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Technocratic Pragmatism, Bureaucratic Expertise, and the Federal Reserve

ABSTRACT. The Federal Reserve (Fed) regularly faces novel challenges to its broad statutory mandates. Often, these challenges—from financial crises to pandemics to climate change—raise a critical question. When should the Fed act beyond the boundaries of its core institutional identity and expertise? On the one hand, some voices demand the Fed “stay in its own lane,” avoiding experimentation so that it may preserve its perceived legitimacy to carry out core historical functions. On the other, hewing too closely to precedent and existing expertise risks institutional failure of a different sort.

To navigate that tension, this Feature sketches an ethos of technocratic pragmatism—one that permits the Fed to develop the expertise necessary to address emergent problems as long as it remains constrained by norms designed to preserve its long-run legitimacy. We illustrate the ethos by examining three cases where the Fed has confronted, or is confronting, challenges that test the boundaries of its expertise: engagement with cyber risk, emergency lending before and during the COVID-19 pandemic, and nascent efforts to understand the intersection of central banking and global climate change. We also engage with cases where the Fed has transgressed legitimacy-preserving limits by intervening in policy disputes beyond the range of its statutory concerns. Taken together, these cases illustrate how the Fed must walk a fine line between valuable experimentation and the usurpation of politics.

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INTRODUCTION

“The ghost of Andrew Jackson stalked before my face . . . and haunted my couch for nights,” Carter Glass, one of the authors of the Federal Reserve Act, wrote in his memoir about the fear of creating a monster that would evolve beyond democratic control.¹ A version of that fear haunts legislators, bureaucrats, and scholars today, driven in no small part by the Federal Reserve (Fed)’s uneasy turns as crisis-fighter-in-chief. Over its century of existence, the Fed has answered call after call to take “unprecedented”² actions in response to everything from international crises in Mexico, Russia, and East Asia in the 1990s to the 2008 crisis and today’s pandemic-driven economic collapse.

With every new crisis come two calls in opposing directions. On the one hand, some who celebrate the Fed’s successes advocate the expansion of its powers address to new problems, such as wealth inequality, structural racism, or climate change.³ On the other, some who critique its missteps call on the Fed to retreat from crisis-fighting experiments to make way for more accountable and appropriate entities to tackle what they view as resolutely “political” problems well beyond the Fed’s core capabilities.⁴

This Feature seeks to navigate the tension between these opposing viewpoints in favor of pragmatic—and accountable—experimentalism. A pragmatic Fed should not fear acting at the outer edge of its statutory authority and should not blanch at recognizing an absence of—and thus a need for—relevant expertise. Instead, it should experiment energetically in the name of expertise development. At the same time, an accountable Fed must respect bounds imposed by key, legitimating limitations. Further, it must be mindful of the overwhelming effects its actions can have on markets, firms, and even the political system itself.

The ethos we sketch rests on two arguments grounded in historical experience. First, we argue that a pragmatic and experimentalist Fed is best suited to develop the expertise necessary to address complex, emergent problems that affect the Fed’s broad statutory missions. Failures to embrace statutory authority

1. CARTER GLASS, *AN ADVENTURE IN CONSTRUCTIVE FINANCE* 111 (1927).

2. See, e.g., *Monetary Policy Report*, BOARD GOVERNORS FED. RES. SYS. (June 12, 2020), https://www.federalreserve.gov/monetarypolicy/files/20200612_mprfullreport.pdf [<https://perma.cc/6DTZ-93C4>].

3. See, e.g., Graham S. Steele, *Confronting the ‘Climate Lehman Moment’: The Case for Macroprudential Climate Regulation*, 30 CORNELL J.L. & PUB. POL’Y 109 (2020); Hannah Lang, *Democrats’ Bill Would Require Fed to Focus on Income, Racial Inequality*, AM. BANKER, (Aug. 5, 2020, 12:59 PM EDT), <https://www.americanbanker.com/news/democrats-bill-would-require-fed-to-focus-on-income-racial-inequality> [<https://perma.cc/JX87-YTKQ>].

4. See, e.g., George Selgin, *The Courage to Refuse*, ALT-M (May 1, 2020), <https://www.alt-m.org/2020/05/01/friday-flashback-the-courage-to-refuse-2> [<https://perma.cc/3NK7-X8B3>].

and develop new expertise to address such problems will undermine the Fed's ability to deliver on the statutory mandates it has already received. Second, we argue that the Fed's pragmatic experimentation should be constrained by bounds designed to preserve its long-run legitimacy.

