Polly Bindman, *Too Few Rules on Fossil Fuels? The Limitations of Mark Carney's GFANZ Alliance*, ENERGY MONITOR (Nov. 17, 2022), https://www.energymonitor.ai/finance/sustainable-finance/gfanz-and-fossil-fuels-the-limitations-of-mark-carneys-alliance.

149. *Id.*

150. *See* RACE TO ZERO, https://climatechampions.unfccc.int/join-the-race/ (last visited Nov. 26, 2022) (explaining that "[a]ll members are committed to the same overarching goal: reducing emissions across all scopes swiftly and fairly in line with the Paris Agreement . . . [a]ll actors must meet stringent criteria which will bring them to the starting line to credibly race to zero emissions"). *Compare* GLASGOW FIN. ALL. FOR NET ZERO, 2022 PROGRESS REPORT (2022), https://assets.bbhub.io/company/sites/63/2022/10/GFANZ-2022-Progress-Report.pdf, *with* GLASGOW FIN. ALL. FOR NET ZERO, 2021 PROGRESS REPORT (2021), https://assets.bbhub.io/company/sites/63/2021/11/GFANZ-Progress-Report.pdf.

151. *See* 2021 PROGRESS REPORT, *supra* note 150.

152. For a basic explanation of competition and barriers to entry, see ORG. FOR ECON. CO-OPERATION & DEV., COMPETITION AND BARRIERS TO ENTRY (2007), https://www.oecd.org/competition/mergers/37921908.pdf. For the impact of regulations upon entry, see Leora Klapper, Luc Laeven & Raghuram Rajan, *Entry Regulation as a Barrier to Entrepreneurship* 31–32 (Nat'l. Bureau of Econ. Rsch., Working Paper No. 10380, 2020), https://www.nber.org/papers/w10380.

could also, for the same reason, incentivize consolidation in the banking industry.

Broadly speaking, central banks' climate requirements for banks might generally reduce the dynamism of a domestic banking sector, thereby rendering that sector less competitive vis-à-vis nonbank financial intermediaries or the banks of other jurisdictions. As such, the conflict between a central bank's climate goals and competition will be particularly difficult to navigate for those central banks that themselves have a mandate for competition. The 2022 Financial Services and Markets Bill gives the Bank of England's PRA, for example, secondary objectives for growth and international competitiveness.[153]

Given the myriad possible impacts of climate-related central bank policy on competition, the interplay between climate regulation, supervision, and economic competition on the one hand should be carefully weighed against social and economic optimums on the other. As discussed, an assessment of these factors and tradeoffs is likely best left to democratically responsive institutions. But because the question of whether agreements and coordination violate competition law is generally a factual question to be determined ex post, judicial review is, as we discuss below, an important backstop to install.

7. Trust

Overall, the analysis herein further suggests that even if central bank mandates were to be altered to accommodate further climate actions, if those legislative changes were widely perceived to be the byproduct of special interests prevailing, the exercise of those mandates may still lack the widespread acceptance requisite of democratic legitimacy. A lack of democratic legitimacy surrounding a central bank's climate actions could, in turn, present challenges in transmitting those policies. Markets or regulated

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153. *See* Financial Services and Markets Bill 2022, HL Bill [80] ch. 3, s. 24 (UK) (outlining revisions to the FSMA 2000 to add growth and competition objectives for the PRA and FCA); *see also* Victoria Saporta, Exec. Dir. of Prudential Pol'y, Bank of Eng., Address at the City and Financial Global Event: The PRA's Future Approach to Policy (Sept. 27, 2022), https://www.bankofengland.co.uk/speech/2022/september/vicky-saporta-speech-at-the-city-and-financial-the-future-of-uk-financial-services-regulation-summit; *Our Competition Objective*, BANK OF ENG., https://www.bankofengland.co.uk/prudential-regulation/secondary-competition-objective (last visited Nov. 25, 2022). Indeed, competition is so important to the government, to whom the Bank is statutorily required to account, that HMT considered (though abandoned) the idea of introducing a new power of direction to require the Bank to comply with the government's assessment of how regulation should accommodate competition. *See, e.g.*, George Parker, *Sunak Backs Down in Battle with Bank of England Over Financial Regulation*, FIN. TIMES (Nov. 23, 2022), https://www.ft.com/content/694797d1-dee8-4e8d-a788-b3ada405a550?accessToken=zwAAAYS0r0jOkc9pR5fR3uhOjdOniLOtpAWlUA.MEYCIQCREIjz9GS4p4RMsL4DZTrbLcCFzbr6bBRhZTPkUhWRbgIhAJ7aB-GKBVbZlOL0_tGDcvJY7f9o8clREmfho_A6rQq4&sharetype=gift&token=0afe2f85-f08c-4ca1-b898-7ce1d97252b6.

