

# ESSAY

## BANKS AND CLIMATE GOVERNANCE

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*Major banks in the United States and globally have begun to assert an active role in the transition to a low-carbon economy and the reduction of climate risk through private environmental and climate governance. This Essay situates these actions within historical and economic contexts: It explains how the legal foundations of banks' sense of social purpose intersect with their economic incentives to finance major structural transitions in society. In doing so, this Essay sheds light on the reasons why we can expect banks to be at the center of this contemporary transition. This Essay then considers how banks have taken up this role to date. It proposes a novel taxonomy of the various forms of private environmental and climate governance emerging in the U.S. banking sector today. Finally, this Essay offers a set of factors against which to normatively assess the value of these actions. While many scholars have focused on the role of shareholders and equity in private environmental and climate governance, this Essay is the first to position these steps taken by banks within that larger context.*

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## INTRODUCTION

Major banks, both in the United States and globally, have begun to assert an active role in the transition to a low-carbon economy and the reduction of climate risk. All six major U.S. banks have committed publicly to achieve global net-zero emissions by 2050 and to align with the goal of the Paris Agreement on Climate Change to limit global warming to well below 2°C.<sup>1</sup> Particularly significant among these commitments are the declarations, such as that of J.P. Morgan Chase & Co. (JP Morgan Chase), that

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1. Eamon Barrett, *Wells Fargo Is the Last of the Big Six Banks to Issue a Net-Zero Climate Pledge. Now Comes the Hard Part*, *Fortune* (Mar. 9, 2021), <https://fortune.com/2021/03/09/wells-fargo-climate-carbon-neutral-net-zero/> [https://perma.cc/CU3K-6MJ6]. Other large, internationally active banks have made this commitment as well. *Big Banks Join Net-Zero Emissions Alliance*, *Finextra* (Apr. 21, 2021), [www.finextra.com/newsarticle/37903/big-banks-join-net-zero-emissions-alliance](http://www.finextra.com/newsarticle/37903/big-banks-join-net-zero-emissions-alliance) [https://perma.cc/ZVF4-44B5]; see also Paris Agreement to the United Nations Framework Convention on Climate Change, art. 4, Dec. 12, 2015, T.I.A.S. No. 16-1104 (entered into force Nov. 4, 2016, reentered Feb. 19, 2021) [hereinafter *Paris Agreement*]. Article 2(1)(a) of the Paris Agreement commits to a goal of limiting the global increase in temperature to “well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels.” Id. art. 2(1)(a). Article 2(1)(c) of the Agreement specifically links this goal to sustainable finance through the mechanism of “[m]aking finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.” Id. art. 2(1)(c); see also *infra* section III.A.

these banks will not only reduce their own operational emissions but also that they will achieve net-zero emissions with respect to their lending portfolios.<sup>2</sup> Likewise, Citibank has adopted the “2025 Sustainable Progress Strategy,” committing \$250 billion to finance and promote a smooth transition to a low-carbon economy through investments in renewable energy, clean technology, and sustainable agriculture and transportation, among other industries.<sup>3</sup> Other major U.S. banks, including Bank of America, Goldman Sachs, and Wells Fargo have made similar commitments not only to reduce emissions from their operations but also to finance “green” technologies and industries that will promote a smooth transition to a low-carbon economy and to reduce climate risk in their lending portfolios.<sup>4</sup>

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2. See David Benoit, JPMorgan Pledges to Push Clients to Align With Paris Climate Agreement, *Wall St. J.* (Oct. 6, 2020), <https://www.wsj.com/articles/jpmorgan-pledges-to-push-clients-to-align-with-paris-climate-agreement-11602018245> (on file with the *Columbia Law Review*); Press Release, JPMorgan Chase & Co., JPMorgan Chase Expands Commitment to Low-Carbon Economy and Clean Energy Transition to Advance Sustainable Development Goals (Feb. 25, 2020), <https://www.jpmorganchase.com/news-stories/jpmorgan-chase-expands-commitment-to-low-carbon-economy-and-clean-energy/> [<https://perma.cc/NU3T-MPV4>] [hereinafter JP Morgan Chase Expands Commitment].

3. 2025 Sustainable Progress Strategy: Low Carbon Transition, Citigroup, Inc., <https://www.citigroup.com/citi/sustainability/lowcarbon.htm> [<https://perma.cc/G7N3-SPCD>] (last visited July 22, 2021).

4. See Our Commitment to Environmental Sustainability, Bank of Am., <https://about.bankofamerica.com/en/making-an-impact/environmental-sustainability> [<https://perma.cc/XF5K-8EEH>] (last visited July 22, 2021) (stating that Bank of America intends to achieve “net zero greenhouse gas” emissions by 2050 through its “global business strategy” and work with its partners); Goldman Sachs, Goldman Sachs Environmental Policy Framework, <https://www.goldmansachs.com/citizenship/environmental-stewardship/epf-pdf.pdf> [<https://perma.cc/66A7-CXYH>] [hereinafter Goldman Sachs, Environmental Policy Framework] (last visited July 23, 2021) (“[W]e believe that capital markets can and should play an important role in addressing environmental challenges including climate change. To that end, we are committed to catalyzing innovative financial solutions and market opportunities to help address climate change.”); Advancing Environmental Sustainability, Wells Fargo, <https://www.wellsfargo.com/about/corporate-responsibility/environment> [<https://perma.cc/JKD6-93ME>] (last visited July 22, 2021) (stating that Wells Fargo is committed to transitioning to a “low-carbon economy” and reducing “the impacts of climate change” on their business, communities, and customers). Various public and private entities have identified criteria against which to measure whether an investment is environmentally sustainable or “green.” See 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, 14–15. Such a taxonomy is needed to promote a shared understanding among investors across borders and to reduce concerns about greenwashing. *Id.* at 14 (“[G]reenwashing refers to the practice of gaining an unfair competitive advantage by marketing a financial product as environmentally friendly, when in fact basic environmental standards have not been met.”). For example, under Regulation (EU) 2020/852, an economic activity is considered sustainable if it contributes to at least one of six objectives: “climate change mitigation; climate change adaptation; the sustainable use and protection of water and marine resources; the transition to a circular economy; pollution prevention and control; and the protection and restoration of biodiversity and ecosystems.” *Id.* at 17; *id.* at 22 (noting that an economic activity should qualify where it “directly enables other activities to make a

These building blocks of bank strategy that orient capital flows toward more sustainable investments and push debtors to be more environmentally responsible represent significant new forms of private environmental governance.<sup>5</sup> In other words, rather than government regulators dictating compliance with environmental standards to address climate risks and promote sustainable economic activities, banks themselves are acting as change agents with respect to their lending portfolios in the first instance and also, in some cases, in regard to their securities underwriting and asset management businesses.<sup>6</sup>

The banks' actions are consistent with appeals from major nongovernmental organizations (NGOs) representing investors. For example, Ceres, a leading investor-oriented NGO, has called for banks to align with

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substantial contribution" to at least one of the six objectives); *id.* at 23 (noting that contribution to at least one of the objectives is required).

5. See Sarah E. Light & Eric W. Orts, *Parallels in Public and Private Environmental Governance*, 5 *Mich. J. Env't & Admin. L.* 1, 3 (2015) [hereinafter Light & Orts, *Parallels*] (defining private environmental governance as "the traditionally 'governmental' functions of environmental standard setting and enforcement that private actors, including business firms and nongovernmental organizations (NGOs), adopt to address environmental concerns" and observing that private actors adopt similar tools as public regulators); Michael P. Vandenberg, *Private Environmental Governance*, 99 *Cornell L. Rev.* 129, 133 (2013) [hereinafter Vandenberg, *Private Environmental Governance*] (defining private environmental governance as "play[ing] the standard-setting, implementation, monitoring, enforcement, and adjudication roles traditionally played by public regulatory regimes"); cf. Cary Coglianese & David Lazer, *Management-Based Regulation: Prescribing Private Management to Achieve Public Goals*, 37 *Law & Soc'y Rev.* 691, 696–700 (2003) (discussing private firms' actions to achieve public-minded goals). There is also a substantial amount of corporate governance literature on which this Essay builds regarding the disciplining effect on borrowers that bank debt can have. See generally Douglas G. Baird & Robert K. Rasmussen, *Private Debt and the Missing Lever of Corporate Governance*, 154 *U. Pa. L. Rev.* 1209 (2006) (developing a discussion around the role of creditors in firm governance); George G. Triantis & Ronald J. Daniels, *The Role of Debt in Interactive Corporate Governance*, 83 *Calif. L. Rev.* 1073, 1982–90 (1995) (examining the role of lenders in correcting "managerial slack"); Yesha Yadav, *The Case for a Market in Debt Governance*, 67 *Vand. L. Rev.* 771, 783 (2014) (proposing a market for trading lender control rights over debtor corporate governance). Moreover, this work builds on the insights of legal scholars who have argued that banks can serve an essential function as market gatekeepers. Cf. John C. Coffee, Jr., *Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms*, 84 *B.U. L. Rev.* 301, 302 (2004) (discussing the gatekeeping function served by, among others, financial analysts at investment banks). It also generally engages the body of scholarly literature discussing corporate purpose, insofar as much of the debate would call for greater attention to climate and sustainability issues. E.g., Alex Edmans, *Grow the Pie: How Great Companies Deliver Both Purpose and Profit* 38–57 (2020) (arguing that companies can promote broad social and environmental goals and still realize profits); Oliver Hart & Luigi Zingales, *Companies Should Maximize Shareholder Welfare Not Market Value*, 2 *J.L. Fin. & Acct.* 247, 270 (2017) (arguing that corporations can act to promote shareholder interests beyond profit maximization, including interests in the environment).

6. This Essay's goal is not to evaluate the overall balance of banks' portfolios but rather to focus on key aspects of the role that banks and the credit they provide are beginning to play in the transition to a low-carbon economy, highlighting the ways in which banks can play a unique role as compared to other forms of private governance.

the goals of the Paris Agreement by engaging in more robust climate risk assessment and disclosure and setting targets to achieve net-zero emissions within each affected sector of their lending portfolios.<sup>7</sup> The banks' actions are likewise facilitated by the actions of NGOs of which they are members, including the Partnership for Carbon Accounting Financials (PCAF). In 2020, PCAF launched the Global GHG Accounting and Reporting Standard for the Financial Industry, the first standard for financial institutions to measure and report greenhouse gas (GHG) emissions in their lending and investment portfolios.<sup>8</sup>

These actions by banks resemble the actions of firms in other industries that have sought to reduce emissions and promote environmentally positive actions throughout their value chain.<sup>9</sup> In the non-financial corporate space, Walmart has used its market power to insist that its suppliers report on and reduce their GHG emissions.<sup>10</sup> Through Project Gigaton, Walmart aims to avoid one billion metric tons (one gigaton) of

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7. Financing a Net-Zero Economy: Measuring and Addressing Climate Risk for Banks, Ceres (Oct. 19, 2020), <https://www.ceres.org/resources/reports/financing-net-zero-economy-measuring-and-addressing-climate-risk-banks> [<https://perma.cc/US8X-N85Q>].

8. The Partnership for Carbon Accounting Financials (PCAF) Launches First Global Standard to Measure and Report Financed Emissions, P'ship for Carbon Acct. Fins. (Nov. 18, 2020), <https://carbonaccountingfinancials.com/newsitem/the-partnership-for-carbon-accounting-financials-pcaf-launches-first-global-standard-to-measure-and-report-financed-emissions#newsitemtext> [<https://perma.cc/9JPE-DLLR>]. The standard allows for the measurement of "financed emissions of six asset classes: listed equity and corporate bonds, business loans and unlisted equity, project finance, commercial real estate, mortgages and motor vehicle loans." *Id.* Including Bank of America and Morgan Stanley from the United States, sixteen financial institutions globally participated in creating the PCAF standard and after receiving "public consultation" and feedback from "financial institutions, sustainable finance stakeholder groups, policy makers, data providers, consultants, and civil society organizations." *Id.*

9. The notion of private environmental governance is distinct from the concept of "second-order agreements" such as corporate acquisition, credit agreements, and "good neighbor" agreements between private firms that allocate *public* regulatory burdens within the private sphere. Michael P. Vandenbergh, *The Private Life of Public Law*, 105 *Colum. L. Rev.* 2029, 2031 (2005) (identifying these "second-order agreements" as an important but underappreciated role played by private actors in public regulatory enforcement); cf. Rory Van Loo, *The New Gatekeepers: Private Firms as Public Enforcers*, 106 *Va. L. Rev.* 467, 496, 499–502 (2020) (observing and assessing the increasing role of firms as enforcers of public law and regulation).

10. Walmart and other firms have used supply-chain contracts to insist upon other environmental governance provisions within their value chain, just as governments use their powers of procurement to prefer environmentally friendlier goods and services. See Michael P. Vandenbergh, *The New Wal-Mart Effect: The Role of Private Contracting in Global Governance*, 54 *UCLA L. Rev.* 913, 943 (2007) (examining supply chain contracts as a form of private environmental governance); see also Sarah E. Light & Eric W. Orts, *Public and Private Procurement in Environmental Governance*, in *Policy Instruments in Environmental Law* (Kenneth Richards & Josephine van Zeben eds., Edward Elgar Publishing 2020) (discussing public procurement in the United States and EU as a parallel to private supply chain management).

carbon dioxide emissions in its supply chain by 2030.<sup>11</sup> Technology firms have also made public commitments. Google reports that it has been carbon neutral since 2007, and aims to be carbon-free in its operations by 2030.<sup>12</sup> Other major firms in diverse industries have likewise required their suppliers to disclose and reduce GHG emissions through the CDP (formerly Carbon Disclosure Project) Supply Chain initiative.<sup>13</sup> In addition, there has been a great deal of scholarly focus on the role of shareholders in advancing the transition to a low-carbon economy and in reducing climate risk. Legal scholars have argued that shareholders have an especially important role to play in reducing climate risk and shaping firm behavior, particularly, “universal owners” like Vanguard, State Street, and BlackRock, which collectively hold almost a third of all public equity.<sup>14</sup>

Thus, the notion that a firm would seek to reduce greenhouse gas emissions within its value chain as a form of private environmental governance is not new.<sup>15</sup> However, unlike other major corporations—even those as dominant in their industry as Walmart or Vanguard—banking institutions, as sources of private environmental and climate governance, have

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11. Project Gigaton, Walmart Sustainability Hub, <https://www.walmartsustainabilityhub.com/project-gigaton> [<https://perma.cc/8D2R-TY7U>] (last visited July 22, 2021). In its first two years, Project Gigaton reported ninety-three million metric tons of carbon dioxide emissions avoided in connection with the program. Press Release, Walmart, Walmart Launches New Reusable Bag Campaign; Announces 93 Million Metric Tons of Supplier Emission Reductions Through Project Gigaton and Announces New Sustainable Textile Goals (Apr. 10, 2019), <https://corporate.walmart.com/newsroom/2019/04/10/walmart-launches-new-reusable-bag-campaign-announces-93-million-metric-tons-of-supplier-emission-reductions-through-project-gigaton-and-announces-new-sustainable-textile-goals> [<https://perma.cc/BRD3-UY58>].

12. Google, Realizing a Carbon-Free Future: Google’s Third Decade of Climate Action 2 (2020), <https://www.gstatic.com/gumdrop/sustainability/carbon-free-by-2030.pdf> [<https://perma.cc/ML8S-FBV6>].

13. Supply Chain, CDP, <https://www.cdp.net/en/supply-chain> [<https://perma.cc/X625-E252>] (last visited Aug. 1, 2021) (noting that CDP’s supply chain consists of over 200 members, \$5.5 trillion in purchasing power, and requests for disclosure from more than 15,000 suppliers).

14. See, e.g., Madison Condon, Externalities and the Common Owner, 95 Wash. L. Rev. 1, 4–5 (2020) (observing that common owners control significant shares of major firms and have pressured firms to address emissions and climate change); John C. Coffee, Jr., The Future of Disclosure: ESG, Common Ownership, and Systematic Risk 8, 24–25 (Eur. Corp. Governance Inst., Law Working Paper No. 541/2020, 2021), <https://ssrn.com/abstract=3678197> [<https://perma.cc/U7DU-WC5E>] [hereinafter Coffee, Future of Disclosure] (arguing that the SEC should recognize that common owners have different disclosure needs than retail investors and should update disclosure guidance accordingly).

15. Standard reporting metrics divide GHG emissions into three “Scopes”: Scope 1 emissions are direct, on-site emissions from sources an entity owns or controls; Scope 2 emissions are indirect emissions from purchased heat and electricity; and Scope 3 emissions are all other indirect emissions within the value chain, including employee business travel. FAQ, Greenhouse Gas Protocol, <https://www.ghgprotocol.org/sites/default/files/ghgp/public/FAQ.pdf> [<https://perma.cc/Q97S-M9V9>] (last visited July 22, 2021) (providing definitions for the three “Scopes”). Thus, emissions within a bank’s value chain—including its lending portfolio—constitute Scope 3 emissions.

several unique features that warrant special focus. First, banks hold a special place in society as financial intermediaries.<sup>16</sup> Second, banks play their capital-allocation role in reaction to a particular set of economic incentives—to mitigate financial risk and to accelerate high-potential projects—which motivate them to facilitate the kinds of structural change required for transition to a low-carbon economy. Third, banks, as one type of private creditor, also possess significant contractual power over the operations and cashflow—and thus behavior—of their borrowers.<sup>17</sup> Regardless of what position one may take on the authority of U.S. financial regulators to address climate change through public law—a subject on which there remains disagreement<sup>18</sup>—the forms of private environmental governance that banks

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16. There is also a substantial literature in finance recognizing the role of banks as “monitors” of corporate governance, which includes borrower behavior, and how such monitoring produces information externalities that benefit other stakeholders. See, e.g., Douglas W. Diamond, *Financial Intermediation and Delegated Monitoring*, 51 *Rev. Econ. Stud.* 393, 393, 395 (1984) (finding that financial intermediaries like banks have net cost advantages in delegated monitoring of loan contracts over other potential monitors); Carlo M. Gallimberti, Richard A. Lambert & Jason J. Xiao, *Bank Relations and Borrower Corporate Governance and Incentive Structures* 5 (Aug. 30, 2017), <https://ssrn.com/abstract=3029930> [<https://perma.cc/K6DW-RKVR>] (unpublished manuscript) (observing different mechanisms to reduce monitoring costs depending upon the relationship between borrower and lender). Generally, these articles tend to focus on borrower mismanagement or misbehavior. There is also literature in this space that examines the economic function of banks with regard to their monitoring and information production roles. E.g., Diamond, *supra*, at 393–95; Hayne E. Leland & David H. Pyle, *Informational Asymmetries, Financial Structure, and Financial Intermediation*, 32 *J. Fin.* 371, 383–84 (1977); Joseph E. Stiglitz & Andrew Weiss, *Credit Rationing in Markets With Imperfect Information*, 71 *Am. Econ. Rev.* 393, 393 (1981). This Essay builds on these insights in the finance literature by adding further specific context of borrowers’ environmental footprints and the role that debt can play in monitoring and encouraging climate-positive borrower behavior.

17. As Professors Douglas Baird and Robert Rasmussen have pointed out, institutions that issue private debt, like banks, exercise powerful “levers” over the governance of a company via the covenants imposed in a loan. See Baird & Rasmussen, *supra* note 5, at 1227–29.

18. Compare 21st Century Economy: Protecting the Financial System From Risks Associated With Climate Change: Hearing Before the S. Comm. on Banking, Hous. & Urb. Affs., 117th Cong. 1 (2021) (statement of John H. Cochrane), <https://www.banking.senate.gov/imo/media/doc/Cochrane%20Testimony%203-18-21.pdf> [<https://perma.cc/KD5C-HBT7>] (stating that regulators are “not allowed to ‘mobilize’ the financial system, to choose projects they like and de-fund those they disfavor”), and Christina Parajon Skinner, *Central Banks and Climate Change*, 75 *Vand. L. Rev.* (forthcoming 2021) (manuscript at 58), <https://ssrn.com/abstract=3703142> [<https://perma.cc/BXY7-7TR7>] (arguing that the Federal Reserve Bank has limited authority to address climate change, and only on a defensive, rather than an offensive, basis), with Emanuele Campiglio, Yannis Dafermos, Pierre Monnin, Josh Ryan-Collins, Guido Schotten & Misa Tanaka, *Climate Change Challenges for Central Banks and Financial Regulators*, 8 *Nature Climate Change* 462, 462 (2018) (identifying physical and transitional risks as challenges for public financial regulators), Peter Conti-Brown & David A. Wishnick, *Technocratic Pragmatism, Bureaucratic Expertise, and the Federal Reserve*, 130 *Yale L.J.* 636, 687–99 (2021) (offering an assessment of the ways in which the Federal Reserve Bank can address climate change, among other global challenges, along a spectrum of tools that promote “climate pragmatism”), and Sarah E. Light, *The Law of the Corporation as Environmental Law*, 71 *Stan. L. Rev.* 137, 205–06 (2019).

are adopting to address climate change are central to their legal, economic, and historic roles. This Essay is the first to offer a descriptive and analytical account of the tools that banks have at their disposal to lead and innovate in the private climate governance space, as well as to offer normative criteria against which to evaluate the impact of these tools.<sup>19</sup>

Part I offers a brief primer on private environmental governance in general and private climate governance more specifically. Part II sharpens the focus to banks in particular. It considers how banks' economic role and financial market structures provide incentives for these institutions to adopt private governance mechanisms and arrangements to solve problems that impact both finance and society. In particular, Part II considers three such private governance arrangements that may extend to climate change. First, the industry has developed measures to mitigate and screen risk that can motivate borrower behavior in environmentally responsible ways. Second, and relatedly, banks' appetite for risk and reward can propel them to invest in sustainable and clean energy projects with a combination of debt, equity, and advice. Third, and regarding the industry's structure,

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[hereinafter Light, Law of Corporation] (arguing that financial and other regulators should take climate change into account more actively in interpreting their legal mandates).