We call this ethos "technocratic pragmatism." The term nods at the Fed's democratic deficit: the Fed is not meant to be a purely political deliberative body, but must rely instead on the kind of expertise that contributes to the legitimacy of technocracy. But the term also recognizes that if the Fed is to live up to Congress's statutorily inscribed ambitions, the particular components of its technocratic ambit can and must change over time.

To be legitimate, however, this technocratic form of pragmatism must be constrained by vital norms of legality, accountability, and noncoercion. Legally, the Fed's technocratic pragmatism must serve the statutory delegation granted by Congress and embodied in the Federal Reserve Act, but construed broadly and with purpose. Norms of statutory interpretation — albeit not narrowly textual ones — should police that boundary, even and especially in the absence of judicial review. The emphasis against narrow textualism but in favor of broad legality is crucial. While the Fed can be broad in its legal interpretations, it cannot — contrary to other theories of executive action in a crisis⁵ — justify lawlessness. Law matters to long-run legitimacy, especially given the absence of judicial review for the most important of the Fed's actions.

Politically, as the Fed learns about new challenges that implicate its statutory mandates, it must open itself to more searching congressional oversight. Traditions of secrecy and opacity, deep in central banking's DNA, must yield to norms of transparency in periods of experimentation. This is true despite the fact that congressional oversight may, at times, be little more than a partisan circus.⁶ The generation of information, funneled through constitutional government, nevertheless imposes an important check on the Fed's innate tendency toward secrecy, especially when it is moving into uncharted waters.

And finally, the legitimacy of technocratic pragmatism depends on a norm of noncoercion: agency experimentation beyond core expertise should be tempered by due consideration of the coerciveness involved. Formulated as a rule of

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5. Eric A. Posner & Adrian Vermeule, *Crisis Governance in the Administrative State: 9/11 and the Financial Meltdown of 2008*, 76 U. CHI. L. REV. 1613, 1640–42 (2009) [hereinafter Posner & Vermeule, *Crisis Governance in the Administrative State*] (discussing the "Schmittian" model of the administrative state in crisis). See generally ERIC A. POSNER & ADRIAN VERMEULE, *THE EXECUTIVE UNBOUND: AFTER THE MADISONIAN REPUBLIC* (2011) (arguing that, in crises, executive experimentation beyond the boundary of legality is inevitable).
 6. See generally Daryl J. Levinson & Richard H. Pildes, *Separation of Parties, Not Powers*, 119 HARV. L. REV. 2312 (2006) (discussing the influence of political parties on the separation of powers and the executive-legislative relationship).

thumb, Fed experimentation beyond its (current) core expertise should be inversely correlated with the level of coercion it requires. Thus, within broadly construed legal boundaries, a technocratic-pragmatic Fed uses experimentation at its fullest when the actions taken in the experiment are least coercive.

Technocratic pragmatism thus optimizes two important goals that are often in tension: (1) the need for the Fed to develop expertise to attack complex problems adjacent to its core statutory responsibilities, and (2) the requirement that democratic governance select the values and problems that deserve the Fed's scarce resources to combat. A Fed that arrogates the power of the democratic process to attack just any complex problem its central bankers choose would present a profound risk to constitutional government. Technocratic pragmatism embraces no such usurpation. Instead, the ethos encourages experimentation but requires significant guardrails to channel the development of expertise, including substantial congressional oversight, adherence to broad conceptions of statutory mandates, and efforts to focus experimentation away from the agency's coercive powers. In this way, technocratic pragmatism stands against a common view among scholars,⁷ courts,⁸ political leaders,⁹ and Fed bureaucrats themselves that the Fed must "stay in [its] lane,"¹⁰ not by ignoring the concerns that animate it, but by articulating sources of guidance that constrain and channel the evolution of the idea of the Fed's rightful "lane" in the first place.

Technocratic pragmatism also sheds new light not only on the *facts* of central-bank expertise – a topic well studied in existing literature – but on the *process* of how that expertise is acquired over time. Where most accounts of endogenous expertise production focus on traditional staff-led information development, interagency process, Federal Advisory Committee Act committees, and other core

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7. E.g., PAUL TUCKER, *UNELECTED POWER: THE QUEST FOR LEGITIMACY IN CENTRAL BANKING AND THE REGULATORY STATE* (2018) (arguing that central banks require a much more narrowly tailored ambit to justify their power).
 8. E.g., *Seila Law LLC v. CFPB*, 140 S. Ct. 2183, 2192 (2020) (holding that the Consumer Financial Protection Bureau's institutional design was unconstitutional in part because of the "significant executive power" that it wields).
 9. E.g., John Kennedy, Opinion, *American Taxpayers Deserve an Audit of the Federal Reserve*, HILL (Dec. 18, 2017, 10:15 AM EST), <https://thehill.com/blogs/congress-blog/economy-budget/365385-american-taxpayers-deserve-an-audit-of-the-federal-reserve> [<https://perma.cc/8SLL-2ETZ>].
 10. *Powell Defends Aggressive Fed Actions*, BOND BUYER (May 29, 2020, 12:42 PM EDT), <https://www.bondbuyer.com/articles/we-crossed-a-lot-of-red-lines-that-had-not-been-crossed-before-said-federal-reserve-chairman-jerome-powell> [<https://perma.cc/4PQH-5VBK>] (quoting Chair Jerome Powell's comments on the Federal Reserve's (Fed) actions to contain the effects of the COVID-19 crisis). For a discussion addressing the critiques of technocratic pragmatism, see *infra* Sections I.A-C.