parties may challenge the initiatives in court, or attempt arbitrage, thereby undermining their efficacy and resulting in deadweight loss.[154] Thus, one possible tradeoff for central banks to consider is the tradeoff between a larger, more command-and-control style central bank and generalized trust in a country's democratic institutions—particularly in regard to those that engage in economic regulation.

C. Democratically Deferential and Populism-Resistant

Precisely because trade-offs are inevitable, and the siren call of populism can be alluring, it is important that central banks have governance mechanisms in place to ensure that they remain firmly committed to the democratic process in their respective jurisdictions in accordance with their legal mandates.

For the Fed, this means respect for the separation of power between the Executive and Legislative branches.[155] Accordingly, the Fed should not pursue items on the executive branch agenda unless specifically instructed to do so by Congress—the Fed is an agent of Congress, not the President, and can legitimately only pursue the goals established by the legislature regardless of a president's priorities.[156]

In the United Kingdom, the democratic arrangement is different. Parliament establishes the BOE's objectives and remit, but the details of the remit in certain key respects are then interpreted annually by HMT (i.e., the Government). Accordingly, the BOE has been statutorily designed to be responsive—and accountable—to both the legislature and the executive. It is precisely for this reason that the BOE has been able to advance climate goals through its various policy tools without statutory revisions to its objectives from Parliament. Time will tell, however, whether the democratic legitimacy of the BOE's actions would have been better maintained if Parliament had also spoken clearly about climate change objectives.

The ECB, as an EU institution, must act in accordance with the Union framework outlined earlier, including the principle of democracy laid down in Articles 10 and 2 of the TEU.[157] This principle is fundamental to

154. *See* Christina Parajon Skinner, *Regulating Nonbanks: A Plan for SIFI Lite*, 105 GEO. L.J. 1379, 1397–1408 (2017).

155. *See* Christina Parajon Skinner, *The Monetary Executive*, 91 GEO. WASH. L. REV. (forthcoming 2023) (manuscript at 151–54) (on file with authors).

156. *See* Skinner, *supra* note 1, at 254–56.

157. Article 2 of the TEU reads as follows: "The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail." TEU, *supra* note 114, at 17. Article 10(1) of the TEU states: "The functioning of the Union shall be founded on representative democracy." *Id.* at 20.

understand the workings of all EU institutions; and the principle of institutional balance and the justiciability of the ECB's decisions ensure that the checks and balances embedded in a democracy work in practice.

There may well be some temptation among central banks to depart from the will of the elected branches to address problems of so-called gridlock in the legislature. But central banks that respond to pressure from the public to become more populist will suffer an array of legitimacy challenges.

One of us (Professor Lastra) together with Professor Charles Goodhart have explored the theme of populism in central banking in a seminal contribution.[158] The resulting paper suggests that the rise in populist policies in the aftermath of the global financial crisis can compromise central bank independence. The expanded mandates of central banks in response to crises (the global financial crisis, Covid, and climate change) can also lead to their politicization and dent their credibility as inflation fighters in the long term. As Professors Lastra and Goodhart argue, central banks are the guardians of monetary stability (and, in varying degrees, financial stability) and thus affect price levels and influence the level of economic risk-taking. They are already very powerful entities.[159] With expanded mandates and responsibilities and/or tools, central banks at the very least require new mechanisms of accountability.