19. There is significant literature on this topic. For instance, there has been extensive scholarship in law and finance assessing specific types of sustainable financial instruments, such as the issuance of green bonds, or private environmental standards, such as the Equator Principles. See, e.g., Caroline Flammer, *Corporate Green Bonds*, J. Fin. Econ. (forthcoming 2021) (manuscript at 5–7) (on file with the *Columbia Law Review*) (finding that corporate issuers improve environmental performance after issuance of such bonds); Stephen Kim Park, *Investors as Regulators: Green Bonds and the Governance Challenges of the Sustainable Finance Revolution*, 54 Stan. Int'l. L.J. 1, 17–30 (2018) (assessing green bonds as a form of private environmental governance); Andrew Hardenbrook, Note, *The Equator Principles: The Private Financial Sector's Attempt at Environmental Responsibility*, 40 Vand. J. Transnat'l L. 197, 226–31 (2007) (examining whether the Equator Principles have positively impacted the environment); Malcolm Baker, Daniel Bergstresser, George Serafeim & Jeffrey Wurgler, *Financing the Response to Climate Change: The Pricing and Ownership of U.S. Green Bonds* 5–6 (Nat'l Bureau of Econ. Rsch., Working Paper No. 25194, 2020) (surveying green bonds in the United States). In addition, there is an extensive literature on impact or “ESG” (Environmental, Social, and Governance) investing, including environmental impact investing. See, e.g., Christopher Geczy, Jessica S. Jeffers, David K. Musto & Anne M. Tucker, *Contracts With (Social) Benefits: The Implementation of Impact Investing*, J. Fin. Econ. (forthcoming 2021) (manuscript at 2) (on file with the *Columbia Law Review*) (assessing how impact fund contracts “reflect multiple goals”); Lubos Pastor, Robert F. Stambaugh & Lucian A. Taylor, *Sustainable Investing in Equilibrium*, J. Fin. Econ. (forthcoming 2021) (manuscript at 17) (on file with the *Columbia Law Review*) (“[S]ustainable investing generates positive social impact in two ways. First, it leads firms to become greener. Second, it induces more real investment by green firms and less investment by brown firms.”). While these literatures examine sustainable finance broadly, they do not always focus squarely on banks. This Essay therefore aims to offer a more comprehensive assessment of the role of private climate governance by banks in this space that is not limited to a single financial instrument or class of investors. Relatedly, we recognize that there is a larger story about the role of creditors, more broadly, in climate governance. This Essay focuses on banks given the unique confluence of their historic role, current initiatives, and debt-related tools of influence and control.



the homogeneity and competitiveness of the banking sector compels banks to experiment together—to associate—to address public policy problems that implicate the integrity and reputation of the banking sector as a whole. Banks' desire to solve complex, transitional problems collectively has, and will likely continue to, include climate change.<sup>20</sup> Thus, all of these actions, though private, serve information-signaling functions to other industries and all of society about risk and climate—information that is highly valuable as society transitions to a low-carbon economy.

Part III builds on the theory of Part II—that banks possess a natural propensity and aptitude for private climate governance—to offer a descriptive and analytical account of the specific actions that banks are taking to address climate risk and to promote the transition to a low-carbon economy. In doing so, Part III creates a novel taxonomy categorizing four overarching categories of measures that banks have, to date, innovated to address climate change. These include: (1) measures to address banks' operational/onsite emissions; (2) the promotion of portfolio analysis, carbon emissions targets, and negative screens to reduce exposure to climate-related risk; (3) measures by which banks undertake to accelerate or positively facilitate the transition by dedicating financing, investing equity, offering advice, and engaging in climate philanthropy; and (4) the use of voluntary association including the development of collective industry efforts to establish carbon pricing, set standards around disclosure, and brainstorm best practices. Part III shows that each of these measures accomplishes one or more of the goals of private governance that Part II discusses—to motivate climate-positive borrower behavior, to facilitate technological development and research, to establish best practices, and to increase transparency.

Part IV turns to the normative by discussing the broader implications that follow from banks engaging in private environmental and climate governance. First, we explain some of the normative criteria against which the banks' actions could be measured, including their effectiveness, potential for global impact, accountability, and potential for greenwashing, among others.<sup>21</sup> Part IV concludes by offering some additional considerations that arise only in the banking context, including the relative ability of debt versus equity to engage in this supervisory role with respect to other firms' actions.

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20. In addition to these tools, banks, like other major firms, can focus on the impact of their own operations with respect to climate change. See *infra* Part III.

21. See *infra* section IV.A. See generally Light & Orts, *Parallels*, *supra* note 5 (suggesting normative criteria against which to evaluate private environmental governance) For a definition of "greenwashing," see 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, 14.

## I. PRIVATE ENVIRONMENTAL AND CLIMATE GOVERNANCE

This Part offers a basic primer on private environmental governance. It then highlights the recent growth in private climate governance, in particular in the financial industry to address the complexities and costs of the transition to a low-carbon economy.

A. *Private Environmental Governance*

Private environmental governance is an inclusive term that refers to the “traditionally ‘governmental’ functions of environmental standard setting and enforcement that private actors, including business firms and non-governmental organizations (NGOs), adopt to address environmental concerns.”<sup>22</sup> In terms of its relationship to formal public environmental law, some legal scholars have argued that private environmental governance should be recognized as a form of law.<sup>23</sup> Others have argued that private environmental governance can fill gaps in public law, operate in parallel to public law, and serve as “laboratories of experimentation” for public law.<sup>24</sup> While some have questioned whether a rise in private environmental governance will crowd out support for public law and regulation,<sup>25</sup> at least some evidence suggests that private environmental governance can lead to greater support for public law initiatives on the same subject matters.<sup>26</sup>

Private environmental governance can address many different environmental concerns.<sup>27</sup> For example, the Marine Stewardship Council

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22. *Id.* at 3; Vandenberg, *Private Environmental Governance*, *supra* note 5, at 133 (describing private environmental governance as “a new model of legal and extralegal influences on the environmentally significant behavior of corporations and households”).

23. Vandenberg, *Private Environmental Governance*, *supra* note 5, at 133–34 (arguing that private environmental governance belongs in the standard model of positive law and represents a significant development in that field).

24. Light & Orts, *Parallels*, *supra* note 5, at 66; Sarah E. Light, *The Role of Universities in Private Environmental Governance Experimentalism*, 33 *Org. & Env’t* 57, 58 (2020).

25. See, e.g., Neil Malhotra, Benoît Monin & Michael Tomz, *Does Private Regulation Preempt Public Regulation?*, 113 *Am. Pol. Sci. Rev.* 19, 32 (2019) (finding a reduction in support for public regulation in the face of corporate action to protect the environment, even when corporate action was relatively small).

26. E.g., David A. Dana & Janice Nadler, *Regulation, Public Attitudes, and Private Governance*, 16 *J. Empirical Legal Stud.* 69, 84 (2019) (finding a positive impact of private corporate action on support for public policy on sustainable forestry and cage-free eggs); Ash Gillis, Michael Vandenberg, Kaitlin Raimi, Alex Maki & Ken Wallston, *Convincing Conservatives: Private Sector Action Can Bolster Support for Climate Change Mitigation in the United States*, 73 *Energy Rsch. & Soc. Sci.* 1, 1–4 (2021) (assessing the impact of learning about private governance on support for public policy across the ideological spectrum).

27. Private environmental governance operates in parallel to public law in many subject matter areas. Sarah E. Light & Michael P. Vandenberg, *Private Environmental Governance*, in 2 *Decision Making in Environmental Law*, *Encyclopedia of Environmental Law* 253, 256 & tbl.II.19.1 (LeRoy C. Paddock, Robert L. Glicksman & Nicholas S. Bryner,

standards certify fisheries as “sustainable.”<sup>28</sup> The Forest Stewardship Council standards focus on sustainable forest management.<sup>29</sup> The American Chemistry Council’s Responsible Care program, an early example of industry-led private governance, focuses on improving stewardship of toxic chemicals.<sup>30</sup> The LEED Certification standards created by the U.S. Green Building Council focus on improving the energy efficiency and environmental impact of the built environment.<sup>31</sup>

The tools of environmental governance also parallel the tools adopted by public law regulators.<sup>32</sup> Just as public law regulators can use informational regulation, prescriptive rules, market-leveraging instruments like taxes or subsidies, procurement, and insurance mandates to govern environmental behavior and set environmental standards, so, too, can private actors in diverse contexts.<sup>33</sup> For example, private firms can employ mechanisms to “green” their supply chain, similar to the way governments employ environmental or “green” procurement rules to create markets for environmental products and services. A well-known example, Walmart’s Project Gigaton encourages suppliers to measure, manage, and

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eds., Edward Elgar Publishing 2016) (identifying forests, fisheries, toxics and pesticides, hydraulic fracturing, hazardous waste management, and climate change as examples of areas in which both public law regulators and private governance operate).

28. What Does the Blue MSC Label Mean?, Marine Stewardship Council, <https://www.msc.org/what-we-are-doing/our-approach/what-does-the-blue-msc-label-mean> [<https://perma.cc/74EB-SDCW>] (last visited July 22, 2021).

29. Forest Management Certification, Forest Stewardship Council, <https://fsc.org/en/forest-management-certification> [<https://perma.cc/59ZX-S4VY>] (last visited July 22, 2021). See generally Benjamin Cashore, Graeme Auld & Deanna Newsom, *Governing Through Markets: Forest Certification and the Emergence of Non-State Authority* (2004) (describing the development of the Forest Stewardship Council as supported by, among others, major lumber retailers like Home Depot).

30. See Responsible Care: Driving Safety & Industry Performance, Am. Chemistry Council, <https://responsiblecare.americanchemistry.com> [<https://perma.cc/K4SP-RF2P>] (last visited July 22, 2021); see also Andrew A. King & Michael J. Lenox, *Industry Self-Regulation Without Sanctions: The Chemical Industry’s Responsible Care Program*, 43 *Acad. Mgmt. J.* 698, 698 (2000).

31. LEED Rating System, U.S. Green Bldg. Council, <https://www.usgbc.org/leed> [<https://perma.cc/326P-H9FN>] (last visited July 22, 2021).

32. Light & Orts, *Parallels*, supra note 5, at 23.

33. *Id.*; see also Carolyn Kousky & Sarah E. Light, *Insuring Nature*, 69 *Duke L.J.* 323, 353–54 (2019) (focusing on insurance); Sarah E. Light, *The New Insider Trading: Environmental Markets Within the Firm*, 34 *Stan. Env’t L.J.* 3, 4–5 (2015) [hereinafter Light, *New Insider Trading*] (focusing on market-leveraging tools). See generally Light & Orts, *Parallels*, supra note 5, at 3 (focusing on procurement).

ultimately reduce greenhouse gas emissions from Walmart's massive supply chain.<sup>34</sup> As of 2021, more than sixty national and subnational governments around the world have adopted some form of carbon pricing.<sup>35</sup> Private firms have followed suit. In 2020, more than 850 companies reported to the CDP that they employ internal carbon pricing, with more than 1,100 additional firms reporting that they intended to employ internal carbon pricing within the following two years.<sup>36</sup> For example, Microsoft has adopted a private carbon fee to achieve its net-zero emissions goal in certain areas of its operations.<sup>37</sup> And just as public regulators can require the purchase of insurance—a legal mandate that may reduce environmentally risky behavior (such as building in a flood zone) by making such choices more costly—so, too, can private insurance firms adopt rules that affect environmentally minded behavior.<sup>38</sup>

B. *Private Climate Governance and the Transition to a Low-Carbon Economy*

Private climate governance, a form of environmental governance, is a growing phenomenon, with private actors like NGOs, standards certification bodies, industry associations, and firms themselves adopting new measures to address climate change.<sup>39</sup> Private climate governance includes not only efforts by private actors to reduce greenhouse gas emissions but also efforts to facilitate the transition to a low-carbon economy and to promote adaptation and resilience to a changing climate.

The Intergovernmental Panel on Climate Change (IPCC) has concluded that both the gradual physical effects of climate change—including sea level rise, increases in ocean and land surface temperatures, biodiversity loss, and ocean acidification—as well as extreme weather events like

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34. See Project Gigaton FAQs, Walmart Sustainability Hub, <https://www.walmart.com/sustainabilityhub.com/climate/project-gigaton/faqs> [https://perma.cc/7KE4-H445] (last visited Aug. 14, 2021).

35. Carbon Pricing Leadership Coal., Carbon Pricing Leadership Report 2020/21, at 9 (2021), [https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/60ba4a7d2f4d4b6e0ace36c4/1622821505499/CPLC%2BReport%2B2021\\_Final.pdf](https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/60ba4a7d2f4d4b6e0ace36c4/1622821505499/CPLC%2BReport%2B2021_Final.pdf) [https://perma.cc/2KPD-Y4HM] (citing World Bank, State and Trends of Carbon Pricing 2021, at 13 (2021), <https://openknowledge.worldbank.org/bitstream/handle/10986/35620/9781464817281.pdf?sequence=12&isAllowed=y> [https://perma.cc/L4QK-KBJ7]).

36. World Bank, State and Trends of Carbon Pricing 2021, at 52 (2021), <https://openknowledge.worldbank.org/bitstream/handle/10986/35620/9781464817281.pdf?sequence=12&isAllowed=y> [https://perma.cc/L4QK-KBJ7].

37. See Light, New Insider Trading, *supra* note 33, at 41–45 (discussing Microsoft's internal carbon price and net zero commitments).

38. See Kousky & Light, *supra* note 33, at 364 (discussing how insurers could provide lower premiums or lower liability insurance for securing coverage plans that are environmentally friendly); see also Christina Parajon Skinner, Executive Liability for Anti-Money Laundering Controls, 116 Colum. L. Rev. Sidebar 13–16 (2016) (arguing that the private market has the capability to develop standards that have similar regulatory effects as those employed in existing public regulatory systems).

39. Michael P. Vandenbergh & Jonathan M. Gilligan, Beyond Politics: The Private Governance Response to Climate Change 119–62 (2017).

storms and wildfires would be worse if warming were to reach 2°C than if it were capped at 1.5°C.<sup>40</sup> To achieve this goal of limiting warming to 1.5°C, the IPCC has concluded that global greenhouse gas emissions must be reduced to net zero by around 2050.<sup>41</sup> The Paris Agreement has likewise made clear that avoiding the most catastrophic impacts of climate change would require a global transition away from burning fossil fuels by the middle of the twenty-first century.<sup>42</sup> This transition to a low-carbon economy thus requires not only mitigating (reducing) GHG emissions by shifting away from fossil-fuel generated power but also promoting the use of clean, renewable energy sources. Article 2(1)(c) of the Paris Agreement specifically links this goal to sustainable finance through the mechanism of “[m]aking finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.”<sup>43</sup>

The transition to a low-carbon economy in this short time frame would be “unprecedented” in scale and would require “rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems.”<sup>44</sup> More concretely, the International Energy Agency (IEA) has suggested a pathway to net zero that focuses in the first instance on clean power and transportation.<sup>45</sup> A 2021 IEA report notes the need for “improvements in the efficiency of industrial equipment and heavy transport” and the importance of “lay[ing] the groundwork” and developing “viable business models” for new clean energy technologies like low-carbon liquids and gases and carbon capture.<sup>46</sup> Notably, the report underscores the importance of private finance and debt in particular—explaining that, in their “climate-driven

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40. Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C*, at 5–8 (Valérie Masson-Delmotte, Panmao Zhai, Hans-Otto Pörtner, Debra Roberts, Jim Skea, Priyadarshi R. Shukla, Anna Pirani, Wilfran Moufouma-Okia, Clotilde Péan, Roz Pidcock, Sarah Connors, J. B. Robin Matthews, Yang Chen, Xiao Zhou, Melissa I. Gomis, Elisabeth Lonnoy, Tom Maycock, Melinda Tignor & Tim Waterfield eds., 2019), [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15\\_Full\\_Report\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf) [<https://perma.cc/T6NB-D9XB>] [hereinafter IPCC 1.5°C Report] (reporting “the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways[] in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty”).

41. *Id.* at 12–15 (listing multiple potential pathways to achieve this net-zero goal).

42. See Adoption of the Paris Agreement, U.N. Framework Convention on Climate Change, Paris Agreement ¶¶ 106–133, Dec. 12, 2015, U.N. Doc. FCCC/CP/2015/L.9.

43. Paris Agreement, *supra* note 1, art. 2(1)(c).

44. IPCC 1.5°C Report, *supra* note 40, at 15.

45. See Int’l Energy Agency, *Net Zero by 2050: A Roadmap for the Global Energy Sector* 14 (2021), [https://iea.blob.core.windows.net/assets/405543d2-054d-4cbd-9b89-d174831643a4/NetZeroBy2050-ARoadmapfortheGlobalEnergySector\\_CORR.pdf](https://iea.blob.core.windows.net/assets/405543d2-054d-4cbd-9b89-d174831643a4/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf) [<https://perma.cc/2VA5-J4TY>] [hereinafter IEA, Roadmap].

46. See Int’l Energy Agency, *Financing Clean Energy Transitions in Emerging and Developing Economies* 14 (2021) [https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs\\_WorldEnergyInvestment2021SpecialReport.pdf](https://iea.blob.core.windows.net/assets/6756ccd2-0772-4ffd-85e4-b73428ff9c72/FinancingCleanEnergyTransitionsinEMDEs_WorldEnergyInvestment2021SpecialReport.pdf) [<https://perma.cc/LAF9-9NW5>].

scenarios, over 70% of clean energy investments are privately financed, especially in renewable power and efficiency.”<sup>47</sup> The IEA acknowledges public finance as key for supporting grid infrastructure and posits that public finance may draw private capital, which could then become the main financial enabler for technologies at early stage of readiness and, when the time comes, for scale.<sup>48</sup>

With respect to the costs of this transition, including investments in new technologies, estimates depend upon numerous assumptions; however, recent estimates range from the hundreds of billions of dollars well into the trillions. For example, the IPCC has determined that “[a]dditional annual average energy-related investments for the period 2016 to 2050 in pathways limiting warming to 1.5°C compared to pathways without new climate policies beyond those in place today are estimated to be around 830 billion USD2010.”<sup>49</sup> The IEA has estimated,

Annual investment in transmission and distribution grids expands from USD 260 billion today to USD 820 billion in 2030. [To increase the needed number of public electric vehicle charging stations requires an] annual investment of almost USD 90 billion in 2030 . . . . [A]nnual investment in CO<sub>2</sub> pipelines and hydrogen-enabling infrastructure increases from USD 1 billion today to around USD 40 billion in 2030.<sup>50</sup>

In addition to the direct costs of investment required to facilitate this transition to a low-carbon economy, markets and market actors will bear costs as a result. For example, the IEA finds that fossil fuel assets are likely to be “stranded” when they cannot be used.<sup>51</sup> While the transition does present certain costs, there are significant benefits, especially if it proceeds in an orderly fashion. For example, the Global Commission has estimated that the global shift to a “low-carbon, resilient economy” also presents significant opportunities, with at least \$26 trillion in economic benefits through 2030.<sup>52</sup> And the IEA estimates the creation of fourteen million jobs in 2030 in clean energy, as compared to losses of five million jobs in the fossil fuel industry.<sup>53</sup>

To achieve these ends of facilitating a smooth transition to a low-carbon economy and avoiding the worst impacts of climate change, numerous private actors have adopted significant measures to reduce

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47. *Id.* at 15.

48. IEA, Roadmap, *supra* note 45, at 22.

49. IPCC 1.5°C Report, *supra* note 40, at 16.

50. IEA, Roadmap, *supra* note 45, at 21.

51. *Id.* at 98; see also IPCC 1.5°C Report, *supra* note 40, at 323 (noting that the transition to a low-carbon economy can lead to assets, such as fossil fuels, being “stranded” and “unburnable”).

52. The Global Comm’n on the Econ. & Climate, *Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times* 8–9 (2018), [https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE\\_2018\\_FULL-REPORT.pdf](https://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE_2018_FULL-REPORT.pdf) [<https://perma.cc/LY33-RYEV>].

53. IEA, Roadmap, *supra* note 45, at 17.

greenhouse gas emissions, improve climate disclosures, and invest in clean energy technologies and infrastructure. Among NGOs, one of the most important has been the CDP, which demands and provides a platform for climate-related disclosures on behalf of investors.<sup>54</sup> In 2020, more than 515 investors with over \$106 trillion in assets requested that major global firms disclose their impact on and management of risk related to climate change, forests, and water security.<sup>55</sup> In addition, more than 150 large purchasers with four trillion dollars in “procurement spend” (purchasing power) requested that their thousands of suppliers disclose environmental data on climate change, forest impacts, and water use through the CDP platform.<sup>56</sup> According to the CDP’s most recent data, more than 9,600 firms, 800 cities, and 120 states and regions have disclosed environmental impacts through the CDP platform.<sup>57</sup>

In addition to Walmart’s Project Gigaton, other private firms have taken steps to reduce GHG emissions from their value chain. For example, private firms have adopted unilateral forms of private environmental governance to reduce their own emissions, such as Microsoft’s adoption of an internal carbon fee.<sup>58</sup> Other major firms have committed to reduce emissions not only from their own operations but also from their value chains. For example, Unilever, a British consumer goods company, has announced that it will cut all emissions from its operations by 2030, and those of its suppliers by 2039.<sup>59</sup> Even major fossil fuel firms, including BP, have begun to take such actions. For example, in 2020, BP announced that it would become net zero not only in its operations but also in its “oil and gas production on an absolute basis” by 2050.<sup>60</sup> This includes helping the

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54. What We Do, CDP, <https://www.cdp.net/en/info/about-us/what-we-do> [<https://perma.cc/8YYW-DDA9>] (last visited Aug. 14, 2021).