III. DESIGNING NEW MECHANISMS OF ACCOUNTABILITY

Accountability is not simply an "add-on" to justify independence, hence the term "accountable independence."[160] Accountability is a constitutive part of the design of an independent central bank in a democratic system, and the aim of its "institutional" articulation is to bring back the central bank to the democratic system of checks and balances.[161] This becomes of paramount importance in the context of the central banks' actual or potential involvement in climate change and environmental policies.

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158. *See* Charles Goodhart & Rosa Lastra, *Populism and Central Bank Independence*, 29 OPEN ECON. REV. (2017). *See also* Charles Goodhart & Rosa M. Lastra, *Populism, Politics, and Central Bank Independence*, *in* POPULISM AND THE FUTURE OF THE FED 39 (James A. Dorn ed., 2022).

159. For a general literature on the power of the Fed, see, for example, LEV MENAND, THE FED UNBOUND: CENTRAL BANKING IN A TIME OF CRISIS (2022); DAVID WESSEL, IN FED WE TRUST: BEN BERNANKE'S WAR ON THE GREAT PANIC (2009).

160. *See* Rosa Maria Lastra, *The Independence of the European System of Central Banks*, 33 HARV. INT'L L.J. 475 (1992).

161. *See* ROSA M. LASTRA, ACCOUNTABILITY MECHANISMS OF THE BANK OF ENGLAND AND OF THE EUROPEAN CENTRAL BANK (European Parliament 2020), https://www.europarl.europa.eu/cmsdata/211623/1_LASTRA-final.pdf. This report draws on earlier writings by Lastra and on the three reports submitted at the request of the European Parliament. *See id.*; Lastra & Dietz, *supra* note 65, at 30–31; Lastra & Alexander, *supra* note 18, at 9.

A. Traditional Mechanisms for Central Bank Accountability

An accountable central bank should always be scrutinized for the reasonableness of its actions: by the legislature, by the executive (in some jurisdictions), by the public, and by the competent courts of justice. An accountable central bank should also be transparent and subject to performance control. Only with adequate and diversified mechanisms of accountability can the central bank—as an independent agency—be democratically legitimate. This is essential in "extraordinary times" where the government may need to raise revenues quickly and efficiently or to depart from some basic tenets of central bank independence. Extraordinary times and crises often lead to expanded mandates and/or expanded tools.[162]

The notion of accountability can have both ex ante and ex post elements. Accountability can either be exercised before/during the process of taking the action, *or* after the action has been taken.[163] It is with reference to this fact, the fact of concluding a decision or action, that we define accountability as either ex ante or ex post. An example of ex ante accountability is where the "accountee" interferes in the process of choosing the holders of power, or where the consent of the "accountee" is required for the decision of the "accountable" to be final.[164]

For instance, the appointment procedures of central bank officials, when such procedures require legislative approval, and the parliamentary debate of inflation targets (if such a legislative debate is required) can be regarded as ways of exercising accountability ex ante or through scrutiny.[165] The reporting requirements and the appearances of the central bank chair or governor in front of legislative committees are ways of exercising accountability ex post through public inquiry.

The actual mechanisms of ensuring accountability often seem elusive. There is "process" accountability which demands the placement of the independent institution within the constitutional system of checks and balances.[166] There is also "output" accountability or "output monitoring" which emphasizes performance, transparency, and disclosure.[167] Lawyers

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162. There is also a large literature on government power during emergencies. *See, e.g.*, Skinner, *supra* note 155, at 123 (discussing congressional delegation of economic power in emergency); *see also* Lastra & Miller, *supra* note 27.

163. *See* LASTRA, *supra* note 24, at 29–110, 247–86; *See also* Amtenbrink & Lastra, *supra* note 27, at 123; Lastra & Shams, *supra* note 27, at 169–70; Garicano & Lastra, *supra* note 27, at 42.

164. *See* Amtenbrink & Lastra, *supra* note 27, at 120–21; *see also* Lastra & Miller, *supra* note 27, at 31–50; Lastra & Shams, *supra* note 27, at 165–188.

165. *See* Amtenbrink & Lastra, *supra* note 27, at 125; *see also* Lastra & Shams, *supra* note 27, at 165–88.

166. *See* Garicano & Lastra, *supra* note 27, at 37–40.

167. *Id.*

often focus on the process or "inputs" while economists often emphasize performance or the "outputs."[168] Accordingly, the legal scholarship on agency accountability tends to emphasize the political dimension of accountability, which is related to the democratic legitimacy of independent agencies.[169] Some "new paradigms" of accountability—such as consultations with consumers, industry groups, or the public in general, as well as proportionality assessments—contribute to transparency, though they must be channeled through adequate institutional mechanisms.[170] Some of these new paradigms can also help reconnect normative and societal legitimacy and improve central bank communication.

Effective central bank communication helps reconnect normative legitimacy[171] and societal legitimacy.[172] While the ECB enjoyed societal support at the time of its creation, this support can wane or be questioned with the passage of time or when economic or political circumstances change, in particular when new policies or objectives risk politicization. In his oral evidence, Otmar Issing told the Economic Affairs Committee during the House of Lords QE inquiry that "central banks have come closer to political decisions during the financial crisis and now in the context of the pandemic."[173] Adding climate change and environmental sustainability to the mix may well imply a path to an even broader role in a nation's politics.

The problem with credibility is that it is laborious to construct and easy to destruct. One can see that with the return of inflation in the U.S., U.K., and EU.[174] If central banks overstep their mandates, or are perceived to do so, they lose credibility and endanger their legitimacy. This not only threatens the effectiveness of monetary policy but can also undermine the general trust in the commitment of the central bank to fulfil its mandate,

168. *See* LASTRA, *supra* note 161, at 8.

169. *Id.*

170. *Id.*

171. Legitimacy has a formal dimension related to the legal and political process, as well as a societal dimension related to the support by the public. *See* AMARYLLIS VERHOEVEN, THE EUROPEAN UNION IN SEARCH OF A DEMOCRATIC AND CONSTITUTIONAL THEORY 10–11 (2002) ("Legitimacy is constituted of two aspects: a normative, more formal notion, which refers to the legality of the political process and a societal, rather empirical notion, which is addressing the acceptance of the system."). There is no doubt that the ECB was established in accordance with the Maastricht Treaty, and thus, that its establishment is consistent with the formal understanding of legitimacy. *See* James McBride et al., *The Role of the European Central Bank*, COUNCIL ON FOREIGN RELS. (Oct. 3, 2019, 8:00 AM), https://www.cfr.org/backgrounder/role-european-central-bank ("The 1992 Maastrict Treaty created the European System of Central Banks (ESCB), which compromises the ECB and the twenty-eight national central banks of the European Union . . . .").

172. *See* LASTRA, *supra* note 24, at 84. An in-depth discussion of the concept of central bank accountability can be found in *id.* at 29–110, 247–86.

173. ECONOMIC AFFAIRS COMMITTEE, *supra* note 21, at 37.

174. *See* Lopez, *supra* note 19.

especially with regard to the price stability goal. We return to this point below.

Transparency—a buzzword in central banking in recent years—is in some cases equated with accountability. But accountability is more than transparency.[175] Central banks are becoming more transparent about their monetary policy activities.[176] An accountable central bank must explain the rationale and the considerations for adopting monetary policy measures (and the criteria of assessment) as well as the implications of the measures in the pursuit of its objectives (and the hierarchy of such objectives). At the EU level, this communication is essential given the distribution of competences in the areas of monetary policy (European) and fiscal policy (national).[177]

The parliamentary accountability mechanisms to which central banks such as the BOE and the Fed are submitted provide examples of good practice in terms of democratic legitimacy and effective communication. For example, as already discussed, the inquiry that the House of Lords undertook during the first half of 2021 into the QE program of the BOE offers a commendable exercise of parliamentary scrutiny of monetary policy, which can be replicated in the context of climate change.[178]

The inquiry focused on a single issue (QE) and lasted for several months, thus allowing ample time to discuss the benefits and drawbacks of QE. Further, the inquiry brought together a number of experts of the highest caliber—in addition to current and former central bank governors and Treasury officials—to give oral evidence.[179] These witnesses answered

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175. Sir Scott Richard, *Report of the Inquiry Into the Export of Defence Equipment and Dual-Use Goods to Iraq and Related Prosecutions*, *in* SOURCEBOOK ON PUBLIC LAW (Cavendish et al. eds., 1997) ("The importance . . . of the provision of full and adequate information is, in my opinion, self-evident, whether in answering parliamentary questions or in debate or to a select committee. Withholding information on the matter under review, it is not a full account, and the obligation to account for what has happened or for what is being done has prima facie not been discharged. Without the provision of full information, it is not possible for parliament, or for that matter the public, to hold the executive fully to account.").