55. *Id.*

56. *Id.*

57. *Id.*

58. See Light, *New Insider Trading*, *supra* note 33, at 41 (describing how Microsoft’s internal carbon fee incentivizes emission-reducing behavior).

59. Decarbonising Our Business, Unilever, <https://www.unilever.com/sustainable-living/reducing-environmental-impact/greenhouse-gases/> [<https://perma.cc/9F2B-C6GS>] (last visited Aug. 14, 2021) (“We’ll achieve zero emissions across our operations by 2030.”); How We Will Improve the Health of Our Planet, Unilever, <https://www.unilever.com/news/news-and-features/Feature-article/2020/climate-and-nature.html> [<https://perma.cc/6LXW-GWMD>] (last visited Aug. 14, 2021) (committing to “net zero emissions from all our products by 2039”).

60. Press Release, BP, BP Sets Ambition for Net Zero by 2050, Fundamentally Changing Organisation to Deliver (Feb. 12, 2020), <https://www.bp.com/en/global/corporate/news-and-insights/press-releases/bernard-looney-announces-new-ambition-for-bp.html> [<https://perma.cc/W93E-5K5B>] [hereinafter BP, *New Ambition*]. Reduction of “emissions intensity” is the “level of GHG emissions per unit of economic activity” and is a measure of efficiency. Kevin A. Baumert, Timothy Herzog & Jonathan Pershing, *World Res. Inst., Navigating the Numbers: Greenhouse Gas Data and International Climate Policy* 25 (2005), [https://files.wri.org/d8/s3fs-public/pdf/navigating\\_numbers.pdf](https://files.wri.org/d8/s3fs-public/pdf/navigating_numbers.pdf)

firm's "customers reduce their emissions by halving the carbon intensity of the products it sells" and by increasing the "proportion of investment" the firm makes "into non-oil and gas businesses."<sup>61</sup>

In financial services and related industries, major global insurers and re-insurers, including U.S.-based insurer Chubb, have announced that they would decline to provide coverage for coal-based businesses, including extraction and coal-fired power plants.<sup>62</sup> In the United States, credit ratings agencies have begun to use their influence to force clients to address climate risks through ratings downgrades and other measures.<sup>63</sup> For example, Moody's, one of the three major credit rating agencies in the United States, purchased a stake in Four Twenty Seven, a firm that analyzes climate risk to firms and governments.<sup>64</sup> In 2017, Moody's downgraded the city of Cape Town, South Africa, when a drought threatened the municipal water supply.<sup>65</sup> Likewise, in a 2017 review of its corporate credit ratings from 2015 to 2017, Standard & Poor's (S&P Global) identified 717 cases in which environmental and climate concerns were "relevant to [a firm's] rating" and 106 cases in which those factors—"both event-driven and those occurring over a longer time horizon—resulted in a change of rating, outlook, or a CreditWatch action."<sup>66</sup> In 2020, S&P Global issued a report noting that sixty percent of companies in the S&P 500 Index "with a market capitalisation of \$18 trillion[] hold assets that are at high risk of at

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[<https://perma.cc/D9PN-KY8B>]. In contrast, a pledge to reduce absolute emissions might require reducing economic activity as well.

61. BP, *New Ambition*, *supra* note 60.

62. See Jonathan M. Gilligan, *Carrots and Sticks in Private Climate Governance*, 6 *Tex. A&M L. Rev.* 179, 180–81 (2019) (discussing private climate governance in the financial services industry); Adam Jacobson, *Insurers Divest From Coal Over Climate Risks*, *Risk Mgmt.* (Nov. 1, 2019), <http://www.rmmagazine.com/2019/11/01/insurers-divest-from-coal-over-climate-risks/> [<https://perma.cc/Z5KX-AK5C>]. Some other U.S.-based insurers have been reluctant to take such steps, while major global and EU-based insurers have done so. *Id.*

63. See Karl Mathiesen, *Rating Climate Risks to Credit Worthiness*, 8 *Nature Climate Change* 454, 454–56 (2018); see also Press Release, S&P Global, *S&P Global Ratings Takes Multiple Rating Actions on Major Oil and Gas Companies to Factor in Greater Industry Risks* (Jan. 26, 2021), <https://press.spglobal.com/2021-01-26-S-P-Global-Ratings-Takes-Multiple-Rating-Actions-On-Major-Oil-And-Gas-Companies-To-Factor-In-Greater-Industry-Risks> [<https://perma.cc/J8WX-HVM2>] (noting that this agency had "revised [its] industry risk assessment to moderately high risk from intermediate risk").

64. Kristoffer Tigue, *Climate Change Becomes an Issue for Ratings Agencies*, *Inside Climate News* (Aug. 5, 2019), <https://insideclimatenews.org/news/05082019/climate-change-ratings-agencies-financial-risk-cities-companies/> [<https://perma.cc/J3GJ-T56R>].

65. *Id.*; see also Salvatore Pascale, Sarah B. Kapnick, Thomas L. Delworth & William F. Cooke, *Increasing Risk of Another Cape Town "Day Zero" Drought in the 21st Century*, 117 *Proc. Nat'l. Acad. Scis.* 29,495, 29,495 (2020).

66. Jessica Williams, *How Environmental and Climate Risks and Opportunities Factor Into Global Corporate Ratings—An Update*, S&P Global (Nov. 9, 2017), <https://www.spglobal.com/en/research-insights/articles/environmental-and-climate-risks-factor-into-ratings> [<https://perma.cc/H4CD-PMFE>] (noting that affected corporate credit ratings were "overwhelmingly on issuers in the oil, gas, and power industries").



least one type of climate-change physical risk.”<sup>67</sup> Of these, even factoring in variation across industries, the data demonstrate that the most significant risks are “heatwaves, wildfires, water stress, and hurricanes linked to increasing average global temperatures.”<sup>68</sup> Sectors facing substantial climate risks include real estate investment trusts, firms in the materials sector owning mines and processing plants, and utilities facing significant wildfire risk.<sup>69</sup> S&P Global’s Trucost has initiated a Climate Change Physical Risk Analytics program to assist firms in understanding physical climate risks to assets.<sup>70</sup> In addition, S&P Global notes that S&P 500 firms, including utilities, face significant transition risks as a result of increasingly stringent climate regulation and the potential for carbon pricing.<sup>71</sup>

With this basic understanding of private environmental and climate governance in mind, this Essay now turns to a discussion of how banks’ economic role and financial market structures provide incentives for these institutions to adopt private governance mechanisms and arrangements to solve problems that impact both finance and society.

## II. BANKS AND PRIVATE GOVERNANCE

In many ways, private governance arrangements among financial market actors co-evolved with, and indeed supported, the development of financial markets themselves. Accounts of private governance in finance date back to the seventeenth century, when stockbrokers in London and Amsterdam gathered in coffee houses to agree upon rules and norms of trading, thus creating the precursor to the modern stock exchanges.<sup>72</sup> Financial market leaders continue to develop—and rely upon—mechanisms of private governance to solve complex problems that confront the financial system today. Banks also play a public role. They supply credit, thereby creating money, and funnel economic aid from governments to people in times of crisis—and, as such, they operate at the center of economic life and in a highly regulated context. Given this unique mix of private incentives and public purpose, among the various private actors seeking to

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67. The Big Picture on Climate Risk, S&P Global (Jan. 6, 2020), <https://www.spglobal.com/en/research-insights/featured/the-big-picture-on-climate-risk> [<https://perma.cc/HN7B-Q2N7>].

68. *Id.*

69. *Id.*

70. *Id.*

71. *Id.* (noting that some carbon pricing initiatives exist at the state level, such as in California). For more information on these initiatives, see State of California Global Warming Solutions Act of 2006, §§ 38500–38599 (2021); Welcome, Reg’l Greenhouse Gas Initiative, <https://www.rggi.org> [<https://perma.cc/WV53-NNT3>] (last visited Aug. 14, 2021).

72. For a history of pre-stock exchange coffee houses as a case study in financial system private governance, see Edward Peter Stringham, *Private Governance: Creating Order in Social and Economic Life* 60–78 (2015).

tackle climate change, banks are beginning to find themselves at the center of the debate.

This Part explores why financial market players—and banking institutions in particular—are highly incentivized and duly equipped to create private mechanisms that address certain kinds of public policy problems, including climate change. To set the stage, this Part first considers why it is that banks play a public role in ways that would incline them to address climate change. From there, Part II explains that, inasmuch as society may expect banks to tackle climate change, these institutions do in fact have a range of incentives to adapt their existing business models and industry arrangements to address this public policy problem.

A. *Banks and Their Public Policy Roles*

Banks have public policy in their legal DNA.<sup>73</sup> When Congress created the national banking system, it gave national banks the power to create currency—bank notes—in order to address growing anxiety surrounding the young nation’s economic wellbeing. The National Bank Acts of 1863 and 1864 (NBA) delegated some sovereign power to “coin money and regulate the value thereof” to banks.<sup>74</sup> Contemporaneous accounts of this legislation make plain that Congress designed the NBA in this way because it wished for the private sector’s help with the money supply, so as to bolster public confidence in a newly established federal currency.<sup>75</sup>

Indeed, popular confidence in the national economy, and its monetary affairs, was quite poor prior to the passage of the NBA. The era of so-called “Free Banking” that had predated the national banking system, which allowed for private money creation, was chaotic in some cases and fraudulent in others.<sup>76</sup> During that period, banks (which were not federally

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73. This Essay notes the body of literature that views banks through a public-utility lens. See Robert C. Hockett & Saule Omarova, *The Finance Franchise*, 102 *Cornell L. Rev.* 1143, 1147 (2017); Morgan Ricks, *Money as Infrastructure*, 2018 *Colum. Bus. L. Rev.* 757, 760. While we do consider banks obligated to serve certain public goals, like financial and monetary stability, we do not here adopt the utility frame to make our climate-governance-oriented points.

74. U.S. Const. art. I, § 8, cl. 5.

75. See, e.g., John Wilson Million, *The Debate on the National Bank Act of 1863*, 2 *J. Pol. Econ.* 251, 258–60 (1894) (detailing Congress’s intention to use “patriotism” as a way to get banks to abandon local currencies in favor of a national currency, which was thought necessary to preserve national unity during the Civil War); Lincoln and the Founding of the National Banking System, Off. of Comptroller of Currency, [https://www.occ.gov/about/who-we-are/history/founding-occ-national-bank-system/lincoln-and-the-founding-of-the-national-banking-system.html](https://www OCC.gov/about/who-we-are/history/founding-occ-national-bank-system/lincoln-and-the-founding-of-the-national-banking-system.html) [<https://perma.cc/4GNT-LVKQ>] [hereinafter *National Banking System, OCC*] (last visited July 25, 2021).

76. See Hugh Rockoff, *The Free Banking Era: A Reexamination*, 6 *J. Money, Credit & Banking* 141, 143 (1974) (cautioning that “any deduction about the state of the currency must be made carefully because the reporters generally listed counterfeits and bank failures even if the notes had been removed from circulation years before”); see also *Free and Wildcat Banking*, Lancaster Schs., <https://www.lancasterschools.org/cms/lib/NY19000266/>

regulated) were free to issue their own notes that were untethered to a uniform, specie-related value.<sup>77</sup> Not surprisingly, when these free banks (some pejoratively called “wildcat banks”) issued their own banknotes, with no federal regulatory standardization or controls, redemptions from one bank to another could not always be counted on at par.<sup>78</sup> In some cases, notes issued by one bank would be traded at discounts that differed from their face value at another, sowing uncertainty among depositors across the different states.<sup>79</sup>

Given the disarray, unifying banks into a national system in order to propagate and maintain a single, reliable national currency became a national imperative during the Civil War Era.<sup>80</sup> In President Lincoln’s 1864 State of the Union address, he referred to the national banking system as a mechanism for “creat[ing] a reliable and permanent influence in support of the national credit” to “protect the people against losses in the use of paper money.”<sup>81</sup> In similar spirit, Lincoln noted, in a message vetoing legislation that would have permitted some Washington, D.C.-based free bank note issuance to continue, that “[d]uring the existing war it is peculiarly the duty of the national government to secure to the people a sound circulating medium.”<sup>82</sup>

After the creation of the Federal Reserve (the Fed) in 1913, the U.S. central bank, rather than private banks, would issue paper money going forward; national bank notes issued by banks between 1864 and 1913 would be taken out of circulation.<sup>83</sup> However, to this day, banks continue to “create money” in the form of demand deposits that are an equally lawful and valued medium of exchange alongside paper (fiat) money and coin. This is simply to say that, when a bank today makes a loan, it effectively issues demand deposits in exchange for a promise to repay (a promissory note or a loan receivable). Those deposits enter circulation and become interchangeable with fiat currency and, as such, the bank has “created” money in the process of making a loan. Again, that private banks

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Centricity/Domain/295/04\_FreeBanking\_Article01.pdf [https://perma.cc/WT65-6WNA] (last visited July 23, 2021).

77. Rockoff, *supra* note 76, at 143. Specie refers to money in the form of hard coin, gold, or silver; as distinct from paper money, checks, credit cards, and the like.

78. *Id.* at 145–47. At par means at face value.

79. *Id.* at 150.

80. As scholars of the era have remarked, viewing the national banking system as being created to aid the nation in combatting this emergency puts the National Bank Act in its “proper historical bearing.” Million, *supra* note 75, at 258.

81. National Banking System, OCC, *supra* note 75.

82. Abraham Lincoln, President’s Message in Favor of a National Currency, but Vetoing Irredeemable Bank Notes in the District of Columbia (June 23, 1862), *in* History of the Legal Tender Paper Money Issued During the Great Rebellion, app. at 36 (E.G. Spaulding ed., 1869).

83. See generally Lev Menand & Morgan Ricks, Federal Corporate Law and the Business of Banking, 88 U. Chi. L. Rev. (forthcoming 2021) (assessing the history of this era).

would create money—and therefore assist the state in monetary affairs—was always an intentional feature of the banking system, first with national bank notes and today with demand deposits. In modern times, the Fed’s monetary policy depends on the ability and willingness of private banks to create money.<sup>84</sup> The Fed, for instance, adjusts the interest it pays on banks’ reserves or otherwise seeks to influence interest rates to incentivize banks to lend more or less, precisely in order to affect the amount of “money” banks put in—or take out of—circulation.<sup>85</sup>

Banks assist the central bank and fiscal authority in crisis times as well. In recent years, banks have served as conduits for the Treasury and the Fed to deliver economic aid to the financial and real economies amid the economic crises of 2008 and 2020. In 2008, the government, via the central bank, stood up a number of facilities to stabilize the financial system after a macroeconomic shock (a precipitous drop in housing prices) so as to avoid negative spillover effects from the financial system to the real economy.<sup>86</sup> Via these various lending facilities, the Fed provided emergency liquidity to primary dealers. It also supported the commercial paper funding markets and money market funds, thereby propping up a mix of banks, nonbanks, investment funds, and corporations that relied on commercial paper to fund their short-term operating expenses, like payroll.<sup>87</sup>

In 2020, the government partnered once again with the banking system to support the real economy even more directly—that time, in response to the national emergency precipitated by a global health pandemic. The Fed reincarnated many of the 2008 facilities for primary dealers and investment funds but, this time, went even further (at Congress’s request) to directly assist the real economy (i.e., “main street”).<sup>88</sup> The centerpiece was the Main Street Lending Program, a conglomerate of five facilities, each of which aimed to provide loan assistance

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84. Marc Labonte, Cong. Rsch. Serv., RL30354, *Monetary Policy and the Federal Reserve: Current Policy and Conditions* 4 (2020).

85. See Interest on Reserve Balances, Bd. of Governors of Fed. Rsrv. Sys., <https://www.federalreserve.gov/monetarypolicy/reserve-balances.htm> [<https://perma.cc/35W9-2TUQ>] (last visited Aug. 15, 2021) (discussing how the Fed pays interest on reserves to move the federal funds rate into the target rate set by the Federal Open Market Committee (FOMC)); Open Market Operations, Bd. of Governors of Fed. Rsrv. Sys., <https://www.federalreserve.gov/monetarypolicy/openmarket.htm> [<https://perma.cc/CX5J-P3M4>] (last visited July 23, 2021) (discussing how the Fed uses open market operations to target long-term rates).

86. See Marc Labonte, Cong. Rsch. Serv., R44185, *Federal Reserve: Emergency Lending* 11–16 (Mar. 27, 2020), [hereinafter Labonte, *Federal Reserve: Emergency Lending*]. On transmission channels between real and financial economies, see Basel Comm. on Banking Supervision, *The Transmission Channels Between the Financial and Real Sectors: A Critical Survey of the Literature* (Bank for Int’l Settlements, Working Paper No. 18, 2011), [https://www.bis.org/publ/bcbs\\_wp18.pdf](https://www.bis.org/publ/bcbs_wp18.pdf) [<https://perma.cc/WB7H-X9X3>].

87. Labonte, *Federal Reserve: Emergency Lending*, *supra* note 86, at 32–35.

88. The Fed also added the primary market corporate credit facility and the secondary market corporate credit facility to support corporate bond markets. These facilities allow a special purpose vehicle (SPV) established by the Fed to buy newly issued corporate debt and

to small- and medium-sized businesses and nonprofits.<sup>89</sup> Banks also indirectly supported other main-street-oriented facilities. The Paycheck Protection Program (PPP)—a major part of the Coronavirus Aid, Relief, and Economic Security Act (CARES)—was designed to aid small businesses in covering payroll and utilities, as well as mortgage and rent payments.<sup>90</sup> The PPP, administered by the Small Business Administration (SBA), allowed a number of different lenders—ranging from credit unions to certain fintechs—to make loans to small businesses for payroll and operations.<sup>91</sup> To facilitate the uptake of the program, Congress also gave the Federal Reserve banks new, temporary authority to provide liquidity to member banks that would, in turn, lend to these SBA-approved institutions taking their PPP loans as collateral.<sup>92</sup> The Reserve banks delegated the origination of PPP-backed loans to the banking systems in order to “provide relief expeditiously.”<sup>93</sup>

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purchase existing corporate debt (which trades on the secondary markets) or corporate bond exchange traded funds (ETFs). See Primary Market Corporate Credit Facility, Bd. of Governors of Fed. Rsrv. Sys., <https://www.federalreserve.gov/monetarypolicy/pmccf.htm> [<https://perma.cc/LU3R-MF8V>] (last updated Aug. 11, 2021); Secondary Market Corporate Credit Facility, Bd. of Governors of Fed. Rsrv. Sys., <https://www.federalreserve.gov/monetarypolicy/smccf.htm> [<https://perma.cc/Z2SW-L3PX>] (last updated Aug. 11, 2021).

89. Main Street Lending Program, Bd. of Governors of Fed. Rsrv. Sys., <https://www.federalreserve.gov/monetarypolicy/mainstreetlending.htm> [<https://perma.cc/A3XW-QEDV>] (last updated July 13, 2021).

90. Coronavirus Aid, Relief, and Economic Security Act (CARES Act), Pub. L. No. 116-135, 134 Stat. 281 (2020). For further scholarly discussion of these COVID-era facilities, see David Zaring, *The Government’s Economic Response to the COVID Crisis*, 40 *Rev. Banking & Fin. L.* 315, 351–70 (2021), <https://ssrn.com/abstract=3662049> [<https://perma.cc/C8UM-4ZHK>]; see also Paycheck Protection Program, U.S. Small Bus. Admin., <https://www.sba.gov/funding-programs/loans/coronavirus-relief-options/paycheck-protection-program> [<https://perma.cc/4JNS-YCTC>] (last visited July 23, 2021); Bd. of Governors of Fed. Rsrv. Sys., Paycheck Protection Program Liquidity Facility Term Sheet 1–2 (2020), <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20201130a4.pdf> [<https://perma.cc/XLD5-MEGX>].

91. Paycheck Protection Program Loans—How It Works (Round 1), Small Bus. Advice, <https://www.sba.com/funding-a-business/government-small-business-loans/ppp/how-it-works> [<https://perma.cc/TU7N-CRZQ>] (last visited July 23, 2021).

92. This facility is known as the Paycheck Protection Program Liquidity Facility (PPPLF). The PPPLF was created specifically to incentivize smaller banks (and some fintechs) to engage in PPP lending and to expand their capacity to make such loans. This involved ensuring that smaller originators could get funding on attractive terms and that there would be favorable regulatory treatment for the PPP loans; it works by allowing financial institutions to borrow money while pledging PPP loans as collateral and giving zero risk weight to any PPP loans pledged to the PPPLF. See Haoyang Liu & Desi Volker, *The Paycheck Protection Program Liquidity Facility (PPPLF)*, *Liberty St. Econ.* (May 20, 2020), <https://libertystreeteconomics.newyorkfed.org/2020/05/the-paycheck-protection-program-liquidity-facility-ppplf/> [<https://perma.cc/D3E3-A4VK>] (discussing how favorable the terms of these loans are, at one percent interest on a non-recourse basis with no personal guarantee required; and the fact that these loans would be forgivable provided they were used for eligible expenses).

93. *Id.*

Because banks stand at the center of the economy, issue deposits, and interface with monetary and fiscal policy, they require the public's trust. As former Bank of England Governor Mark Carney once remarked, banks not only require a formal bank charter—a legal license—to operate, they also require a “social licence” to sustain their operation.<sup>94</sup> The ability of banks to win and keep the public's trust is not only a matter of their individual private interest, it is also—as with their other quasi-public roles—a public policy concern. Without public trust in banks, markets will not function smoothly, leaving the stability of the financial system at risk.<sup>95</sup>

Thus, in light of the economic ramifications of climate change—both for banks' own balance sheets and those of their clients—it may come as no surprise that banks have begun to consider climate change in their ordinary course of business.<sup>96</sup> The remainder of Part II considers the private mechanisms and tools that banks have developed to address a host of problems that have both public and private dimensions, including the loan underwriting process, debt covenants, and active monitoring of borrowers during the life cycle of a loan. These sections also consider the incentives that banks have to generate sustainable profit and to limit credit risk in their portfolios. These mechanisms and incentives, as will be seen in Part III, are highly adaptable to climate change.

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94. Mark Carney, Governor of the Bank of Eng., Remarks at the Banking Standards Board Panel “Worthy of Trust? Law, Ethics and Culture in Banking,” *in* Bank of Eng., Mar. 21, 2017, at 2, <https://www.bankofengland.co.uk/-/media/boe/files/speech/2017/banking-standards-board-worthy-of-trust-law-ethics-and-culture-in-banking.pdf> [<https://perma.cc/EC35-D47E>]; see also William C. Dudley, Former President and CEO, Fed. Rsrv. Bank of N.Y., “Strengthening Culture for the Long Term” 1 (June 18, 2018), <https://www.newyorkfed.org/medialibrary/media/governance-and-culture-reform/Dudley-cultureconference-180618.pdf> [<https://perma.cc/GSV6-F8MD>] (explaining the importance of rooting out misconduct in order to increase public trustworthiness). For a broader discussion of social license in industry, see, for example, Neil Gunningham, Robert A. Kagan & Dorothy Thornton, Social License and Environmental Protection: Why Businesses Go Beyond Compliance, 29 *Law & Soc. Inquiry* 307, 308 (2004) (defining social license as “the demands on and expectations for a business enterprise that emerge from neighborhoods, environmental groups, community members, and other elements of the surrounding civil society”); Light & Orts, *Parallels*, *supra* note 5, at 11–12 (making the point that all firms engaging in private environmental governance are creatures of law); Hillary A. Sale, The Corporate Purpose of Social License 5 (June 13, 2019), <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=3189&context=facpub> [<https://perma.cc/NCZ4-9PTQ>] (unpublished manuscript) (“The theory of social license is that businesses and other entities exist with permission from the communities in which they are located, as well as permission from the greater community and outside stakeholders.”).

95. See, e.g., Luigi Guiso, Paola Sapienza & Luigi Zingales, Trusting the Stock Market, 63 *J. Fin.* 2557, 2592–93 (2008) (“[I]t becomes crucial to understand the determinants of investors' (possibly biased) perception of the trustworthiness of the stock market.”).

96. See *supra* notes 7–8 and accompanying text.

B. *Bank Measures to Mitigate Credit Risk*

Banks are in the business of making loans and they naturally have incentives to profit from those loans. By extension, banks have incentives to generate robust mechanisms for guarding against losses on their credit assets—measures to mitigate risk before and during the life cycle of the loan. This section explains banks’ basic economic function (i.e., the credit intermediation process) and how, in performing that function, banks have developed certain risk-mitigation measures that have become industry standard among large, globally active banks.

Banks’ core economic function is to optimally allocate capital.<sup>97</sup> Inasmuch as the channeling of savings to productive use is a critical economic service, it is also a business model.<sup>98</sup> Thus, in pursuit of the profit associated with their capital allocation role (the spread between the cost of money loaned and the cost of funding), banks have strong incentives to avoid excessively risky loans. If a borrower is unable to repay a loan in whole or in part, the bank must write down that loan on their balance sheet—that is, to mark a reduction in the value of that asset. A reduction in asset value translates directly to a loss of earnings and a loss of profit on that loan.

There are also a range of secondary consequences from risky loans that negatively impact a bank’s business. For one, a decline in an asset’s value (again, because it is not repaid in whole or part) will increase that bank’s leverage.<sup>99</sup> A higher leverage ratio<sup>100</sup> is quite likely to concern the bank’s own creditors, which may trigger increases in the cost of the bank’s wholesale funding. In terms of a bank’s retail funding, a bank whose asset values are declining may also concern depositors, who may withdraw their funds (these retail sources of funding might “run” in an extreme scenario of asset value declines). Additionally, where a bank’s asset values decline significantly and in large proportion, bank supervisors and regulators may become involved—like the Office of the Comptroller of the Currency (OCC) for national banks and the Federal Reserve for bank holding companies. Both the Bank Holding Company Act and the Federal Deposit Insurance Act require depository institutions to conduct themselves in a

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97. John Armour, Dan Awrey, Paul Davies, Luca Enriques, Jeffrey N. Gordon, Colin Mayer & Jennifer Payne, *Principles of Financial Regulation* 277 (2016).

98. Arnold Holle, *Corporate Governance by Banks in Transition Economies: The Polish Experience* 71 (1998) (“From a macroeconomic perspective, the ‘fundamental function’ of banks . . . is to channel savings to its most effective uses, and, once capital is deployed, ensuring—by way of monitoring and intervention—that these resources are used in an efficient way.”).

99. Leverage refers to a bank’s debt.

100. Leverage ratio refers to a bank’s debt relative to equity. See Basel Comm. on Banking Supervision, *Leverage Ratio Requirements for Global Systemically Important Banks* (Mar. 27, 2020), [https://www.bis.org/basel\\_framework/chapter/LEV/40.htm?inforce=20230101&published=20200327](https://www.bis.org/basel_framework/chapter/LEV/40.htm?inforce=20230101&published=20200327) [<https://perma.cc/29UG-YUUR>].

safe and sound manner, which includes an obligation that banks maintain a relatively stable balance sheet.<sup>101</sup>

The stability of a bank's balance sheet—its overall operation—is also of great public interest. A wealth of empirical research teaches that big bank failures have severe macroeconomic effects, triggering crises that can cause sluggish GDP growth and low employment.<sup>102</sup> For that reason, the government has created certain public safety nets for banks to guard against this possibility.<sup>103</sup> Some may also implicate the public fisc (i.e., the taxpayer).<sup>104</sup> It is on that ground that bank regulators—the Fed, the OCC, and the Federal Deposit Insurance Corporation (FDIC)—have a basis to supervise and examine banks' balance sheets, governance, and operations. Accordingly, not only do banks operate out of some sense of duty to keep

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101. Bank Holding Company Act of 1956, 12 U.S.C. §§ 1841–1852 (2018); Federal Deposit Insurance Act, 12 U.S.C. §§ 1816, 1831p-1. Much has been written about how this capacious standard affords much discretion—perhaps too much discretion—to make opaque or subjective supervisory judgments. See, e.g., Guidance, Supervisory Expectations, and the Rule of Law: How Do the Banking Agencies Regulate and Supervise Institutions?: Hearing Before the S. Comm. on Banking, Hous. & Urb. Affs., 116th Cong. 6–7 (2019) (statement of Margaret E. Tahyar, Partner, Davis Polk & Wardwell LLP). Bank regulators also have an interest in a bank's prudent lending because the business of bank lending is inherently fragile. It involves investment in long-term illiquid assets (i.e., loans) which are funded with shorter-dated, unstable funding (deposits). As a result of these liquidity and maturity mismatches between assets and liabilities, the basic business model of banking is fragile. At any moment, should the source of the bank's funding dry up, banks are generally unable to repay their deposit-holders given the nature of fractional reserve banking—simply, banks do not maintain enough cash on hand to repay (“redeem”) all deposit-holders.

102. See, e.g., Morgan Ricks, *The Money Problem: Rethinking Financial Regulation* 113–16 (2016) (providing evidence to this effect).

103. Federal Reserve Act, 12 U.S.C. § 347b (detailing a system of discounted advances offered to banks experiencing undercapitalization).

104. Specifically, supervisors employ a form rating process that scores the bank's existing loan portfolio and its risk-management governance and procedures. For most institutions, this involves scrutiny of the quality of a bank's assets to consider whether loans have been impaired or are likely to be. This is the “A” in a so-called CAMELS rating. For LISCC firms (that is, those over \$100 billion in consolidated assets), the Fed uses a “large financial institution” (LFI) rating system, that includes assessment of the firm's governance and controls. In particular, it involves assessment of firm's ability to effectively “align[] strategic business objectives with the firm's risk appetite and risk management capabilities . . . and otherwise plan[] for the ongoing resiliency of the firm.” See Large Financial Institution Rating System; Savings and Loan Holding Companies (Regulation LL), 83 Fed. Reg. 58,734, 58,735 (Nov. 21, 2018). As in other areas of supervision, the ratings system is sufficiently subjective and opaque that the Fed's Vice Chair for Supervision, Randal Quarles, has expressed an interest in making ratings more predictable, transparent, and consistent with the due process rights of regulated firms. See Randal K. Quarles, Vice Chair for Supervision, *The Eye of Providence: Thoughts on the Evolution of Bank Supervision*, Speech at the Federal Reserve Board, Harvard Law School, and Wharton School Conference (Dec. 11, 2020), in Bd. of Governors of Fed. Rsrv. Sys., Dec. 11, 2020, <https://www.federalreserve.gov/newsevents/speech/quarles20201211a.htm> [<https://perma.cc/6PA9-PJFP>].



the public from harm, but they also seek to establish their own mechanisms for demonstrating their ability to lend prudently to avert additional regulatory scrutiny or intervention.<sup>105</sup>

Banks have developed three kinds of *ex ante* risk-mitigation mechanisms to ensure their prudent lending: the loan underwriting process, debt covenants, and active monitoring of borrowers during the life cycle of a loan. The first of these mechanisms is the loan underwriting process itself, through which banks appraise the creditworthiness of a borrower based on a number of factors—past repayment history, business model, projections of future cash flow, and projections of ability to repay.<sup>106</sup> The bank also relies on the personal relationships with borrowers that it has cultivated over a number of years of repeated interactions with (most) of its corporate customers.<sup>107</sup> These personal relationships add qualitative color to the banks' quantitative diligence, giving them a fuller picture of a borrower's ability to repay. Finally, and relatedly, banks have vast information networks of potential downstream investors in any loan a bank makes.<sup>108</sup> If a bank makes a loan with the intent to securitize that loan, it will first gauge the market's appetite by consulting its network of potential buyer-investors. This also gives the bank some insight into the prudence and profitability of the credit investment.

The second risk-mitigation technique involves setting loan terms, including debt covenants.<sup>109</sup> Standard loan terms may involve collateral requirements<sup>110</sup> and specify the loan's term length, amortization, size, guarantor requirements, and pricing (interest rate). Loan terms adjust in stringency according to the creditworthiness of the borrower—the riskier

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105. Thomas P. Lyon & John W. Maxwell, *Corporate Social Responsibility and the Environment: A Theoretical Perspective*, 2 *Rev. Env't Econ. & Pol'y* 240, 245–46 (2008) (discussing the motivations for firms to adopt corporate social responsibility initiatives).

106. See Gary M. Deutsch, 1 *Senior Loan Officer's Desk Reference* § 2.01 (Release 30, 2021) (LexisNexis Sheshunoff).

107. See Alan D. Morrison & William J. Wilhelm, Jr., *Investment Banking: Institutions, Politics, and Law* 3, 20–21 (2008) (describing how banks have built trust with repeat borrower clients as a way to obtain relevant information about that client and its investors).

108. See *id.* at 5 (explaining how banks leverage the information networks they have created by proving themselves trustworthy to investors in order to gain a fuller picture of market conditions).

109. The use of debt covenants is a well-recognized method of private monitoring and market discipline, both between banks, and between banks and corporate borrowers. See, e.g., Bill Francis, Iftekhar Hasan, LiuLing Liu & Haizhi Wang, *Senior Debt and Market Discipline: Evidence From Bank-to-Bank Loans*, 98 *J. Banking & Fin.* 170, 170–71 (2019); Gabriel Chodorow-Reich & Antonio Falato, *The Loan Covenant Channel: How Bank Health Transmits to the Real Economy* 1 (Nat'l Bureau of Econ. Rsch., Working Paper No. 23,879, 2017), [https://www.nber.org/system/files/working\\_papers/w23879/w23879.pdf](https://www.nber.org/system/files/working_papers/w23879/w23879.pdf) [<https://perma.cc/V5A5-EVDC>]; see also *supra* note 16 and accompanying text.

110. Often, however, corporate loans are unsecured. See Efraim Benmelech, Nitish Kumar & Raghuram Rajan, *The Decline of Secured Debt* 1 (Nat'l Bureau of Econ. Rsch., Working Paper No. 26,637, 2020), [https://www.nber.org/system/files/working\\_papers/w26637/w26637.pdf](https://www.nber.org/system/files/working_papers/w26637/w26637.pdf) [<https://perma.cc/K6C8-XKDH>].

the borrower, the less attractive the financing terms, and vice versa. Banks have also developed a practice of imposing a variety of debt covenants to control borrower behavior after the loan is made. Other scholars have noted the extent to which creditors can exercise control over companies via debt covenants.<sup>111</sup>

There are two main kinds of debt covenants. Financial covenants typically relate to the borrower's accounting information and may specify, for example, upper limits on debt or requirements on cash flow maintenance.<sup>112</sup> Restrictive covenants, meanwhile, tend to pose restrictions on the borrower's investment decisions or activities.<sup>113</sup> Lenders can use covenants to gain the power to exercise control over their borrowers by, among other things, reshaping C-suite management, revamping capital structures, and limiting the ways in which a borrower's management uses cash and other assets.<sup>114</sup> Covenants might also be written to allow the lender to restrict a company from borrowing further or by requiring the company to seek the bank's permission before paying dividends or buying back shares, issuing new debt, or changing their capital structure.<sup>115</sup> Bank lenders, as such, can use debt covenants liberally to gain and retain power in the governance structure of their borrowers.<sup>116</sup>

Third, banks actively monitor the borrower during the life cycle of the loan.<sup>117</sup> Banks will assess on an ongoing basis the borrower's business as a way of informing their understanding of the quality (i.e., value) of the credit asset as it sits on the balance sheet. Monitoring can morph into enforcement; should a borrower default on a loan term or covenant, the bank may have a series of self-enforceable remedies written into the loan document, such as a right to accelerated repayment, foreclosure, or seizure of any collateral that had been required.<sup>118</sup>

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111. As Professor Yesha Yadav points out, a vast body of scholarship in this area has recognized that "informed lenders can exercise tight control through strict, narrowly defined covenants." Yadav, *supra* note 5, at 783.

112. Sudheer Chava, Shunlan Fang, Praveen Kumar & Saumya Prabhat, *Debt Covenants and Corporate Governance*, 11 *Ann. Rev. Fin. Econ.* 197, 199 (2019).

113. *Id.*

114. Yadav, *supra* note 5, at 784.

115. *Id.* at 784–85.

116. *Id.*; see also Baird & Rasmussen, *supra* note 5, at 1227 (noting that covenants can give creditors "de facto control over every aspect of the business" and "veto power over every course of action"); Chava et al., *supra* note 112, at 203 (noting that debt contracts usually give the debtholder significant discretion in the event of a violation, including, for example, the ability to "intercede in management by reviewing and changing the borrower's financial and investment policies . . . or withdraw the loan").

117. Technically, when multiple financial institutions syndicate very large loans, it is typically the lead bank that will retain the monitoring role, for a fee. See Baird & Rasmussen, *supra* note 5, at 1244.

118. See, e.g., Michael R. Roberts & Amir Sufi, *Control Rights and Capital Structure: An Empirical Investigation*, 64 *J. Fin.* 1657, 1664–66 (2009); Robert E. Scott, *Rethinking the Regulation of Coercive Creditor Remedies*, 89 *Colum. L. Rev.* 730, 746–47 (1989).

Overall, through underwriting diligence, the use of debt covenants, and monitoring, banks have established a suite of mechanisms to ensure the prudence of their credit investments and thus the soundness of their balance sheet. Today, this complement of risk-mitigation measures is industry standard among large, internationally active banks. Even without explicit coordination, standardization in underwriting and covenants is inevitable in an industry that is as competitive and homogeneous as big banking, especially because banks are subject to a shared set of supervisory expectations by a regulatory authority.<sup>119</sup>

These various risk mitigation techniques have two main implications for banks' role in a transition economy. First, these measures can motivate environmentally responsible behavior on the part of corporate borrowers that need access to bank credit. The need to access credit in the first instance can motivate would-be corporate borrowers to remain mindful of their carbon footprints or efforts to reduce their carbon footprints.<sup>120</sup> The ongoing monitoring, which is accompanied by the self-help afforded to banks via covenants, can ensure borrowers remain faithful to their carbon commitments through the life cycle of a loan. Second, on a more macro level, banks' underwriting, debt discipline, and monitoring roles suggest that they have a unique skillset in identifying promising technologies that can build bridges to a low-carbon economy.<sup>121</sup> Some historical reflection on banks' prior ability to facilitate economic transformation, by leveraging those skills, illustrates this point.

### C. *Bank Measures to Invest in Economic Transformation*

Banks' economic incentives not only involve prudence; they also include the desire to lend strategically. That is, banks are motivated to identify promising industries, technologies, and ideas, and to then finance them so that they can scale (and profit). The promise of profit—and repeat business among successful entrepreneurs—which is inherent in financing entrepreneurship and innovation, has meant that banks have played a dominant role in facilitating major structural and industrial transformations in the past. This transition, too, may well be a pivotal moment of industrial transformation in which banks are poised to play a crucial role moving forward.

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119. See, e.g., Underwriting, Off. of Comptroller of Currency, <https://www.occ.treas.gov/topics/supervision-and-examination/credit/commercial-credit/underwriting.html> [<https://perma.cc/AE33-RPL7>] (last visited July 23, 2021) (curating the OCC's various criteria and standards for the supervision and assessment of bank underwriting).

120. Substantial empirical scholarship has demonstrated that firms with better ESG (Environmental, Social, and Governance) performance have better access to credit. See, e.g., Witold J. Henisz & James McGlinch, ESG, Material Credit Events, and Credit Risk, 31 J. Applied Corp. Fin. 105, 105–07 (2019) (surveying literature).

121. See *infra* Part III.

The role of banks in industrial transformation is not only prominent; it appears essential. As one of the most influential economists of the twentieth century, Joseph Schumpeter, remarked, “[t]he essential function of credit . . . consists in enabling the entrepreneur . . . to force the economic system into new channels.”<sup>122</sup> In the absence of private sources of finance, the alternative would be government financing, which might either be unavailable or problematic for other reasons. Consistent with Schumpeter’s observation that economic transitions require capital to finance them, most of the major industrial revolutions of the nineteenth and twentieth centuries relied in varying degrees on credit and advisory services provided by banks. In studying these industrial transformations, financial economists and economic historians have discerned the various ways in which massive industrial evolution depends on the banking sector.<sup>123</sup>

In the United States, the rise of big industry in the early nineteenth century required significant injections of capital. Anecdotally, one can observe the roles that large finance houses like J.P. Morgan played in financing the growth of the steel industry and the railroads;<sup>124</sup> more regionally, the so-called “Boston Associates” financed the growth of textiles in Massachusetts.<sup>125</sup> In the latter half of the twentieth century, international financial institutions like the World Bank and International Monetary Fund were created precisely to facilitate the flow of capital to assist undeveloped or pre-industrialized economies with accomplishing that transition.<sup>126</sup>

Economists in the early twenty-first century have added scholarly rigor to these observations. In one empirical and theoretical economic paper, Marco Da Rin and Thomas Hellmann determined that banks served as “catalysts for industrialization” in the industrial revolutions of Belgium (1830 to 1850), Italy (1894 to 1914), and Germany (1850 to 1870) in the nineteenth century.<sup>127</sup> These scholars discerned some “common patterns”

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122. Joseph A. Schumpeter, *The Theory of Economic Development* 106 (Redvers Opie trans., 1934). Indeed, Schumpeter observed that banks play a monitoring role in that “the banker must not only know what the transaction is which he is asked to finance and how likely it is to turn out but he must also know the customer, his business and even his private habits.” 1 Joseph A. Schumpeter, *Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process* 116 (1939) (cited in Diamond, *supra* note 16, at 393).

123. Generally, economic transitions involve the sovereign (providing subsidies); debt (from banks); and equity (from banks or other investors or investment vehicles). Our analysis here is limited to the role of the private sector in transitions.

124. See Univ. of Gronigen, J.P. Morgan and Finance Capitalism, *Am. History*, <http://www.let.rug.nl/usa/outlines/history-2005/growth-and-transformation/jp-morgan-and-finance-capitalism.php> [https://perma.cc/M4UZ-Q2XW] (last visited July 23, 2021).

125. See François Weil, *Capitalism and Industrialization in New England, 1815–1845*, 84 *J. Am. History*, 1134, 1340 (1998).

126. See Ngaire Woods, *The Globalizers: The IMF, the World Bank, and Their Borrowers* 1–2 (2014).

127. Marco Da Rin & Thomas Hellmann, *Banks as Catalysts for Industrialization*, 11 *J. Fin. Intermediation* 366, 369–70 (2002).

across each period of industrialization—that is, in each country, “a small number of banks accounted for the bulk of investments in the industries that generated rapid economic growth. These banks invested in a portfolio of firms that depended on one another and that together pioneered new markets and industries.”<sup>128</sup> These banks were instrumental in financing the majority of new industrial firms and “actively promoted investment in industrial technology and engaged in coordination of industrial investments.”<sup>129</sup>

Each of these cases offers a slightly different historical lesson about the potential for banks to facilitate industrial transformations. In Belgium between 1835 and 1838, two large banks took a rather active role in screening for companies that seemed to have the potential to drive progress in the economy. These banks

assisted and actively encouraged firms in fast growing industries to adopt the corporate form in order to raise large amounts of external finance . . . “[B]anks did not respond passively to demand for credit, but actively sought new firms, underwrote their stock issues, financed potential stockholders, held stock in their own names, placed their officers on the boards of directors of the companies they promoted, and ministered to the companies’ needs for both working capital and new capital for expansion.”<sup>130</sup>

The story in Germany in this period was similar. A few banks provided loans and issued securities for high growth companies, concentrating on a few regions and a few industries such as mining, machinery, textiles, construction, and railways.<sup>131</sup> The plotline of personal relationships, alongside credit extension, appeared again. These few banks not only supplied capital but also served as allies to the companies that they were funding; in particular, the banks worked to pique the appetite of equity investors to supply capital to these enterprises as well.<sup>132</sup> In Italy, two banks in particular “spurred investment in electricity, mechanical engineering, metals, and automobiles.”<sup>133</sup> As in Germany and Belgium, these Italian banks tapped into their universal banking capabilities to help these new industries to flourish, providing underwriting services and connecting them with equity investors.<sup>134</sup>

Whereas Da Rin and Hellmann used economic history to show how banks have catalyzed industrialization, other scholars have shown how

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128. *Id.* at 368.