176. *See Accountability*, EUR. CENT. BANK, https://www.ecb.europa.eu/ecb/orga/accountability/html/index.en.html (last visited July 29, 2022). This framework is summarised in LASTRA, *supra* note 161, at 30 ("Currently the ECB publishes: The Economic Bulletin (formerly Monthly Bulletin) which presents the economic and monetary information that form the basis for the Governing Council's policy decisions. It is published eight times a year, two weeks after each monetary policy meeting; the Eurosystem's consolidated weekly financial statement which provide information on monetary policy operations, foreign exchange operations and investment activities; the press conferences and the press statements which the ECB holds after each Governing Council monetary policy meeting setting key interest rates for the euro area, i.e. every six weeks and the monetary policy accounts of the Governing Council's discussions (which are published four weeks after each monetary policy meeting) . . . , which were introduced in 2015 during Draghi's presidency.").

177. *See* LASTRA, *supra* note 161, at 24.

178. ECONOMIC AFFAIRS COMMITTEE, *supra* note 21, at 13–15.

179. *Id.* at 62–66.

a number of incisive questions prepared ex ante by the members of the Economic Affairs Committee of the House of Lords (some of the members are experts in monetary policy).[180]

The final "evidence-based report" was clearly written to reach the average citizen, explaining highly complex and technical matters in simple language, and emphasizing *inter alia* the distributional (inequality) and other real-economic effects of monetary policy.[181] The report's comprehensiveness reflected the breadth and depth of the inquiry, combining the results of the oral evidence received with the different sources of written evidence submitted by any interested party during the inquiry. This *modus operandi* of parliamentary accountability and information gathering vis-à-vis an important yet controversial monetary policy tool could be replicated by Members of the European Parliament participating in the Monetary Dialogue with the ECB.[182]

Additionally, there are other mechanisms that can inform parliamentary scrutiny. For example, effective audit control functions, established through independent evaluation offices ("IEO"s) (like the ones at the BOE and at the IMF), may provide additional channels through which Parliament can exercise future scrutiny and push for increased transparency.[183] Ultimately, the design of accountable independence is a balancing act. Too much independence leads to an undesirable state within the state. Too much accountability threatens the effectiveness of independence.

Accountability is tricky to define conclusively and trickier still to construct. Despite those challenges, legitimacy and the rule of law demand that increased central banking power accompanies increased central bank accountability. Thus, any expansion of central bank powers in the area of climate change and environmental sustainability must be paired with an adequate expansion in climate-specific accountability mechanisms. This can be done either by the extension of existing instruments or by adoption of new instruments.

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180. *See, e.g.*, *id.* at 47.

181. *Id.* at 53–54.

182. *See* LASTRA, *supra* note 161, at 27–29.

183. *See Independent Evaluation Office*, BANK OF ENG., https://www.bankofengland.co.uk/independent-evaluation-office (last visited July 29, 2022); *The IMF and Capacity Development*, INDEP. EVALUATION OFF. OF THE INT'L MONETARY FUND, https://ieo.imf.org/en/ (last visited July 29, 2022).

B. Accountability for Sustainable Central Banking

Any form of accountability presupposes that there are objectives or standards according to which an action or decision might be assessed. In other words, accountability implies an obligation to comply with certain standards in the exercise of power or to achieve specific goals. The more complex the activity, the more difficult it is to establish clear standards of conduct and specific outcomes. Standards, on the other hand, depend on the political values as expressed in constitutional principles and customary practice in political life. The more specific the goals and standards, the more effective the accountability. This might induce the 'accountees' to resort to economic or other measurable criteria of performance (hence the term 'performance' accountability).