129. *Id.* at 370.

130. *Id.* at 371 (quoting Rondo Cameron, *Banking in the Early Stages of Industrialization: A Study in Comparative Economic History* 145 (1967)).

131. *Id.* at 373.

132. See *id.* at 373 (“[B]y organizing and allying themselves so closely with industrial enterprises, bankers strengthened and in part represented the demand for investment funds.”).

133. *Id.* at 374.

134. *Id.*

banks can and have created conditions that enabled structural transformations in an economy. In their study of the Industrial Revolution in England and Wales over the period 1817 to 1881, Stephan Heblich and Alex Trew collected and regressed data indicating a “robust and large causal effect of local financial services on the local growth of industrial employment.”<sup>135</sup> Their assessment of the industrial transformation was “characterized by the maturation of the early superstar sectors (such as textiles) and the shift toward new, rapidly growing sectors (such as machines and tool making).”<sup>136</sup> They find that finance was not incidental to the growth of these change-generating industries; rather they “show that an absence of such banks, by affecting the price of capital, could have fundamentally stood in the way of the technological change.”<sup>137</sup> Their study suggests that banks provide a service to an economy that is seeking to progress by allocating capital to businesses with “large fixed costs or high capital intensity,” which tend to be new sectors that are “growing fast, particularly risky, or technologically dynamic”—banks are, after all, “experts at evaluating investment opportunities.”<sup>138</sup>

In yet a third impactful study on this score, Jeremy Atack, Matthew Jaremski, and Peter L. Rousseau demonstrate that bank finance provided the capital-oriented infrastructure required for industrialization to take root.<sup>139</sup> These scholars studied industrialization that transpired during the Free Banking Era, from 1837 to 1858, focusing on the Midwest in particular. They collected data indicating that banks in this era saw “the opportunity to expand and diversify their local economy,” and thus, “early bank owners often helped fund the first rails.”<sup>140</sup> And, “even when they did not directly fund the rails, existing banks provided information and facilitated transactions for the railroad companies.”<sup>141</sup> Thus, the banking system “helped provide some structure to the growing railroad network.”<sup>142</sup>

These various empirical, theoretical, and descriptive accounts of banks’ role in industrial transformation suggest that banks are engines of economic transformation (through capital in the first instance and through informational intermediation and entrepreneurial advice in the second); that banks often play a sorting role in identifying high-potential

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135. Stephan Heblich & Alex Trew, *Banking and Industrialization*, 17 *J. Eur. Econ. Ass’n* 1753, 1754 (2019).

136. *Id.*

137. *Id.* at 1757.

138. *Id.* at 1789. Note that banks’ ability to act as industrial promoters cuts both ways in terms of risk.

139. Jeremy Atack, Matthew Jaremski & Peter L. Rousseau, *American Banking and the Transportation Revolution Before the Civil War*, 74 *J. Econ. Hist.* 943 (2014).

140. *Id.* at 945.

141. *Id.*

142. *Id.* at 962.

innovators and backing them; and that banks tend to frame, and sometimes anchor, the shape and pace of the transformation. This financial history thus suggests that modern-day banks can play a crucial role as capital providers to transition technology and infrastructure; as promoters of these industries; and as screens for projects or borrowers that could help (or hinder) the pace of transition. On the whole, therefore, banks' motivation to finance structural transformation may also be seen as an outgrowth of private governance.

D. *Banks Associate to Address Complex, Transnational Problems*

This section turns from the private governance implications of banks' economic incentives and roles, to consider the incentives banks face to form voluntary associations in order to solve specific problems that affect the industry collectively. Recent examples of such associations include: the International Swaps and Derivatives Association, which was formed to address over-the-counter derivatives; the Financial Services Culture Board (formerly the Banking Standards Board) in the United Kingdom, which was formed to address ethical violations and misconduct; and the Operational Riskdata eXchange Association, which was formed to address issues of operational risk.<sup>143</sup>

Importantly, many of these associations are not just standing industry groups that tackle a wide range of issues; rather, they are a number of associations that have formed to address specific subjects and problems. Specifically, there are two principal reasons why banks have formed such voluntary associations in the past several decades: (1) to address problems associated with complex financial products and (2) to address reputational problems that followed widespread industry misconduct.<sup>144</sup> Again, both of these problems impact finance, but they also have public policy components.

As Professor Edward Peter Stringham has documented, financial market participants first turned to voluntary associations in the seventeenth

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143. See Our Board, Fin. Serv. Culture Bd., <https://financialservicescultureboard.org.uk/who-we-are/our-board/> (on file with the *Columbia Law Review*) [hereinafter Our Board, FSCB] (last visited Aug. 14, 2021); About ISDA, ISDA, <https://www.isda.org/about-isda/> [<https://perma.cc/W79F-DC8S>] [hereinafter About ISDA] (last visited July 23, 2021); About ORX, ORX, <https://managingrisktogether.orx.org/about/> [<https://perma.cc/BLE6-K5GW>] (last visited July 23, 2021) (outlining the history and mission statement of ORX).

144. These incentives to create industry associations are similar to the motivations to create private governance initiatives in other industries. For example, the American Chemistry Council—an industry association of major chemical manufacturers—created the Responsible Care Program in the wake of the Bhopal disaster in India that killed thousands and that diminished the reputation of the chemicals industry for safety. Statement of the Dow Chemical Company Regarding the Bhopal Tragedy, Dow, <https://corporate.dow.com/en-us/about/legal/issues/bhopal.html> [<https://perma.cc/GF9F-DPHN>] (last visited July 23, 2021). On private firms' motivations to engage in corporate initiatives to address environmental and social challenges generally, see Lyon & Maxwell, *supra* note 105, at 240.

century to facilitate exchange.<sup>145</sup> Through their associations, financial market participants established norms of reciprocity to facilitate orderly exchanges of stocks—bringing order to what was previously disorganized attempts to trade. In more modern times, financial market players have also turned to voluntary association to address the complexity of exchange arising from the market for derivatives. In 1985, industry participants formed the International Swaps and Derivatives Association (ISDA) as a trade organization of participants in the market for over-the-counter derivatives.<sup>146</sup>

ISDA plays many roles in establishing rules of the road for the over-the-counter (OTC) derivative world. ISDA may be best known for its role in creating a standardized contract to facilitate the trading of OTC (that is, bespoke) derivatized contracts—the ISDA “master agreement.”<sup>147</sup> Today, that agreement facilitates regulatory requirements to centrally clear all derivatives, including OTC derivatives. But ISDA also provides other services to its financial institution members to facilitate the derivatives market. It sets standards for trading; and, in recent years, ISDA has taken on more of a role in alternative dispute resolution and lobbying in regard to international private law legal harmonization undertaken by UNIDROIT, the International Institute for the Unification of Private Law.<sup>148</sup> ISDA, like most voluntary industry associations, also interacts with regulatory authorities and engages with regulators on the most cutting-edge financial products to ensure a shared understanding that such products conform to regulatory requirements.<sup>149</sup> The standards it sets assuage regulatory concerns for orderly and fair market functioning.<sup>150</sup> As other

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145. Stringham, *supra* note 72, at 25–26, 39–40 (defining voluntary associations and providing a historic overview).

146. About ISDA, *supra* note 143.

147. See M. Konrad Borowicz, *Contracts as Regulation: The ISDA Master Agreement*, 16 *Cap. Mkts L.J.* 72, 73 (2021).

148. John Biggins & Colin Scott, *Private Governance, Public Implications and the Tightrope of Regulatory Reform: The ISDA Credit Derivatives Determinations Committees* (Osgoode Hall School F. for Compar. Rsch. L. & Pol. Econ., Working Paper No. 57/2013), <https://ssrn.com/abstract=2360278> [<https://perma.cc/W55U-BR8G>].

149. The Department of Justice has determined that ISDA’s work in the standardization of the master document does not pose antitrust concerns given a range of “safeguards to avoid harm to competition” that ISDA has put in place. See, e.g., Press Release, DOJ, Justice Department Issues Favorable Business Review Letter to ISDA for Proposed Amendments to Address Interest Rate Benchmarks (Oct. 1, 2020), <https://www.justice.gov/opa/pr/justice-department-issues-favorable-business-review-letter-isda-proposed-amendments-address/> [<https://perma.cc/FA4C-ZJZ7>].

150. Title VII of the Dodd–Frank Act conferred regulatory authority to the SEC and Commodity Futures Trading Commission (CFTC) over OTC derivatives, with the Federal Reserve Board also playing a vital role in regulating banks that engage in swap agreements:

The SEC has regulatory authority over “security-based swaps,” which are defined as swaps based on a single security or loan or a narrow-based group or index of securities (including any interest therein or the value thereof), or events relating to a single issuer or issuers of securities in a



scholars have remarked, ISDA engages in “‘private lawmaking’ which has the capacity to clearly affect both members and non-members.”<sup>151</sup>

ISDA is thus an example of banks’ capacity to use voluntary association to bring order, transparency, fairness, and efficiency to newly developed financial markets that are both complex and transnational. Furthermore, and perhaps most importantly for the climate context, ISDA demonstrates how in some contexts, industry participants are in a strong position to establish rules and norms to solve novel problems in complex financial markets.<sup>152</sup>

Banks also have turned to a wide range of voluntary industry associations to address reputational challenges associated with banker misconduct.<sup>153</sup> In the years following the 2008 financial crisis, the banking industry appeared to be rife with misconduct. Between 2012 and 2013, it was discovered that several of the large, systemically important banks in the United States and United Kingdom had been involved in manipulating LIBOR and foreign exchange rates.<sup>154</sup> These post-crisis years also saw numerous incidents of money laundering in U.S. and European banks.<sup>155</sup>

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narrow-based security index. Security-based swaps are included within the definition of “security” under the Securities Exchange Act of 1934 and the Securities Act of 1933.

The CFTC has primary regulatory authority over all other swaps, such as energy and agricultural swaps. The CFTC and SEC share authority over “mixed swaps,” which are security-based swaps that also have a commodity component.

Derivatives, SEC, <https://www.sec.gov/spotlight/dodd-frank/derivatives.shtml> [<https://perma.cc/5MHY-CBVH>] (last visited July 24, 2021).

151. Biggins & Scott, *supra* note 148, at 12; see also Catherine E. Rudder, Private Governance as a Public Policy: A Paradigmatic Shift, 70 J. Pol. 899, 901 (2008) (explaining the concept of “public-private governance”).

152. Indeed, it appears that ISDA is already embracing a role as problem-understander and -solver for the industry with regards to climate and derivatives. See ISDA, Overview of ESG-Related Derivatives Products and Transactions 1–2 (2021), <https://www.isda.org/a/qRpTE/Overview-of-ESG-related-Derivatives-Products-and-Transactions.pdf> [<https://perma.cc/S6S8-FSD8>].

153. See Christina Parajon Skinner, Misconduct Risk, 84 Fordham L. Rev. 1559, 1595–96 (2016) (noting, as an example, that Barclays had created a compliance “academy” with a U.K.-based business school).

154. See, e.g., Katie Martin, Caroline Binham & Kadhim Shubber, Forex Scandal Comes Down to Case Against the ‘Cartel’, *Fin. Times* (Oct. 7, 2018), <https://www.ft.com/content/1b63dd84-c8bc-11e8-ba8f-ee390057b8c9/> (on file with the *Columbia Law Review*); James McBride, Understanding the Libor Scandal, Council on Foreign Rels., <https://www.cfr.org/background/understanding-libor-scandal/> [<https://perma.cc/5BJZ-DSTU>] (last updated Oct. 12, 2016).

155. See, e.g., Pascal Fletcher, Wachovia Pays \$160 Million to Settle Drug Money Probe, *Reuters* (Mar. 17, 2010), <https://www.reuters.com/article/us-wachovia-settlement/wachovia-pays-160-million-to-settle-drug-money-probe-idUSTRE62G35720100317/> [<https://perma.cc/D2FL-E9LD>]; Aruna Viswanatha & Brett Wolf, HSBC to Pay \$1.9 Billion U.S. Fine in Money-Laundering Case, *Reuters* (Dec. 11, 2012), <https://www.reuters.com/article/us-hsbc-probe/hsbc-to-pay-1-9-billion-u-s-fine-in-money-laundering-case-idUSBRE8BA05M20121211/> [<https://perma.cc/3UHN-HS3U>].

These rate-fixing and money laundering scandals suggested that episodes of misconduct were not the result of rogue actors but rather implicated a problem with the culture of big banks. Regulators, domestically and internationally, began to focus on the problem of culture and “misconduct risk” in banks.<sup>156</sup>

The industry did not take the insinuation of “ethical drift” in their institutions lightly.<sup>157</sup> Instead, a variety of groups and associations formed to tackle the cultural problem.<sup>158</sup> Experts outside of the banking system formed some of these groups and have taken the lead today as banking institutions now join as members.<sup>159</sup> Perhaps the best known of these is the Financial Services Culture Board (FSCB) in the United Kingdom, which was created on recommendation of the U.K. Parliament.<sup>160</sup> The FSCB was always, however, envisioned to be a group for banks as members to formulate and internally enforce standards of conduct—neither acting as a traditional industry group nor supplanting the role of external regulatory bodies.<sup>161</sup> The purpose of the FSCB is to provide various culture- and behavior-related infometric services to its member banks.<sup>162</sup> In its early days, when it was still the Banking Standards Review Board, the FSCB worked with members to discuss and develop notions of professional identity that might further a strong ethical culture.<sup>163</sup> Today, the FSCB focuses much of

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156. See, e.g., Katy Burne, William Dudley Says Culture at New York Fed Can Still Be Improved, *Wall St. J.* (June 18, 2018) <https://www.wsj.com/articles/william-dudley-says-culture-at-new-york-fed-can-still-be-improved-1529330490/> (on file with the *Columbia Law Review*); Carney, *supra* note 94, at 3; Dudley, *supra* note 94, at 1; Fin. Stability Bd., Reducing Misconduct Risks in the Financial Sector: Progress Report to G20 Leaders 1, 4–6 (2017), <https://www.fsb.org/2017/07/reducing-misconduct-risks-in-the-financial-sector-progress-report-to-g20-leaders/> [<https://perma.cc/Q8WR-YQEP>]; Grp. of Thirty, Banking Conduct and Culture: A Permanent Mindset Change 27 (2018), [https://group30.org/images/uploads/publications/aaG30\\_Culture2018.pdf](https://group30.org/images/uploads/publications/aaG30_Culture2018.pdf) [<https://perma.cc/84PT-KHTL>].

157. See Carney, *supra* note 94, at 3 (“We must move from an excessive reliance on punitive, *ex post* fines of firms to greater emphasis on more compelling *ex ante* incentives for individuals, and ultimately a more solid grounding in improved firm culture.”).

158. See Christina Parajon Skinner, Conduct and Culture in Global Banks (forthcoming 2022) (manuscript at 10–11) (on file with the *Columbia Law Review*) (drawing on primary source interview material to discuss these industry groups).

159. See e.g., Our Board, FSCB, *supra* note 143.

160. Our History, Fin. Serv. Culture Bd., <https://financialservicescultureboard.org.uk/who-we-are/our-history/> (on file with the *Columbia Law Review*) [hereinafter Our History, FSCB] (last visited Aug. 20, 2021).

161. See Parliamentary Commission on Banking Standards, Changing Banking for Good, 2013–2014, HC 175-1, ¶ 138 (UK), <https://publications.parliament.uk/pa/jt201314/jtselect/jtpebs/27/27.pdf> [<https://perma.cc/25C7-EDJB>] (“[T]he influence of a professional body for banking could assist the development of the culture within the industry by introducing non-financial incentives, which nonetheless have financial implications, such as peer pressure and the potential to shame and discipline miscreants.”).

162. See Our Assessment, Fin. Serv. Culture Bd., <https://financialservicescultureboard.org.uk/what-we-do/assessment/> (on file with the *Columbia Law Review*) (last visited Aug. 20, 2021).

163. See Our History, FSCB, *supra* note 160.

its work on analyzing the member banks' culture by gathering and assessing bank-provided survey data and employing a behavioral psychology lens.<sup>164</sup> This review and analysis work is meant to enable banks to take routine stock-checks of their culture and identify any related weaknesses or gaps between actual culture and the firm's stated values.<sup>165</sup> Other jurisdictions have replicated the FSCB model, most recently in Ireland with an Irish Banking Culture Board that has taken up substantially similar work for Irish banks.<sup>166</sup>

The Chartered Banker Institute, like the FSCB, is also a professional body that is not quite a typical trade group. It, too, focuses on improving culture in banking and on training its bank members in "principles of stewardship, prudence and professionalism."<sup>167</sup> Again, the Chartered Banker Institute is not a regulatory body, yet its outputs do interface with regulatory requirements. Senior managers in the United Kingdom are required to demonstrate their fitness and propriety as part of a "senior managers certification regime" that has been imposed through legislation; becoming certified as a Chartered Banker is one way a banker can demonstrate that ethical qualification.<sup>168</sup> The Chartered Banker Institute, like the FSCB, is a domestic organization, but its structure and emphasis on managerial fitness standards and private governance responsibilities have been replicated in numerous other jurisdictions around the world, including Australia, Hong Kong, and Malaysia.<sup>169</sup>

A third example of a reputation-oriented association is the Operational Riskdata eXchange Association (ORX). This body invites financial institutions as members for the purpose of sharing data and best

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164. See Banking Standards Bd., Annual Review 2018/2019, at 13–15 (2019), <https://financialservicescultureboard.org.uk/pdf/banking-standards-annual-review-2018-2019.pdf> (on file with the *Columbia Law Review*).

165. *Id.* at 13 ("The Assessment exercise is designed to provide firms with feedback and information to help them manage culture within their organisations.").

166. Irish Banking Culture Board, <https://www.irishbankingcultureboard.ie/> [<https://perma.cc/YK2D-RE9W>] (last visited July 23, 2021) (defining the Irish Banking Culture Board's mission as "work[ing] with our member banks to build trustworthiness in order to assist the industry in regaining public trust").

167. The Institute, Chartered Banker, <https://www.charteredbanker.com/the-institute.html> [<https://perma.cc/U7M4-3YLS>] (last visited July 23, 2021).

168. Senior Managers Regime, Chartered Banker, <https://www.charteredbanker.com/centre-for-responsible-banking/culture-and-conduct/senior-managers-regime.html> [<https://perma.cc/S85W-P66W>] (last visited July 23, 2021).

169. See Australian Prudential Regul. Auth., Prudential Standard CPS 520: Fit and Proper (2017), <https://www.apra.gov.au/sites/default/files/Prudential-Standard-CPS-520-Fit-and-Proper-%28July-2017%29.pdf> [<https://perma.cc/L4P8-P3RU>]; Fit and Proper Criteria, Bank Negara Malaysia, BNM/RH/GL 018-5 (2013), [https://www.bnm.gov.my/documents/20124/938039/Ft\\_Proper\\_Criteria\\_280613.pdf/36e078eb-0b2e-f687-597a-1d579aa2c1d9?t=1592215267023](https://www.bnm.gov.my/documents/20124/938039/Ft_Proper_Criteria_280613.pdf/36e078eb-0b2e-f687-597a-1d579aa2c1d9?t=1592215267023) [<https://perma.cc/6T9H-2JZ6>]; Letter from Carmen Chu, Exec. Dir. (Banking Conduct), H.K. Monetary Auth., to the Chief Exec., All Authorized Insts. (Oct. 16, 2017), <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2017/20171016e1.pdf> [<https://perma.cc/Y69T-KZYB>].

practices about operational risk issues.<sup>170</sup> ORX offers members the ability to share loss data about operational events (ranging from storms to cyber-attacks) in an anonymous fashion.<sup>171</sup> The ability to share data anonymously is extremely helpful to bank members: Large, globally active banks are required to estimate the likelihood of operational risk-related losses using historical event data in order to calculate certain capital charges.<sup>172</sup> Thus, while banks require accurate data about the likelihood of an operational event and the magnitude of losses that would be likely to result from such event, accurate estimates require data from their fellow banks. Yet overtly sharing that data with one another would raise confidentiality issues and the possibility of reputational harm should the identity of the bank that shares the data become known. Accordingly, ORX exists to solve that coordination problem. In addition to loss data sharing, ORX convenes members in expert working groups to (openly) discuss best practices in operational risk mismanagement.<sup>173</sup> It also works with bank members to provide individualized benchmarking analysis so that institutions can concretely compare their operational risk management practices with those of their peers.<sup>174</sup>

To see why banks have strong incentives to solve their conduct problems collectively, one may look to their industry's structure. Large, internationally active banks, like JP Morgan Chase, Bank of America, Wells Fargo, and HSBC, are relatively homogeneous in the services they provide. These services are therefore highly substitutable. They offer similar products to similar customers.<sup>175</sup> Accordingly, standing as an outlier in regard to reputation could significantly damage any one bank's wholesale funding and ability to attract and retain retail deposit customers. Moreover, complex problems tend to affect all industry participants similarly and thus become solvable only through the propagation of shared norms and reciprocity. At the same time, to the extent banker misconduct is a societal issue, these conduct- and culture-related groups

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170. ORX Membership: Welcome to the World's Largest Operational Risk Association, ORX, <https://managingrisktogether.orx.org/orx-membership> [https://perma.cc/KG53-G39R] [hereinafter ORX Membership] (last visited July 23, 2021).

171. *Id.*

172. ORX, Operational Risk Reporting Standards (ORRS) 11 (2016), <https://f.hubspotusercontent20.net/hubfs/5992322/Reports/Banking%20operational%20risk%20reporting%20standards.pdf> [https://perma.cc/JZ8P-3ET7].

173. ORX Membership, *supra* note 170.

174. *Id.*

175. A quick look at the corporate banking face of each of these bank's websites reveals that they offer very similar services targeted toward corporate clients with similar financial needs, including investment banking and risk management. See, e.g., Bank of Am., <https://www.bofam.com/bin/searchresults.html?q=bofamlsolutions> (on file with the *Columbia Law Review*) (last visited Sept. 5, 2021); Corporate, HSBC, <https://www.business.us.hsbc.com/en> (on file with the *Columbia Law Review*) (last visited Sept. 5, 2021); Solutions, J.P.Morgan Chase & Co., <https://www.jpmorgan.com/solutions> [https://perma.cc/K5ZG-3UDQ] (last visited Sept. 5, 2021); Commercial, Wells Fargo, <https://www.wellsfargo.com/com/> [https://perma.cc/36TK-8F37] (last visited Sept. 5, 2021).

not only serve banks' private interests, they simultaneously address a public policy problem.<sup>176</sup> Ultimately, then, banks' experience with voluntary associations to address ethics, culture, and operational risk may well suggest that they are also well-equipped to use voluntary association to establish industry best practices in connection with lending to facilitate the transition to a low-carbon economy.

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To sum up, banks engage in private governance in a number of ways that suggest that they are incentivized, and well-tooled, to engage in private climate governance. Their mechanisms for mitigating risk can motivate responsible environmental behavior by borrowers. Meanwhile, bank mechanisms for screening high-potential products incentivize them to facilitate structural transformation as effective technology becomes available. Lastly, the homogeneous, competitive, and public-facing structure of the industry compels banks to associate and form groups by which these institutions can collectively and creatively address problems characterized by complexity and novelty, and which implicate societal wellbeing.

### III. BANKS AND CLIMATE GOVERNANCE: A TAXONOMY

In view of the foregoing analysis, it may not be surprising that banks' mix of private incentives and sense of social purpose has motivated them to begin experimenting with new forms of private governance in the climate space. In public statements, several of the largest U.S. banks have committed to aligning their businesses with the goals of the Paris Agreement. Specifically, major U.S. banks have pledged to "adopt[] a financing commitment that is aligned to the goals of the Paris Agreement" to hold an increase in global average temperature below 2°C above pre-industrial levels, and "ideally, to 1.5[°C]—which would require the world to achieve net-zero emissions by 2050."<sup>177</sup> In practice, many banks have already made their commitments concrete in a number of ways. Our analysis

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176. See, e.g., Thomson Reuters, *Improving Trust and Culture in the Banking Sector*, YouTube, at 09:45 (Mar. 27, 2019), <https://www.youtube.com/watch?v=ZO6ycLLnj5E/> [<https://perma.cc/RGS9-7KEQ>] (featuring a remark by Mathilde Mesnard, Deputy Director for Financial and Enterprise Affairs at the Organisation for Economic Co-operation and Development (OECD), that research shows culture is important because "culture drives conduct, and conduct drives trust, or lack of trust").

177. Press Release, JPMorgan Chase & Co., *JP Morgan Chase Adopts Paris-Aligned Financing Commitment* (Oct. 6, 2020), <https://www.jpmorganchase.com/ir/news/2020/adopts-paris-aligned-financing-commitment/> [<https://perma.cc/3WAK-QBSN>] [hereinafter *JPMorgan Chase & Co., Press Release*]; see also Press Release, Laura Alix, Writer for Am. Banker, *TD Bank Pledges Net-Zero Carbon Emissions by 2050* (Nov. 9, 2020), <https://www.americanbanker.com/news/td-bank-pledges-net-zero-carbon-emissions-by-2050/> [<https://perma.cc/25BS-LLH8>]; Press Release, HSBC, *HSBC Sets Out Net Zero Ambition* (Oct. 9, 2020), <https://www.hsbc.com/who-we-are/hsbc-news/hsbc-sets-out-net-zero-ambition/> [<https://perma.cc/G6R8-EX8Z>] [hereinafter *HSBC Sets Out Net Zero Ambition*]; Press Release, Morgan Stanley, *Morgan Stanley Announces Commitment to Reach Net-Zero*

of numerous industry-authored documents, press statements, and SEC disclosures reveals that banks are adopting a range of private governance measures to address climate change. These forms of private climate governance converge around eight types of measures that have been adopted by at least two major U.S. banks. These measures include: (1) reducing the firm's own footprint, (2) portfolio analysis and negative screens, (3) financing clean technology, (4) providing equity/advisory services, (5) climate philanthropy, (6) developing climate "best practices" through voluntary associations, (7) developing market mechanisms for carbon emissions reductions, and (8) improving reporting and disclosure of climate risk.

Beyond merely describing these eight different measures, however, our review reveals that they fall into four overarching analytical categories. The first category includes measures that seek to reduce the banks' own emissions in their operations and promote transparency within those operations. The second category includes measures by which banks seek to influence borrower behavior, including banks' decisions to decline or reduce funding for certain kinds of carbon-intensive projects. These measures include portfolio analysis, carbon emissions targets, and negative screens. The third category includes measures that banks undertake to positively accelerate or facilitate the transition by dedicating financing, investing equity, offering advice, and engaging in climate philanthropy. The fourth category includes a variety of arrangements of voluntary association to solve the complex, transitional problem of climate change—working in groups to develop collective efforts to establish carbon pricing, set standards around disclosure, and brainstorm best practices.

This Essay offers this taxonomy to help demonstrate the ways in which banks' efforts at climate governance either share features with those of other major firms or have unique features that set them apart. While the first category—reducing a firm's own emissions—is not unique to banks, the remaining categories are either largely unique to the banking industry or otherwise have specialized features as a result of their being initiated by banks. After Part III establishes this taxonomy, Part IV considers these initiatives against key normative criteria and addresses some of the challenges that banks face in implementing them.

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Financed Emissions by 2050 (Sept. 21, 2020), <https://www.morganstanley.com/press-releases/morgan-stanley-announces-commitment-to-reach-net-zero-financed-e/> [<https://perma.cc/G8TP-9TMB>] [hereinafter Morgan Stanley, Press Release]; Our Ambition to Be a Net Zero Bank by 2050, Barclays, <https://home.barclays/society/our-position-on-climate-change/> [<https://perma.cc/TF64-3QP7>] (last visited July 23, 2021); Press Release, Standard Chartered, Standard Chartered Signs Climate Commitment (June 30, 2020), <https://www.sc.com/de-en/2020/06/30/standard-chartered-signs-climate-commitment/> [<https://perma.cc/6D7Q-KAGZ>].

A. *Category One: Banks' Operational Emissions and Sustainability*

The first overarching category of private climate governance by banks includes efforts to reduce banks' own operational emissions by examining the carbon footprint of their everyday operations. Many have stated their intention to examine their own carbon footprint and the sustainability of their everyday operations.<sup>178</sup> Generally speaking, this type of commitment to reducing emissions from operations focuses on what are known as Scope 1 emissions that arise onsite and Scope 2 emissions that arise from purchased electricity and heat.<sup>179</sup> It could include such measures as changing light bulbs to LEDs and purchasing renewable energy to power the firm's daily operations.<sup>180</sup> In addition, some firms include limited Scope 3 emissions in such commitments—namely, employee business travel—which is the most easily calculated form of Scope 3 emissions.<sup>181</sup>

The banks undertaking these commitments for their own operations have largely framed them as a goal to achieve carbon neutrality. For example, JP Morgan achieved its previous commitments of (1) becoming carbon neutral in its own operations and employee business travel and (2) sourcing renewable energy for 100% of its global power needs by 2020.<sup>182</sup> In 2017, the bank also announced that it would retrofit over 4,000 branches with new energy management technologies to reduce electricity and gas usage by fifteen percent.<sup>183</sup> As of December 2020, JP Morgan installed these energy management systems in over 3,400 branches.<sup>184</sup>

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178. See *supra* note 4 and accompanying text.

179. For additional information on scope emission categorization, see *supra* note 15.

180. Mary Soto, Greenhouse Gas Protocol, GHG Protocol Scope 2 Guidance, at 29 (2015) [https://ghgprotocol.org/sites/default/files/ghgp/standards/Scope%20%20Guidance\\_Final\\_0.pdf](https://ghgprotocol.org/sites/default/files/ghgp/standards/Scope%20%20Guidance_Final_0.pdf) [<https://perma.cc/P5AV-YNF5>] (listing different measures companies can take to reduce Scope 2 emissions).

181. Greenhouse Gas Protocol, Technical Guidance for Calculating Scope 3 Emissions 81 (2013), [https://ghgprotocol.org/sites/default/files/standards/Scope3\\_Calculation\\_Guidance\\_0.pdf](https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf) [<https://perma.cc/P74B-DAHG>] (noting that emissions from transporting employees for business-related activities falls within Scope 3). In certain industries, including financial services, Scope 3 emissions, which include offsite emissions from banks' lending portfolios, tend to dwarf both Scope 1 and 2 emissions. Greenhouse Gas Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard 5 (2011) [https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf) [<https://perma.cc/RS69-SXSB>].

182. Sustainability: Our Commitments, JPMorgan Chase & Co., <https://www.jpmorganchase.com/impact/sustainability/es-commitments#operational-commitments/> [<https://perma.cc/6DP5-ZATR>] (last visited July 23, 2021) ("Starting in 2020, the firm pledged to achieve and maintain carbon neutral operations annually . . . . As part of our operational carbon neutrality commitment, in 2020 we achieved our goal to source renewable energy for 100% of our global power needs.").

183. Laura Alix, How Banks Are Fighting Climate Change, *Am. Banker* (July 11, 2017), <https://www.americanbanker.com/slideshow/how-banks-are-fighting-climate-change/> [<https://perma.cc/B2TB-8EV2>] [hereinafter Alix, How Banks Are Fighting].

184. JPMorgan Chase & Co., 2020 Environmental Social and Governance Report 30 (2020), <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/>

Citibank has likewise committed to reducing the environmental footprint of the firm's own operations and facilities.<sup>185</sup> This includes the adoption of 2025 Operational Footprint Goals to reduce GHG emissions by forty-five percent (compared to a 2010 baseline), to reduce energy consumption by forty percent, to source energy from one-hundred percent renewable sources, and to certify forty percent of the firm's facilities (by square footage) as LEED, WELL, or other equivalent certification, among other measures.<sup>186</sup> HSBC and Bank of America have likewise committed to achieving "net zero" operations by 2030 and 2050, respectively.<sup>187</sup>

These unilateral commitments by major firms to switch to renewable energy or to achieve carbon neutrality in their operations are not unique to the banking industry but echo major commitments by firms in many industries.<sup>188</sup> Accordingly, the remaining categories evidence the more unique role that banks play facilitating the transition to a low-carbon economy.

B. *Category Two: Influencing Borrower Behavior to Reduce Portfolio Emissions Through Portfolio Analysis and Negative Screens*

Many major U.S. banks have committed to examining the carbon footprint of their financing commitments—to ensure a target level of emissions across their lending portfolios by a certain date—and declining to offer credit for certain kinds of fossil fuel projects. For example, JP Morgan stated in October 2020 that it would "establish intermediate emission targets for 2030 for its financing portfolio and begin communicating about its efforts in 2021. The Firm will focus on the oil and gas, electric power and automotive manufacturing sectors and set targets on a sector by sector basis."<sup>189</sup> In this regard, JP Morgan plans to "evaluate its clients' carbon

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documents/jpmc-esg-report-2020.pdf [https://perma.cc/PTC4-TUD2] [hereinafter JPMorgan Chase & Co., 2020 ESG Report].

185. 2025 Sustainable Progress Strategy: Sustainable Operations, Citigroup, Inc., <https://www.citigroup.com/citi/sustainability/operations.htm> (on file with the *Columbia Law Review*) (last visited July 23, 2021).

186. *Id.* For more information on WELL certification, see Meet WELL v2, Int'l WELL Bldg. Inst., <https://www.wellcertified.com/certification/v2/> [https://perma.cc/NPL2-F8XM] (last visited Sept. 26, 2021) ("WELL includes strategies that aim to advance health by setting performance standards for design interventions, operational protocols and policies and a commitment to fostering a culture of health and well-being." (emphasis omitted)).

187. HSBC Sets Out Net Zero Ambition, *supra* note 177; Press Release, Bank of Am., Bank of America Announces Actions to Achieve Net Zero Greenhouse Gas Emissions Before 2050 (Feb. 11, 2021), <https://newsroom.bankofamerica.com/content/newsroom/press-releases/2021/02/bank-of-america-announces-actions-to-achieve-net-zero-greenhouse.html> [https://perma.cc/W9NS-QLYE].

188. See *supra* note 5 (discussing private environmental governance commitments by firms, not limited to the banking sector).

189. JPMorgan Chase & Co., Press Release, *supra* note 177; see also Benoit, *supra* note 2 ("[JPMorgan Chase & Co.] plans to focus its new environmental efforts on its clients in energy, automotive manufacturing and electricity generation, where it said it can do the most good.").



intensity, which tracks emissions relative to unit of output.”<sup>190</sup> These most recent efforts build on prior commitments by the firm to restrict its financing of coal mining and coal-fired power plants, as well as to prohibit financing of new oil and gas development in the Arctic, unless those plants use carbon capture technology.<sup>191</sup> Other major banks, including Bank of America, Citigroup, Goldman Sachs, Morgan Stanley, and Wells Fargo, have likewise committed not to fund oil and gas exploration in the Arctic.<sup>192</sup> They, along with other firms, have also committed to not directly financing the construction of new coal-fired power plants and conducting enhanced due diligence before extending financing to existing coal-fired power plants.<sup>193</sup> According to Morgan Stanley, such due diligence considerations include: “technology and emissions controls used, impacts on biodiversity and community, and the company’s framework for and track record in managing greenhouse gas and other emissions, waste and

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190. JPMorgan Chase & Co., Press Release, *supra* note 177.

191. JPMorgan Chase Expands Commitment, *supra* note 2. Specifically, the firm has committed to:

- Not providing lending, capital markets or advisory services to companies deriving the majority of their revenues from the extraction of coal, and by 2024, phasing out remaining credit exposure to such companies;
- Not providing project financing or other forms of asset-specific financing where the proceeds will be used to develop a new, or refinance an existing, coal-fired power plant, unless it is utilizing carbon capture and sequestration technology; and
- Not providing project financing or other forms of asset-specific financing where the proceeds will be used for new oil and gas development in the Arctic.

*Id.*

192. E.g., Lananh Nguyen, Bank of America Says It Won’t Finance Oil and Gas Exploration in the Arctic, BNN Bloomberg (Nov. 30, 2020), <https://www.bnnbloomberg.ca/bank-of-america-says-it-won-t-finance-oil-and-gas-exploration-in-the-arctic-1.1529721/> [<https://perma.cc/JE4H-27VE>]; see also Christopher M. Matthews & Orla McCaffrey, Bank’s Arctic Financing Retreat Rattles Oil Industry, Wall St. J. (Oct. 8, 2020), <https://www.wsj.com/articles/banks-arctic-financing-retreat-rattles-oil-industry-11602157853/> (on file with the *Columbia Law Review*) (mentioning the other five major banks).

193. See Bank of Am., Bank of America Corporation Environmental and Social Risk Policy Framework 6 (2021), <https://about.bankofamerica.com/content/dam/about/pdfs/environmental-and-social-risk-policy-framework-report.pdf> [<https://perma.cc/4R3H-L282>] [hereinafter Bank of Am., Environmental Policy Framework]; Citigroup, Environmental and Social Policy Framework 16 (2021), <https://www.citigroup.com/citi/sustainability/data/Environmental-and-Social-Policy-Framework.pdf> [<https://perma.cc/FAU7-5EC8>] [hereinafter Citigroup, Environmental Policy Framework]; Goldman Sachs, Environmental Policy Framework, *supra* note 4, at 10; Morgan Stanley, Environmental and Social Policy Statement 6 (2020), [https://www.morganstanley.com/about-us-governance/pdf/Environmental\\_and\\_Social\\_Policy\\_Statement\\_December\\_2020.pdf](https://www.morganstanley.com/about-us-governance/pdf/Environmental_and_Social_Policy_Statement_December_2020.pdf) [<https://perma.cc/UWN3-ZBJS>] [hereinafter Morgan Stanley, Environmental Policy Statement]; Wells Fargo, Environmental, Social, and Governance (ESG) Report 73 (2020), <https://www08.wellsfargo.media.com/assets/pdf/about/corporate-responsibility/environmental-social-governance-report.pdf> [<https://perma.cc/XZG2-3UXZ>] [hereinafter Wells Fargo, ESG Report].

wastewater, health and safety, human rights and compliance with regulations and international standards.”<sup>194</sup>

With respect to portfolio analysis, Citibank has committed to measure, manage, and reduce the climate risk and impact of its lending portfolio, and to use “climate scenario analysis and stress testing of our portfolios to understand the differentiated impacts (or resilience) our clients exhibit to physical or transition climate risk.”<sup>195</sup> Likewise, Goldman Sachs has committed to conducting carbon footprint analyses of its Asset Management Portfolio and has committed to declining certain types of financing.<sup>196</sup>

Relatedly, there is some indication that banks have begun to revise certain loan terms to account for a borrower’s carbon exposure. In June 2020, S&P Global Market Intelligence reported a new loan term amendment associated with the debt borrowed by a packaging firm, Logoplaste Consultores Técnicos SA. Its lenders agreed that the pricing structure on its existing financing package could be modified so that the margin will increase according to how much CO<sub>2</sub> the company shows it can save.<sup>197</sup> In other words, that company’s debt spreads will now be adjusted based on how that particular environmental, social, and governance (ESG) criteria changes on an annual basis.<sup>198</sup> As of May 2021, the volume of sustainability-linked loans has increased by 292% compared with all of 2020.<sup>199</sup>

Finally, many financial institutions in the United States and globally have adopted the Equator Principles (EPs), which constitute an important risk management framework and set of standards created by the financial industry to address the environmental and social impacts of banks’ lending portfolios for major projects.<sup>200</sup> To date, 118 financial institutions in

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194. Morgan Stanley, Environmental Policy Statement, *supra* note 193, at 6.

195. Citigroup, Environmental Policy Framework, *supra* note 193, at 6; see also Press Release, Citigroup, Citi Announces New Five-Year Sustainable Progress Strategy to Finance Climate Solutions and Reduce Climate Risk (July 29, 2020), <https://www.citigroup.com/citi/news/2020/200729a.htm> (on file with the *Columbia Law Review*).

196. Goldman Sachs, Market Solutions to Address Climate Change, <https://www.goldmansachs.com/citizenship/environmental-stewardship/documents/climate-change-highlights.pdf> [<https://perma.cc/5YEL-54SG>] (last visited July 23, 2021); see also Goldman Sachs, Environmental Policy Framework, *supra* note 4, at 10.

197. Nina Flitman, In Market First, Leveraged Loan Pricing for Logoplaste Linked to ESG, S&P Glob. Mkt. Intel. (June 8, 2020), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/in-market-first-leveraged-loan-pricing-for-logoplaste-linked-to-esg-58958660> [<https://perma.cc/PH27-2SKW>].

198. *Id.*

199. Jacqueline Poh & Paula Seligson, U.S. Sustainability-Linked Loans Are 292% More Than All of 2020, Bloomberg (May 24, 2021), <https://www.bloomberg.com/news/articles/2021-05-24/u-s-sustainability-linked-loans-are-292-more-than-all-of-2020> (on file with the *Columbia Law Review*).

200. The Equator Principles, Equator Principles, <https://equator-principles.com/about/> [<https://perma.cc/BVP7-YAMQ>] [hereinafter Equator Principles] (last visited Aug. 15, 2021); Tracking the Equator Principles, BankTrack, [https://www.banktrack.org/page/tracking\\_the\\_equator\\_principles/](https://www.banktrack.org/page/tracking_the_equator_principles/) [<https://perma.cc/CPN9-39JJ>] (last visited July 23, 2021) (tracking bank compliance with the EPs).

thirty-seven countries have adopted the EPs and qualify as “Equator Principles Financial Institutions” (EPFIs).<sup>201</sup> The most recent version, EP4, was adopted in 2019.<sup>202</sup> The EPs require member financial institutions to obtain information from borrowers about the environmental and social impacts of projects for which they seek credit.<sup>203</sup> The EPs apply to the following categories of financial product (that exceed certain thresholds): Project Finance Advisory Services, Project Finance, Project-Related Corporate Loans, Bridge Loans, Project-Related Refinance, and Project-Related Acquisition Finance.<sup>204</sup>

The Equator Principles go a step beyond pure information disclosure, however, as they recognize that “negative impacts on Project-affected ecosystems, communities, and the climate should be avoided where possible”; that if such impacts are “unavoidable[,] they should be minimised and mitigated”; and that if “residual impacts remain, clients should . . . offset environmental impacts as appropriate.”<sup>205</sup> At worst, “offsetting” requires some mitigation of those impacts, with the goal of ensuring that projects on both sides of the Equator meet basic standards of environmental and social responsibility.

As the Appendix shows below,<sup>206</sup> most of the large, internationally active banks have adopted measures of this kind—to examine their existing lending portfolio and decline to provide financing for certain kinds of projects or otherwise engage in mitigation to reduce the negative environmental (and social) impacts of their lending portfolios.

### C. *Category Three: Accelerating the Low-Carbon Transition*

In addition to the “negative screening” and monitoring techniques described above, banks are taking positive steps to commit capital and expertise to the transition to a low-carbon economy. These positive steps to accelerate the transition include providing financing to clean energy and low-carbon projects, providing advising services to clients, and promoting climate philanthropy.