As the public becomes increasingly attuned to the policies of the central bank, the need for effective public scrutiny also grows in importance. Central banks should demonstrate to legislatures a communication plan around climate policies that satisfies lawmakers as comprehensive and effective.

There is also a key distinction between political and public accountability and legal redress. Whereas political accountability that is enforced by a legislature often prevents future recurrence and is short of actual redress, judicial accountability can lead to rescission of a power improperly granted or exercised or—in some cases—requirements that the institution responsible for abuse of power make amends.[184] On this view, judicial review of central bank climate actions—new exercises of power or the grants of new powers—should be fully available to regulated and supervised parties or others impacted by climate-related balance sheet policy.

Generally, the judicial review of administrative actions to prevent an arbitrary and unreasonable exercise of discretionary authority is an important element of the rule of law.[185] The discretion of central bankers should never be unfettered but subject to legal control.[186] But here, too,

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184. In the literature on institutional accountability, some distinguish between explanatory accountability, an obligation to answer questions to give an account of an action, and amendatory accountability, an obligation to make amends and grant redress. *See* LASTRA, *supra* note 161, at 7.

185. Professor Lastra has long defended the justiciability of central bank decisions in general, and ECB decisions in particular, under general principles of administrative law. *See* LASTRA, *supra* 24, at 90 ("Judicial review of the agency's action and decisions . . . is essential to prevent and control the arbitrary and unreasonable exercise of discretionary powers. This is a fundamental element of the rule of law. The discretion of public officials should not be unfettered but subject to legal control."); *see also* Goodhart & Lastra, *supra* note 158, at 35.

186. LASTRA, *supra* note 161, at 519.

there are widely ranging approaches to the judicial review of central bank decisions in the EU, U.S., and U.K.

In the EU, as stated above, ECB monetary and supervisory decisions are clearly reviewable by the Court of Justice of the European Union, in accordance with Article 263 of the TFEU and Article 35 of the ESCB Statute.[187] In the EU, the justiciability of monetary policy decisions has triggered a rich jurisprudence. In particular, the *Pringle*, *Gauweiler*, and *Weiss* cases are key to understanding the contours of monetary policy.[188] The review by the Court of Justice of the European Union ("CJEU") of the monetary policy decisions taken by the ECB is an important mechanism of accountability in the EU, in particular considering the different jurisdictional domains of monetary policy (centralized) and fiscal policy (decentralized). As such, judicial accountability of monetary policy decisions by the CJEU is a fundamental element in the design of the accountable independence of the ECB.[189] The CJEU has also confirmed its exclusive competence in supervisory decisions in *Berlusconi and Fininvest* Case 219/17.[190] In C-255/18 *State Street Bank*, the Court noted (paragraph 32) the importance of a uniform application of EU law throughout the European Union.[191]

In contrast, in the U.S., since the Second Circuit's holding in *Raichle v. Federal Reserve Bank of New York*, federal courts generally conclude that monetary policy decisions are not justiciable.[192] There, the Court noted that

> It would be an unthinkable burden upon any banking system if its open market sales and discount rates were to be subject to judicial review. Indeed, the correction of discount rates by judicial decree seems almost grotesque, when we remember that conditions in the money market often change from hour to hour, and the disease would ordinarily be over long before a judicial diagnosis could be made.[193]

187. *See* Goodhart & Lastra, *supra* note 158, at 65; *See also* Goodhart & Lastra, *supra* note 158, at 39–62.

188. For an analysis of Pringle and Gauweiler, see generally LASTRA, *supra* note 24, at 263–64, 290, 330–32. For an analysis of Weiss, see DE BOER & VAN'T KLOOSTER, *supra* note 40, at 10. *See also* EUR. CENT. BANK, CONTINUITY AND CHANGE—HOW THE CHALLENGES OF TODAY PREPARE THE GROUND FOR TOMORROW (2022), https://www.ecb.europa.eu/pub/pdf/other/ecb.ecblegalconferenceproceedings202204~c2e5739756.en.pdf.