1. *Providing Funding for Clean-Energy, Sustainable Projects.* — Banks are not only keen to reduce emissions from their portfolios and screen out fossil fuel projects, but they are also affirmatively committing to fund new

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201. EP Association Members & Reporting, Equator Principles, <https://equator-principles.com/members-reporting/> [<https://perma.cc/KX8T-2AZN>] (last visited July 23, 2021).

202. Review of the Equator Principles—EP4, Equator Principles, <https://equator-principles.com/ep4/> [<https://perma.cc/6297-CB2A>] [hereinafter EP4] (last visited July 23, 2021).

203. Equator Principles, The Equator Principles: July 2020, at 8–9, 13 (2020), <https://equator-principles.com/wp-content/uploads/2021/02/The-Equator-Principles-July-2020.pdf> [<https://perma.cc/RU33-9P5Y>] [hereinafter EP: July 2020].

204. See Equator Principles, *supra* note 200.

205. EP: July 2020, *supra* note 203, at 3.

206. See *infra* Appendix.

climate-related technologies and research in a variety of ways. This category of private climate governance includes commitments to fund sustainable projects and emerging climate technology, and commitments to underwrite or invest in green bonds.<sup>207</sup>

For example, Morgan Stanley “seeks to mobilize \$250 billion toward low-carbon solutions between 2018 and 2030,” including through “clean-tech and renewable energy financing, sustainable bonds, and other relevant transactions and investments.”<sup>208</sup> Similarly, in 2018, “Wells Fargo announced a commitment to lend or invest \$200 billion to environmentally sustainable businesses and projects by 2030, with 50% focused on transactions that directly support the transition to a low-carbon economy, including renewables, energy-efficiency technologies, green buildings, green bonds, and low-emission vehicles.”<sup>209</sup>

Some banks have been digging into such investments for several years. In 2013, for example, Bank of America issued a \$500 million green bond to finance green investments including renewable energy and energy efficiency projects.<sup>210</sup> As of October 2019, that bank had issued its fifth such corporate green bond (for two billion dollars), making it the first U.S. financial institution to issue as many green bonds by that period. Bank of America’s stated goal in these issuances is to “increase the scale and impact of clean energy projects across the globe.”<sup>211</sup> Though not a U.S. bank holding company, Barclays does have a significant U.S. presence via its intermediate holding company.<sup>212</sup> There, executive compensation will be

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207. See, e.g., JPMorgan Chase & Co., Annual Report (Form 10-K) 45 (Feb. 25, 2020), <https://www.sec.gov/Archives/edgar/data/0000019617/000001961720000257/corp10k2019.htm> [<https://perma.cc/WAB2-7FFT>] (recounting JPMorgan Chase & Co.’s commitment “to address climate change and further promote sustainable development” by committing to facilitate \$200 billion in financing in 2020 that will align with the objectives of the United Nations Sustainable Development Goals, including \$50 billion in financing for green initiatives). Though standard definitions are still lacking, green bonds generally refer to debt issuances that raise money for “green” projects or “green” companies. See Lyubov Pronina, What Are Green Bonds and How ‘Green’ is Green?, *Bloomberg Businessweek* (Mar. 24, 2019), <https://www.bloomberg.com/news/articles/2019-03-24/what-are-green-bonds-and-how-green-is-green-quicktake> (on file with the *Columbia Law Review*).

208. Sustainability at Morgan Stanley, Morgan Stanley, <https://www.morganstanley.com/about-us/sustainability-at-morgan-stanley/> [<https://perma.cc/WB29-NG3X>] (last visited July 23, 2021).

209. Wells Fargo, Wells Fargo Issue Brief: Climate Change 2 (2020), <https://www08.wellsfargomedia.com/assets/pdf/about/corporate-responsibility/climate-change-issue-brief.pdf> [<https://perma.cc/2MPR-BKMA>] [hereinafter Wells Fargo Issue Brief].

210. Press Release, Bank of Am., Bank of America Issues \$500 Million “Green Bond” (Nov. 21, 2013), <https://investor.bankofamerica.com/press-releases/detail/552/bank-of-america-issues-500-million-green-bond/> [<https://perma.cc/FBA5-R8NG>].

211. Press Release, Bank of Am., Bank of America Issues Fifth Corporate Green Bond for \$2 Billion (Oct. 25, 2019), <https://newsroom.bankofamerica.com/press-releases/environment/bank-america-issues-fifth-corporate-green-bond-2-billion/> [<https://perma.cc/FH33-3NAA>].

212. Letter from Matt Larson, Chief Fin. Officer—Americas, Barclays, to Shayne Kuhaneck, Acting Tech. Dir., Fin. Acct. Standards Bd. (Sept. 9, 2019), <https://www.fasb.>

linked to the realization of its goal to facilitate the low-carbon transition through financing clean energy projects and green bond investment.<sup>213</sup> Again, most of the banks analyzed in this Essay have made commitments to provide financing to facilitate the transition.

2. *Providing Equity and Advice.* — Most of the banks studied here are in fact bank holding companies that have subsidiaries with capacity to invest equity (like asset managers) and provide underwriting and advisory services. Some of these institutions have tapped these parts of their businesses to commit to making equity investments in sustainable or climate-related ventures and/or to provide entrepreneurial advice to early-growth companies that need capital and guidance on how best to scale.

HSBC, for instance, plans to “[b]uild one of the world’s largest natural capital managers—to mainstream natural capital as an asset class, and invest in activities that preserve, protect and enhance nature over the long-term” and thus has created “a joint venture called HSBC Pollination Climate Asset Management.”<sup>214</sup> At JP Morgan, the firm has launched an ESG Group to “advise clients on reducing their carbon emissions and respond to increased interest in ESG investing,” as well as an Energy Transition Team “to provide strategic and financial advice to corporate clients on M&A transactions that support their carbon optimization objectives.”<sup>215</sup> In similar spirit, Citigroup has established a new “\$250 Billion Environmental Finance Goal to accelerate the transition to a low-carbon economy.”<sup>216</sup> This goal is broad and includes aspirations to finance activities in renewable energy, clean technology, water quality and conservation, sustainable transportation, green buildings, energy efficiency, circular economy, and sustainable agriculture and land use.<sup>217</sup>

Interestingly, many of the banks that had been instrumental in facilitating the industrial revolutions of the eighteenth and nineteenth centuries, discussed above, were also universal banks that facilitated the economic transformations of their day by supplying equity and entrepreneurial advice alongside bank credit.<sup>218</sup>

3. *Climate Philanthropy.* — In some cases, banks are also donating to third-party organizations as part of their philanthropic programs to pro-

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org/cs/BlobServer?blobkey=id&blobwhere=1175836044766&blobheadname1=Content-Disposition&blobheadvalue1=%20&blobcol=urldata&blobtable=MungoBlobs [https://perma.cc/5UCG-8EKH]. Barclays U.S. Intermediate Holding Company, known as Barclays US LLC, and its subsidiaries are what make up the majority of the U.S. presence. *Id.*

213. Alix, *How Banks Are Fighting*, *supra* note 183.

214. HSBC Sets Out Net Zero Ambition, *supra* note 177.

215. JP Morgan Chase Expands Commitment, *supra* note 2.

216. Citigroup, *Environmental Policy Framework*, *supra* note 193, at 4.

217. *Id.* at 5.

218. See Da Rin & Hellmann, *supra* note 127, at 373–75, 382 (discussing how late nineteenth and early twentieth century German and Italian banks provided entrepreneurial guidance to growing industrial enterprises).

mote climate innovations. These efforts are strategically distinct from equity investments. A bank's equity (and other) investments to facilitate transition and support sustainability are tied to its revenue-generating function, and so they will be guided by a bank's risk limits and appetite, balance-sheet constraints, and diligence requirements. Some climate-related endeavors will fall outside the net. A dedicated corporate social responsibility (CSR) policy or philanthropy program could in theory fund a wider range of projects. Maintaining CSR programs gives banks more flexibility.

These forms of bank initiative stand in contrast to the financing measures listed above because the banks take no equity stake in these third-party organizations. For example, HSBC has launched a new initiative in this regard, earmarking \$100 million to "scale climate innovations,"<sup>219</sup> while JP Morgan has committed to \$200 billion in financial support to advance the objectives of the United Nations Sustainable Development Goals (SDGs), including through climate-related finance, as well as social and economic development.<sup>220</sup> These three forms of action by banks leverage their unique role in providing not only capital but also advice within their value chains to promote the transition to a low-carbon economy.

D. *Category Four: Voluntary Associations and Best Practices*

Finally, banks do not always act alone. Indeed, to address issues that affect the entire industry—such as ethics—banks have worked together within voluntary industry associations and informal working groups to determine best practices and industry standards. Banks are likewise working in concert with others through such associations to facilitate the transition to a low-carbon economy.

1. *Brainstorming Best-Practices and Industry Standards.* — A number of banks are engaging in collaborative activities, ranging from informal working groups to more formal associations, to develop ideas and, in turn, best practices for contributing to transition collectively as an industry.<sup>221</sup> Wells Fargo, for example, established in 2019 "a cross-functional Climate Change Working Group, which leverages internal expertise, leading climate science and assumptions, and external resources to enhance understanding of the implications of climate change on our business and to make recommendations to company and line-of-business leaders with regard to policies and procedures that advance climate-risk management across the enterprise in a coordinated and strategic manner."<sup>222</sup> Morgan

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219. HSBC Sets Out Net Zero Ambition, *supra* note 177.

220. JPMorgan Chase & Co., Press Release, *supra* note 177.

221. Cf. David Zaring, Best Practices, 81 N.Y.U. L. Rev. 294, 296–97 (2006) (discussing the creation and adoption by federal agencies of best practices, but not focusing on industry voluntary associations).

222. Wells Fargo Issue Brief, *supra* note 209, at 3.

Stanley has stated its commitment to providing “leadership” in “developing the tools and methodologies needed to measure and manage our carbon-related activities in appropriate ways.”<sup>223</sup> Numerous banks have joined PCAF, which is a “global partnership of financial institutions” working together to “develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with . . . [bank] loans and investments.”<sup>224</sup> For its part, Morgan Stanley has noted that working with PCAF is key to overcoming “the lack of standardized tools and methodologies around measuring and disclosing financed emissions.”<sup>225</sup>

2. *Developing Market Mechanisms.* — Banks have also been discussing, and advocating for, various market mechanisms that may address climate change. The most developed idea for a market mechanism involves the adoption of a price on carbon. Carbon pricing can take a number of different forms, including “a carbon tax or fee, or a cap-and-trade system that depends on government allocations or permits.”<sup>226</sup> The basic idea is that, whether set by governments or markets, CO<sub>2</sub> emitters are charged for each ton that they release through a tax or fee. As industry analysts point out, “Either way, carbon pricing takes advantage of market mechanisms to create financial incentives to lower emissions by switching to more efficient processes or cleaner fuels.”<sup>227</sup>

While many scholars and firms have called for the adoption of a carbon tax, the fact that banks are now supporting this public policy strategy is strategically important, as they are likely to be involved in creating trading mechanisms for cap-and-trade regimes or markets for carbon credits; other nonfinancial companies are also likely to look to banks as corporate role models when it comes to the adoption of market mechanisms such as these. Among the other banks that have supported the idea of a carbon tax, Banco Santander, one of the founding members of the Climate Leadership Council, has advocated for a carbon dividends framework to counteract climate change.<sup>228</sup> Finally, JP Morgan Chase has joined various NGOs, including the Climate Leadership Council, Rocky Mountain Institute Center for Climate-Aligned Finance, and Climate Action 100+,

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223. Morgan Stanley, Press Release, *supra* note 177.

224. About, P’ship for Carbon Acct. Fins. (PCAF), <https://carbonaccountingfinancials.com/about/> [<https://perma.cc/FK29-6239>] [hereinafter About PCAF] (last visited July 23, 2021).

225. Morgan Stanley, Press Release, *supra* note 177.

226. What is Carbon Pricing?, S&P Glob. (Feb. 25, 2020), <https://www.spglobal.com/en/research-insights/articles/what-is-carbon-pricing> [<https://perma.cc/J7Q8-SV7K>].

227. *Id.*

228. Alix, *How Banks Are Fighting*, *supra* note 183. For a comprehensive report on trends in carbon pricing, see World Bank, *State and Trends of Carbon Pricing* (2019), <https://openknowledge.worldbank.org/handle/10986/31755/> [<https://perma.cc/H7KG-WLQH>]. A carbon fee and dividend combines a carbon tax on the sale of fossil fuels or embedded carbon in products, with a redistribution of the revenue generated by the tax or fee to a set population. See Alix, *How Banks Are Fighting*, *supra* note 183.

and it is working with the Business Roundtable to advocate for market-based policies like carbon pricing.<sup>229</sup>

3. *Reporting and Disclosure.* — While the above measures have involved the restriction or channeling of funds to facilitate a transition to a low-carbon economy, banks have also been focused on questions of reporting and disclosure. Current SEC rules surrounding public company disclosure require publicly traded firms—not just banks—to disclose “material” risks to investors and the public in annual and quarterly reports, as well as when certain specific events occur, like mergers.<sup>230</sup> The Supreme Court has defined a fact to be “material” if there is “a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.”<sup>231</sup> SEC Regulation S-K requires firms to make certain disclosures related to environmental risks, including the cost of compliance with environmental laws, material capital expenditures, material pending legal proceedings, and material risk events.<sup>232</sup> In 2010, the SEC issued guidance explaining how certain physical and operational climate-related risks can be “material,” and thus ought to be disclosed.<sup>233</sup> But this guidance has not yet resolved the matter. On the one hand, guidance is merely guidance, not regulation; as such, some contend that firms are not required to engage in a particular manner of climate-related disclosures in their public filings. On the other side are those who argue that the guidance is insufficiently demanding as a substantive matter and that the SEC needs to require meaningful, standardized climate disclosures.<sup>234</sup> Firms do, however, often engage in more descriptive

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229. See JPMorgan Chase & Co., Press Release, *supra* note 177.

230. See Securities Exchange Act of 1934, §§ 12–14, 15 U.S.C. §§ 78l–78n (2018); 17 C.F.R. §§ 229.10–702 (2020); *Basic, Inc. v. Levinson*, 485 U.S. 224, 230 (1988) (citing S. Rep. No. 73-792, at 1–5 (1934)). For a discussion of SEC disclosures in the climate context, see generally Light, *Law of Corporation*, *supra* note 18.

231. *Matrixx Initiatives, Inc. v. Siracusano*, 563 U.S. 27, 38 (2011) (employing the *TSC Industries* standard as adopted by *Basic*); *Basic*, 485 U.S. at 231–32 (adopting the *TSC Industries* standard for materiality for § 10b and Rule 10b-5); *TSC Indus., Inc. v. Northway, Inc.*, 426 U.S. 438, 449 (1976).

232. Adoption of Integrated Disclosure System, 47 Fed. Reg. 11,380, 11,381 (Mar. 16, 1982) (codified at 17 C.F.R. §§ 200, 201, 229, 239, 240, 249, 250, 260, 274).

233. Commission Guidance Regarding Disclosure Related to Climate Change, 75 Fed. Reg. 6290, 6293–95 (Feb. 8, 2010) (to be codified at 17 C.F.R. §§ 211, 231, 241) (clarifying climate disclosure obligations).

234. Indeed, many legal scholars have called existing standards for climate disclosure inadequate and have proposed revisions. See, e.g., Jill E. Fisch, Making Sustainability Disclosure Sustainable, 107 Geo. L.J. 923, 952, 957 (2019) (proposing a “sustainability discussion and analysis” section of a firm’s annual report to improve the SEC’s disclosure rules with respect to climate); Virginia Harper Ho, Nonfinancial Risk Disclosure and the Costs of Private Ordering, 55 Am. Bus. L.J. 407, 443–56 (2018) (arguing that existing SEC disclosure rules are inadequate and must be enhanced for improved ESG disclosure, including climate-related disclosure); Virginia Harper Ho & Stephen Kim Park, ESG Disclosure in Comparative Perspective: Optimizing Private Ordering in Public Reporting, 41 U. Pa. J. Int’l L. 249, 255–56 (2019) (noting that because existing systems of ESG standards are voluntary



disclosures through their own sustainability reports or through platforms like the CDP. Some scholars and commentators have thus called for promulgation of clear, harmonized disclosure standards for public filings.<sup>235</sup>

The call for improved public disclosures is growing louder, and banks are taking action. In part, this includes improved disclosures of their own material climate risks. Citigroup, for example, has taken steps in this direction in its 2019 Form 10-K—the annual report issued to investors as required by the SEC—published in February 2020. In that report, Citigroup mentions that it has incorporated environmental factors, such as “climate risk assessment and reporting criteria for certain obligors, as necessary.”<sup>236</sup> According to its public filing, Citigroup considers and evaluates factors including “consideration of climate risk to an obligor’s business and physical assets and, when relevant, consideration of cost-effective options to reduce greenhouse gas emissions.”<sup>237</sup> Citigroup also discusses at considerable length the ways in which it perceives climate to present medium- and long-term risks to its business, and how it plans to respond.<sup>238</sup> Likewise, Goldman Sachs, BNY Mellon, and Wells Fargo now include climate risk as part of their discussion of risk factors, as seen beginning with their 2019 Form 10-K.<sup>239</sup>

In addition to improving their own disclosures, banks are joining associations that are calling for improved public disclosures more broadly. For example, some banks have joined the Task Force on Climate Related Financial Disclosures (TCFD), which is formally organized by the Financial

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and inconsistent and therefore make ESG data difficult to use, public regulators should look to the private sector for regulatory guidance in establishing a consistent ESG standard). However, other scholars have also pointed out the ways in which increasing disclosure has real costs. See, e.g., Alex Edmans, Mirko S. Heinle & Chong Huang, *The Real Costs of Financial Efficiency When Some Information Is Soft*, 20 *Rev. Fin.* 2151, 2152 (2016) (demonstrating that the disclosure of “hard” (quantitative and verifiable) information as compared to “soft” (intangible or unverifiable) information may increase financial efficiency at the expense of real efficiency by prioritizing improvement of “hard” numbers over “soft” numbers, like reducing investment in intangibles to improve financial performance).

235. See *supra* note 234.

236. Citigroup Inc., Annual Report (Form 10-K) 77 (Feb. 21, 2020), <https://www.sec.gov/Archives/edgar/data/0000831001/000083100120000031/c-12312019x10k.htm> [<https://perma.cc/296N-26D3>].

237. *Id.*

238. See *id.* at 310.

239. See Goldman Sachs, Annual Report (Form 10-K) 44 (Feb. 20, 2020) <https://www.sec.gov/Archives/edgar/data/886982/000119312520043853/d826673d10k.htm> [<https://perma.cc/3SVG-T35Y>]; Bank of N.Y. Mellon Co., Annual Report (Form 10-K) 84–85 (Feb. 27, 2020) <https://www.sec.gov/Archives/edgar/data/0001390777/000139077720000044/form10-k4q19.htm> [<https://perma.cc/7FTC-7HAL>]; Wells Fargo, Annual Report (Form 10-K) 110 (Feb. 26, 2020), [https://www.sec.gov/Archives/edgar/data/72971/000007297121000197/wfc-20201231\\_d2.htm](https://www.sec.gov/Archives/edgar/data/72971/000007297121000197/wfc-20201231_d2.htm) [<https://perma.cc/8TJM-6VSF>].

Stability Board and includes both governments and private actors as members.<sup>240</sup> To date, membership includes representatives from multiple global banks and asset managers.<sup>241</sup> The goal of the TCFD is to improve climate disclosures in public regulatory filings and to provide guidance to firms as to how they should go about such disclosures.<sup>242</sup> In addition to TCFD, various other banks, including Morgan Stanley, have opted to join PCAF to facilitate the standardization of disclosure tools and methodologies.<sup>243</sup>

To be sure, the issue of climate disclosure is not unique to banks—many other public companies likewise face calls to report more information about their efforts to address climate change.<sup>244</sup> But there are reasons to see particular value in banks' efforts to disclose their climate issues and initiatives voluntarily. For one, it is often said that banks are "special."<sup>245</sup> This is because most of society depends on the services banks provide and, at the same time, is vulnerable to a bank's distress in ways distinct from other companies.<sup>246</sup> For this reason, we may think that society has a heightened interest in information about a bank's operations, strategy, and overall resilience with respect to climate change, an idea one of us has explored in the cyber risk context.<sup>247</sup> In addition, as such a significant presence in the business world, banks' adoption of climate disclosures could

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240. Task Force Members, Task Force on Climate-Related Fin. Disclosures, <https://www.fsb-tcfd.org/members/> [<https://perma.cc/4VKJ-THEK>] (last visited July 23, 2021).

241. *Id.*

242. This approach stands in contrast to that of other private governance climate disclosure standards like the CDP, which are aimed at improving voluntary reporting but do not speak to what firms must disclose in their public SEC filings. Among those calling for improved disclosure, there appears to be some coalescing around the TCFD standards for improved public disclosures. Indeed, one recent bill introduced in Congress, the Climate Risk Disclosure Act, proposes mandatory standards for climate risk disclosure and directs the SEC to adopt regulations to that effect. See Climate Risk Disclosure Act of 2019, S. 2075, 116th Cong. (2019). Under the proposed legislation, if the SEC were to fail to adopt such rules by a set deadline, the bill would render disclosures that comply with the TCFD standards mandatory to meet the terms of the statute. *Id.* § 8.

243. See *supra* notes 223–225 and accompanying text.

244. See, e.g., Fisch, *supra* note 234, at 934 (explaining how since the 1960s, public companies have faced pressure from social and political groups seeking to use securities laws to obtain greater corporate sustainability disclosure).

245. See, e.g., Biagio Bossone, What Makes Banks Special? A Study of Banking, Finance, and Economic Development 2 (World Bank Pol'y Rsch. Working Paper No. 2408, 2000), [https://openknowledge.worldbank.org/bitstream/handle/10986/19815/multi\\_page.pdf?sequence=1&isAllowed=y](https://openknowledge.worldbank.org/bitstream/handle/10986/19815/multi_page.pdf?sequence=1&isAllowed=y) [<https://perma.cc/2QWK-36CG>].

246. See *id.* at 4; Catherine England, Are Banks Special?, Regulation: The CATO Review of Business and Government, Spring 1991, at 25, 25–26; E. Gerald Corrigan, Are Banks Special?: A Revisitation, Fed. Rsr. Bank of Minneapolis (Mar. 1, 2000), <https://www.minneapolisfed.org/article/2000/are-banks-special> [<https://perma.cc/N7KZ-H5VG>].

247. See Christina Parajon Skinner, Bank Disclosure of Cyber Exposure, 105 Iowa L. Rev. 239, 240, 249–53 (2019) ("Because banks provide critical services to the broader economy, such as payments, credit, and demand deposits, a large bank's vulnerability to a cyber

go far in setting a public-company-wide standard, trend, or best practice. As such, while most public companies face some pressure to disclose climate issues, banks' endeavors to disclose may have an oversized impact on the matter. Finally, from the perspective of banks, having additional information about other firms' climate risks may help to improve their own ability to engage in portfolio analysis. Thus, it is no surprise that many are joining voluntary associations like the TCFD that are calling for improved disclosures more broadly.

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Taken together, this range of private climate governance mechanisms and arrangements is quite broad, and the four categories echo those ways in which banks have adopted private governance in other contexts (as Part II discusses). Banks are adopting measures that seek to influence borrower behavior; they are adopting measures to finance and facilitate a major infrastructure transition; they are working in voluntary associations to solve complex, transitional (and transnational) problems; and finally, they are looking inward to their own operations.

#### IV. NORMATIVE IMPLICATIONS AND CHALLENGES

In previous sections, this Essay establishes a working theory of banks and climate governance—setting out context around private climate and environmental governance and establishing the mix of public responsibility and private incentives that inclines banks to take on this challenge. It has also sketched out, with some analytic rigor, how these bank-led actions have taken shape so far. This Part concludes by offering preliminary thoughts on potential normative criteria against which to evaluate these forms of climate governance by banks, as well as the value of debt as compared to equity, as a source of climate-risk discipline.

##### *A. Assessing Private Environmental and Climate Governance*

Legal scholarship to date has offered a set of normative criteria against which to measure different forms of private environmental governance.<sup>248</sup> These general criteria can just as easily apply to climate governance by banks. First among these is effectiveness: namely, whether the tool will actually achieve its stated goal.<sup>249</sup> In the climate context, it is specifically important to understand whether the private governance tool has the

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attack—which could threaten the disruption of these critical services—presents the potential for adverse spillover effects.”).

248. Light & Orts, *Parallels*, supra note 5, at 54–71 (citing sources on factors against which to evaluate public environmental law and adapting these normative criteria to evaluate private environmental governance).

249. *Id.* at 55, 57–58 (highlighting effectiveness as an important normative criterion in assessing private environmental governance since, unlike with public legal requirements, compliance is voluntary).

potential for transnational impacts (rather than a purely local impact), given the global nature of the climate crisis.<sup>250</sup> A related criterion includes the tool's ability to stimulate innovation (in contrast to some forms of public law that mandate the use of specific technologies).<sup>251</sup> In the context of the actions taken by banks described and discussed above, these criteria relating to the actions' effectiveness, ability to stimulate innovation, and transnational impacts are largely empirically testable. Because they are emerging and, in some cases, financing long-term projects, we do not offer conclusions here but instead several hypotheses. In particular, we offer the hypothesis that private climate governance by banks will promote global solutions to the climate crisis and not merely domestic ones. And we also anticipate that these new forms of financing and climate philanthropy will promote technological innovation.<sup>252</sup> These are, of course, merely hypotheses that must be tested through empirical study.

There will also be continuing conversations about the convergence of ESG and economics. In particular, investors will—at least in part—evaluate the success of the measures in terms of their consistency with the bank's business objectives. Those banks that can best accomplish their sustainability goals, as well as their economic goals (e.g., the return on any given deal), will likely be seen as success stories in front of their peers.<sup>253</sup> Ultimately, banks will need to continue to do well financially if they are to maintain a runway for expanding their climate initiatives and shareholder buy-in.

There are also other, more normatively laden, criteria against which to evaluate private environmental and climate governance. They include questions of whether particular tools are efficient (comparing their costs and benefits),<sup>254</sup> as well as the fairness of the distribution of those costs and benefits, which has implications for environmental and distributive

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250. Greenhouse gases are not like local pollutants that only affect certain geographic areas near their source; in contrast, greenhouse gases mix in the atmosphere and can remain there for periods of time ranging from a few to thousands of years. Overview of Greenhouse Gases, EPA, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases/> [<https://perma.cc/N7WS-GS9S>] (last visited July 23, 2021).

251. Light & Orts, *Parallels*, *supra* note 5, at 62–63 (noting that the scale of past programs to promote innovation may need partnerships between the public and private sectors).

252. Standards and metrics are emerging to evaluate banks' actions, including the World Resources Institute's Green Targets tool (in beta format), which aims to compare private sector banks' commitments to sustainable finance. Green Targets: A Tool to Compare Private Sector Banks' Sustainable Finance Commitments (as of July 2019), World Res. Inst., <https://www.wri.org/finance/banks-sustainable-finance-commitments/> [<https://perma.cc/86QX-EHFE>] (last visited July 23, 2021).

253. See Flitman, *supra* note 197 (noting that for deals where ESG criteria are linked, investors have “to make sense on a blended basis—we have to find that equilibrium between the return we’re getting and the sustainability factor”).

254. Light & Orts, *Parallels*, *supra* note 5, at 59–60 (explaining that the efficiency of private environmental governance depends on how integrated such programs are in an organization).

justice.<sup>255</sup> These too, require empirical testing, and it is likewise too soon to speculate. It is worth noting, however, that there is substantial literature on climate justice and the distributional implications of a transition to a low-carbon economy.<sup>256</sup>

Still other criteria for evaluation relate to the process by which a standard or private governance tool is developed, as well as its ongoing use: accountability, transparency, and durability.<sup>257</sup> In the general private governance context, public statements of actions, commitments, and standards, as well as third-party certifications, can promote accountability, transparency, and legitimacy, while unilateral actions that can easily be reversed may do the opposite or may increase the risk of greenwashing.<sup>258</sup> How easily the measure or action can be reversed or undone likely stands in an inverse relationship to how quickly it can be put into place. These process-based criteria can sometimes be assessed—at least in part—before the consequences of a particular initiative are known. In many cases, the banks' public statements and commitments are likely to render them more durable (and certainly more transparent) than purely private commitments, especially those statements made in public regulatory filings as compared to press releases.<sup>259</sup> Likewise, collective industry commitments, such as those through voluntary associations, tend to have more process-based safeguards than unilateral actions. However, some tools employed by banks require a measure of confidentiality, such as specific loan covenants, proprietary underwriting criteria, or specific advice to portfolio companies.<sup>260</sup> While some examples of private climate governance may be less transparent than others, it is worth noting that this does not necessarily affect their effectiveness, efficiency, or implications for environmental and

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255. *Id.* at 60–62 (noting that private environmental governance may not reach underprivileged communities to the same extent public governance does).

256. See, e.g., Ann M. Eisenberg, *Just Transitions*, 92 S. Cal. L. Rev. 273, 282–84 (2019) (discussing the disparate impact the transition to a low-carbon economy will have on communities whose jobs are heavily carbon-reliant); Shelley Welton & Joel Eisen, *Clean Energy Justice: Charting an Emerging Agenda*, 43 Harv. Env't L. Rev. 307, 308 (2019) (arguing that discourse among lawmakers and academics on the transition to a “green” economy ought to consider several questions of equity that combine into the concept of “clean energy justice”).

257. Light & Orts, *Parallels*, *supra* note 5, at 63–64, 68–70 (noting that public environmental governance inherently embodies these criteria to an extent that private systems cannot easily match).

258. *Id.* at 67–68 (defining greenwashing as “misleading or false public statements about environmental performance” and noting that both public and private environmental governance may be subject to it).

259. *Id.* at 67.

260. See, e.g., Paul A. Griffin, David H. Lont & Kate McClune, *Insightful Insiders? Insider Trading and Stock Return Around Debt Covenant Violation Disclosures*, 50 *Abacus* 117, 117 (2014); Qingzhong Ma, *Investment Banks Advising Takeover Targets*, 37 *J. Econ. & Fin.* 339, 343 (2013); Rajesh P. Narayanan, Kasturi P. Rangan & Nanda K. Rangan, *The Effect of Private-Debt-Underwriting Reputation on Bank Public-Debt Underwriting*, 20 *Rev. Fin. Stud.* 597, 600 (2007).

distributive justice. Again, these normative criteria raise issues that must be tested empirically. Finally, given the newness and long-term nature of these commitments, it remains to be seen whether they will be durable far into the future.

In addition to these general criteria, however, it is important to consider what criteria must be included to evaluate private governance by banks, specifically. First among these is the potential influence of debt on the transition to a low-carbon economy as compared to other forms of financing—most notably equity.

B. *How Does Debt Compare to Equity?*

While banks have been active in the climate space, so, too, have asset managers. Many institutional investors have made considerable commitments to address climate change issues as they arise in connection with their equity investments in various portfolio companies.<sup>261</sup> Observing this notable development, a sizable body of scholarly literature has focused on the impact of these equity holders.<sup>262</sup> This Essay, meanwhile, offers a parallel account of bank debt to complement the equity-focused literature. It thus seems fitting to conclude with some preliminary thoughts on how bank debt compares to equity in regard to climate-related corporate governance. Ultimately, the Essay concludes that debt and equity have different strengths and weaknesses as forms of private climate governance, and that both are important actors in the transition to a low-carbon economy.

As this Essay urges, bank debt can and does discipline its borrowers. As debtors to a bank, corporate managers must be disciplined in their own investments—the borrower must be sure that returns on their projects will be sufficient to cover the cost of interest expenses (at least). The conse-

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261. See, e.g., BlackRock, BlackRock ESG Integration Statement 3–4 (July 27, 2018), <https://www.blackrock.com/corporate/literature/publication/blk-esg-investment-statement-web.pdf> [<https://perma.cc/FW8K-DDGM>] (last updated May 19, 2021); Miriam Gottfried, Blackstone Sets Goal to Reduce Carbon Emissions, *Wall St. J.* (Sept. 29, 2020), <https://www.wsj.com/articles/blackstone-sets-goal-to-reduce-carbon-emissions-11601377200/> (on file with the *Columbia Law Review*).

262. See, e.g., Lucian A. Bebchuk, Alma Cohen & Scott Hirst, The Agency Problems of Institutional Investors, 31 *J. Econ. Persps.* 89, 89–90 (2017) (examining the stewardship of investment managers of mutual funds); Ronald J. Gilson & Jeffrey N. Gordon, The Agency Costs of Agency Capitalism: Activist Investors and the Revaluation of Governance Rights, 113 *Colum. L. Rev.* 863, 865–67 (2013) (examining the impact on corporate governance from the concentration of ownership among large institutional investors). For a different perspective, see Lucian A. Bebchuk, Alon Brav & Wei Jiang, The Long-Term Effects of Hedge Fund Activism, 115 *Colum. L. Rev.* 1085, 1087–89 (2015) (examining the link between activist investments and long-term value of the target, and finding no evidence that an immediate positive reaction to an activist intervention is followed by negative abnormal returns over the longer horizon). On the role of equity in climate governance specifically, see, e.g., Condon, *supra* note 14, at 18–19; Coffee, *Future of Disclosure*, *supra* note 14, at 5–6, 27–29.

quence of failing to be so disciplined could be bankruptcy and reputational harm. Debt also often comes with strings attached, called covenants, that can impose a panoply of restrictions on borrower behavior (and accompanying remedies for a bank should those promises be breached).

Equity holders have different levers. Large shareholders can threaten “exit,” that is, to divest their fund’s equity holdings in a particular company as a means of “persuad[ing] companies to act in a more socially responsible manner.”<sup>263</sup> As Eleonora Broccardo, Oliver Hart, and Luigi Zingales have argued, “Divestment and boycotts cause the market value of a dirty firm to fall, leading some value-maximizing managers to switch to the clean technology.”<sup>264</sup> Asset managers, as large shareholders, can also exercise their “voice” in ways likely to induce managerial change. In the simplest example, a “Green Fund” can market its ability to put socially responsible proposals on a shareholder ballot as a feature of their fund, and investors may choose to invest in that fund for its ability to push a climate-friendly set of priorities on the corporations in which the fund invests.

Each of these mechanisms for exercising influence and control over companies has its limits. Exit and voice—though powerful—are imperfect. Threats of exit may be effective for minority shareholders only to the extent they attract public attention and can inflict reputational harm from a shareholder’s actions. As for voice, these strategies go only so far as the equity holder—the “speaker”—either holds a controlling stake in a firm or is able to persuade a sufficient number of other equity holders of the value of the proposal to behave in a more environmentally responsible manner. Indeed, not all shareholder proposals pass. In contrast, while banks could of course decline to lend money to a borrower in the first instance, once they have issued a loan, banks can only call the loan (demand full payment) on the basis of predetermined contractual terms.

The limits of bank debt are somewhat different. Perhaps most importantly, the stringency of debt covenants waxes and wanes with the economic environment. As recent years have shown in other contexts, strong economic environments tend to usher in a relaxation of covenants, as borrowers tend to have the economic upper hand when credit conditions are easy. As such, covenants designed and imposed in one time period can always be renegotiated, or ignored and unenforced, in a later period.<sup>265</sup>

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263. Eleonora Broccardo, Oliver Hart & Luigi Zingales, *Exit vs. Voice* 2 n.3 (Eur. Corp. Governance Inst., Finance Working Paper No. 694/2020, 2020), <https://ssrn.com/abstract=3671918> [<https://perma.cc/GQ38-9TWV>]. For the origin of the concepts of exit, voice, and loyalty, see Albert O. Hirschman, *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States* (1970); see also Triantis & Daniels, *supra* note 5, at 1079 (applying the concepts of exit and voice to lender actions to promote corporate governance).

264. Broccardo et al., *supra* note 263, at 3.

265. Indeed, the market has trended toward covenant-lite loans (also referred to as “covenant-lite”) in the oil and gas industry in recent years. See Steve H. Wilkinson, Hanna Zhang, Robert E. Schulz, Kenny K. Tang & Ramki Muthukrishnan, *Settling for Less: Covenant-Lite*

Moreover, companies denied bank credit—or that feel too squeezed by covenants—can always access financing in the capital markets or from non-bank lenders.<sup>266</sup> A similar point applies to restructuring or early repayment. In theory, this is to say that debtors can “escape” what they might perceive to be an overly controlling creditor.<sup>267</sup>

As a general matter, some would say that creditors and equity holders possess roughly equivalent power.<sup>268</sup> Where climate governance is concerned, it is difficult at present to conclude which of these corporate governance levers is more effective—exit and voice for portfolio managers or terms, covenants, and monitoring for the banks. The deciding factor for climate governance may well be the proximity or ongoing nature of the relationship, not the mechanism of exercising control. Compared to debt, equity offers a more direct nexus to managerial decisionmaking—because equity holders are the owners of an asset, they can directly impose or require strategic or operational changes. Because equity holders have certain rights of ownership, including the ability to elect directors to a firm’s board and to employ shareholder voting on substantive proposals, they can directly require strategic or operational changes. A creditor, meanwhile, is one step removed. While a bank can impose screens or covenant restrictions in a loan, it is not the ultimate owner of the company or the asset. In terms of changes to business operations on a more immediate basis, then, equity holders may be the higher-voltage driver of corporate climate governance.

Still, it is too soon to tell. In both equity and bank debt spaces, climate-driven initiatives are in their early days. Both are worthy of attention, as both banks and asset managers are likely to be key players in this space. Just as banks and funds often complement each other in the supply of credit,<sup>269</sup> they are likely to complement each other in addressing climate change. Synergies are already emerging. For instance, in the case where a syndicate of lenders agreed to incorporate ESG criteria into Logoplaste’s

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Loans Have Lower Recoveries, Higher Event and Pricing Risks, S&P Global (Oct. 13, 2020), <https://www.spglobal.com/ratings/en/research/articles/201013-settling-for-less-covenant-lite-loans-have-lower-recoveries-higher-event-and-pricing-risks-11687612> (on file with the *Columbia Law Review*).

266. See Michael Schwert, Does Borrowing from Banks Cost More Than Borrowing From the Market?, 75 J. Fin. 905, 941 (2020) (providing empirical evidence that bank loans are relatively more expensive for borrowers than bonds, i.e., debt raised in the capital markets).

267. Baird and Rasmussen do not, however, believe this to be too likely. In their words, “a business that encounters difficulty with a private creditor is likely to have trouble replacing it with another. Any new lender has to worry about private information held by the existing lender.” Baird & Rasmussen, *supra* note 517, at 1244.

268. Baird and Rasmussen would go so far as to say that “in the limit, these covenants can obliterate the difference between debt and equity” insofar as influence and control over the debtor are concerned. *Id.* at 1217.

269. Christina Parajon Skinner, Nonbank Credit, 9 Harv. Bus. L. Rev. 149, 150, 173 (2019) (describing how funds have stepped in as an alternate source of credit in situations where banks have necessarily pulled back).



financing package, the private equity firm, Carlyle, that provided financing to Logoplaste, agreed to the language as well.<sup>270</sup> The comparative advantages of debt and equity holders in adopting private climate governance must be understood and considered as parts of a panoply of responses to climate issues that are all important to deploy. This Essay fills some gaps specifically surrounding measures that banks have adopted toward climate governance, which are newly underway.

#### CONCLUSION

There is little doubt that questions of how banks can and should address climate change will occupy the agendas of board and shareholder meetings in the months and years to come.<sup>271</sup> To be sure, the role of banks in the transition to a low-carbon economy is highly complex. Banks have a social aspect to their purpose, as evidenced by history, economics, and the law. They must intermediate credit responsibly and in view of risk, while also minding the wealth and welfare of their shareholders. They also have strong private incentives to tackle head-on the economic challenges implicated by climate change. This unique mix of private incentives and public ethos has placed banks front and center in the transition to a low-carbon economy. This Essay draws attention to the foundations of this role for banks, and creates a framework for understanding how banks are fulfilling this role and where they might turn next.

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270. Flitman, *supra* note 197 (detailing how integration of ESG criteria into the language of the package came at the behest of the fund, not the company).

271. See, e.g., Cleary Gottlieb, *Selected Issues for Boards of Directors in 2021*, at 5 (Jan. 2021), <https://www.clearygottlieb.com/-/media/files/bod-2021/selected-issues-for-boards-of-directors-in-2021.pdf> [<https://perma.cc/HB4H-Z4QA>] (counseling that “boards should continue to prioritize ESG issues” because “[i]ncreased ESG focus shows no signs of slowing down in 2021”).

## APPENDIX

	Standard Chartered	Morgan Stanley	Wells Fargo	GS	Barclays	BAML	UBS	HSBC	Citi	JPM
1. carbon footprint	Yes <sup>337</sup>	Yes <sup>331</sup>	Yes <sup>323</sup>	Yes <sup>316</sup>	Yes <sup>308</sup>	Yes <sup>301</sup>	Yes <sup>294</sup>	Yes <sup>288</sup>	Yes <sup>281</sup>	Yes <sup>273</sup>
2. portfolio / screens	Yes <sup>338</sup>	Yes <sup>332</sup>	Yes <sup>324</sup>	Yes <sup>317</sup>	Yes <sup>309</sup>	Yes <sup>302</sup>	Yes <sup>295</sup>		Yes <sup>282</sup>	Yes <sup>274</sup>
3. funding clean tech	Yes <sup>339</sup>	Yes <sup>333</sup>	Yes <sup>325</sup>	Yes <sup>318</sup>	Yes <sup>310</sup>	Yes <sup>303</sup>	Yes <sup>296</sup>	Yes <sup>289</sup>	Yes <sup>283</sup>	Yes <sup>275</sup>
4. equity / advisory	Yes <sup>340</sup>	Yes <sup>334</sup>	Yes <sup>326</sup>	Yes <sup>319</sup>	Yes <sup>311</sup>	Yes <sup>304</sup>	Yes <sup>297</sup>	Yes <sup>290</sup>	Yes <sup>284</sup>	Yes <sup>276</sup>
5. philanthropy	Yes <sup>341</sup>		Yes <sup>327</sup>	Yes <sup>320</sup>	Yes <sup>312</sup>	Yes <sup>305</sup>	Yes <sup>298</sup>	Yes <sup>291</sup>	Yes <sup>285</sup>	Yes <sup>277</sup>
6. best practices / association	Yes <sup>342</sup>	Yes <sup>335</sup>	Yes <sup>328</sup>	Yes <sup>321</sup>	Yes <sup>313</sup>	Yes <sup>306</sup>	Yes <sup>299</sup>	Yes <sup>292</sup>	Yes <sup>286</sup>	Yes <sup>278</sup>
7. market mechanism	Yes <sup>343</sup>		Yes <sup>329</sup>		Yes <sup>314</sup>					Yes <sup>279</sup>
8. reporting & disclosure	Yes <sup>344</sup>	Yes <sup>336</sup>	Yes <sup>330</sup>	Yes <sup>322</sup>	Yes <sup>315</sup>	Yes <sup>307</sup>	Yes <sup>300</sup>	Yes <sup>293</sup>	Yes <sup>287</sup>	Yes <sup>280</sup>

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274. JPMorgan Chase & Co., Environmental and Social Policy Framework 4–5 (2020), <https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/documents/environmental-and-social-policy-framework.pdf> [https://perma.cc/RCT5-NWTM] [hereinafter JPMorgan Chase & Co., Environmental Policy Framework].
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290. *Id.* at 46.
291. *Id.* at 50.
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