189 . *See* Menelaos Markakis, *Judicial Review of the European Central Bank's Actions*, *in* ACCOUNTABILITY IN THE ECONOMIC AND MONETARY UNION: FOUNDATIONS, POLICY, AND GOVERNANCE 296, 296–97 (2020).

190. Case C-219/17, Berlusconi, Fininvest v. Banca d'Italia, ECLI:EU:C:2018:1023 (Dec. 19, 2018).

191. Case C-255/18, State St. Bank Int'l GmbH v. Banca d'Italia, ECLI:EU:C:2019:539 (June 26, 2019).

192. Raichle v. Fed. Rsrv. Bank of N.Y., 34 F.2d 910, 916 (2d Cir. 1929).

193. *Id.* at 915.

But, as noted above, supervisory and regulatory decisions are certainly reviewable under the APA.

In the U.K., the picture is a bit mixed. There is longstanding jurisprudence holding that the major public law remedy of 'mandamus' cannot be obtained against the BOE.[194] More recently, in *SRM Global Master Fund LP v. The Commissioners of HM Treasury*, the Court of Appeal of England and Wales stressed that, in matters pertaining to the central bank function of lender of last resort, the competent authorities have a large margin of discretion and there would be a breach only if their judgment as to what is in the public interest was manifestly without reasonable foundation.[195] Such a finding in relation to LOLR is unlikely. There have been few cases of judicial review of supervisory decisions, which have been traditionally cloaked with immunity. The *Three Rivers Case* in relation to BCCI is the most notable but it ultimately collapsed at trial when the administrators were unable to prove the case.[196]

This all suggests that as a mechanism of accountability, judicial review of central banks' climate policies and actions may still be somewhat spotty—available in the EU most robustly, in the U.S. only in regard to regulation and perhaps supervision, and in the U.K. the opportunity is most slim. Going forward, this may well be an area that courts wish to revisit in their determinations of justiciability and legislatures in their statutory standing doctrines.

In summary, given how critical concrete standards are to effective legislative and public scrutiny—i.e., core accountability—we suggest a framework of governance principles to undergird such oversight. In order for climate change policies to be legally legitimate and not a risk to the independence of central banks, the national legislature should adopt ex ante a set of principles to oversee new climate initiatives if and as adopted. With a preannounced set of principles, the framework could serve a function

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194. *See* R v. The Governor and Company of the Bank of England (1819) 106 Eng. Rep. 492 (KB); R v. Bank of England (1780) 99 Eng. Rep. 334 (KB). With thanks to Will Bateman and Sir William Blair for observations on this point.

195. SRM Glob. Master Fund LP v. The Comm'rs of HM Treasury [2009] EWCA (Civ) 788 [56] ("The provision of LOLR was a measure which the Tripartite Authorities considered was objectively required to protect the banking system and thus the national economy. Their concerns were strategic and the outcomes of what was done likely to be profound. The nationalization of Northern Rock cannot, I think, be separated out from these matters. It was the chosen means of exit from short term LOLR. The s.5(4) assumptions were as I have explained in line with the conditions on which LOLR is provided. In reality they were an application of policy considerations which, as Lord George explained, underpinned LOLR. In these circumstances the margin of appreciation must be in my judgment be a wide one. As in James and Lithgow, the court would only interfere if it were to conclude that the State's judgment as to what is in the public interest is manifestly without reasonable foundation.").

196. Three Rivers Dist. Council v. Governor and Co. of the Bank of England [2001] AC (HL) 16 (appeal taken from Eng.). We thank Sir William Blair for observations on this point.

analogous to the one that monetary rules once played in constraining the central bank's discretion in the realm of monetary policy.[197] A principles-based framework would be, concretely, the tool that a legislature uses to question central bank leaders in hearings, used to ascertain whether climate change policies are being adopted in ways consistent with prevailing public law, the central bank's mandates, and fairness to the supervised institutions. It would also check against inappropriate use of climate policies to aggrandize a central bank's powers.

Drawing on the lessons and analysis thus far, a proposed framework—and preannounced lines of legislative inquiry—could be articulated as follows:

Principle 1: Central banking tools should not be used to choose climate winners and declare climate losers.

This would give rise to questions surrounding monetary policy as well as supervision—how will any given climate policy favor some sectors over others, in violation of principles of market neutrality?

Principle 2: Central banks should have boundaries and criteria, established by democratically responsive institutions, around whether and to what extent climate change poses financial stability risks that are actionable with central banking tools.

Such a principle prompts lawmakers to ask for the legal interpretation undergirding a central bank's adoption of a new climate-related policy. Where a financial stability justification is concerned, a clear nexus to existing legislative authority should be advanced by the central bank leadership.

Principle 3: Public law values of transparency, due process, and proportionality should be maintained in the design of climate change supervisory policies.

A principle focused on due process and proportionality will place the burden of proof on the central bank to explain the procedures in place to allow affected parties—supervised institutions—to have their concerns about the contours of a policy heard and provide an avenue for challenging a supervisory decision.

Principle 4: Subsidiarity principles urge deference to private sector capacity and less centralized (powerful) institutions to address potential risks from or goals associated with climate change.

Simply, central banks should be able to explain to the legislature why a climate policy is not redundant with ongoing private sector initiatives to

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197. *See generally* Alexander William Salter, *An Introduction to Monetary Policy Rules* (Mercatus Ctr. Geo. Mason Univ., Working Paper, Dec. 4, 2014), https://www.mercatus.org/publications/monetary-policy/introduction-monetary-policy-rules.

facilitate transition and—more important still—why it will not distort those efforts.

Principle 5: Central banks should wrestle with, and publicly communicate, the tradeoffs implicated by climate policy actions—tradeoffs between monetary policy and financial stability policy, and between climate goals and economic competition, in particular.

Where new climate policies are concerned, legislatures may wish to ask central banks to supply a qualitative cost-benefit analysis that clearly wrestles with the trade-offs relevant to a particular jurisdiction.[198]

Principle 6: Central banks should defer, in their adoption and design of climate policies, to democratically responsive institutions—ideally, the legislature. These issues require a concerted effort nationally and internationally with credible commitments involving both public and private entities.

To the extent central banks adopt policies beyond what the legislature has authorized, there should be discernible consequences for the individual policymakers that led the initiative, not unlike the schemes used in the private sector to impose liability on senior managers and executives; public authorities should not be held to a lesser standard of accountability.[199]

Principle 7: Central banks should communicate clearly with the public in general and financial markets in particular about what is achievable with their policy tools and consistent with the rule of law, and remain mindful of the impact that populist pressure can have on the central bank's long-term credibility in the pursuit of the price stability mandate.

Principle 8: Central bank regulatory and supervisory initiatives in pursuit of net zero goals should be subject to judicial review in view of the scope of their individual mandates as well as their interaction with the mandates of other economic regulators.

CONCLUSION

The conversation around central banks and climate change remains in its infancy relative to the long history of central banking. While some central banks—most notably the BOE—have already taken significant strides

198. *See generally* Christina Parajon Skinner, *Whistleblowing and Financial Innovation*, N.C. L. REV. (2016) (discussing cost benefit analysis paradigms); Business Roundtable v. SEC, 647 F.3d 1144, 1149 (D.C. Cir. 2011) (regarding importance of cost benefit analysis to the legitimacy of agency action).

199. *See, e.g.*, *Senior Managers and Certification Regime*, FIN. CONDUCT AUTH. (July 5, 2015), https://www.fca.org.uk/firms/senior-managers-certification-regime (explaining that the SM&CR "is a catalyst for change—an opportunity to establish healthy cultures and effective governance in firms by encouraging greater individual accountability and setting a new standard of personal conduct").

toward developing climate change policy tools, others, like the Fed, are proceeding more cautiously in the absence of clear legal authority to do so. The ECB falls in between.

In examining the diverging frameworks, in view of relevant public law constraints, this Article has urged a set of international principles—norms—to guide central bank law and policy going forward. In particular, it has emphasized the need to construct new mechanisms of accountability where newly devised climate policies come to the fore to ensure the continued legitimacy and credibility of central banks as institutions. Ultimately, then, the principles that this Article develops should ensure that central bank policies aimed at environmental sustainability remain democratically sustainable as well.

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