administrative processes,¹¹ we argue that the most important methods of endogenous expertise production at the Fed are those that sit at the “boundary” of the agency’s legal authority.¹² In particular, we foreground nontraditional modes of Fed experimentation to support policy decisions—the creation of academic research departments, experimentation through market participation and internal operations, embedded supervision, trial-and-error market interventions in crisis, and creative structures of congressional oversight.

A note on scope: this Feature seeks to develop a framework to guide Fed expertise-development. We rely on thick institutional description, legal analysis, and history to describe how technocratic pragmatism within the Fed has worked in the past and how it might work in the future. We hope this conception of technocratic pragmatism will find interested interlocutors focused on other areas of the administrative state, where similar institutional arrangements exist. But the core scholarly effort is to develop a framework to guide Fed experimentation in the service of its broad mandates.

This Feature proceeds in two parts. Part I details the core tension that technocratic pragmatism seeks to resolve, between the acute need for novel Fed expertise and the risk of illegitimacy in an age of crisis. It then introduces the ethos and describes how the successful development of technocratic pragmatism can enhance the Fed’s functional legitimacy. Part II then elaborates on the value of technocratic pragmatism by examining three cases where the Fed has confronted, or is confronting, challenges that test the boundaries of its expertise: engagement with cyber risk, emergency lending before and after COVID-19, and the nascent efforts to understand the intersection of central banking and global climate change. It also applies where the Fed has transgressed the limits of technocratic pragmatism by venturing into policy disputes beyond the range of its statutory concerns, such as participation in debates about social-security privatization during the Bush Administration and ongoing efforts by a Federal Reserve Bank president to amend the Minnesota State Constitution to promote a

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11. This work builds on concepts developed by Matthew Stephenson. See generally Matthew C. Stephenson, *Bureaucratic Decision Costs and Endogenous Agency Expertise*, 23 J.L. ECON. & ORG. 469 (2007) [hereinafter Stephenson, *Bureaucratic Decision Costs*] (analyzing the relationship that increasing or decreasing costs of regulation has with agency expertise and the corresponding appropriate role that courts or legislatures should take with respect to “enactment costs”); Matthew C. Stephenson, *Information Acquisition and Institutional Design*, 124 HARV. L. REV. 1422, 1423, 1426 (2011) [hereinafter Stephenson, *Information Acquisition*] (discussing the role that “legal-institutional design choices” have on the effectiveness of information gathering for government agencies).
 12. Cf. Anne Joseph O’Connell, *Bureaucracy at the Boundary*, 162 U. PA. L. REV. 841, 866–67 (2014) (characterizing administrative entities that engage in work far from typical rulemaking and enforcement functions as “boundary” organizations).

particular conception of education policy. Taken together, these case studies illustrate the ethos of technocratic pragmatism in action.

I. TECHNOCRATIC PRAGMATISM IN THEORY

Concerns about central banks' drifting policy portfolios are as old as central banks themselves. The growing power of banks was a key concern for Jeffersonians at the Founding.¹³ In the debates about the Second Bank of the United States a generation later, Andrew Jackson focused on the affront that the Bank represented to the constitutional and political order of the young republic, but also invoked something akin to institutional drift to argue against the bank's congressional rechartering.¹⁴ Jackson loomed large over the debates at the founding of the Federal Reserve System in 1913 too, as noted in the quotation that leads the Introduction to this Feature.¹⁵ As the rest of the nineteenth century added more bureaucratic complexity to the reach of the American state and the early twentieth century accelerated it, concerns about policy drift became ubiquitous.¹⁶

These critiques are not merely associated with founding moments, but also with all periods of institutional change and experimentation. Sometimes, they even come from voices otherwise sympathetic to the aims of central banks. In April 2008, for instance, former Chair Paul Volcker broke his silence to criticize the "sweeping powers" the Fed exercised in preventing the failure of investment bank Bear Stearns — powers that were "neither natural nor comfortable for a central bank."¹⁷ More recently, in debates about the proper role of the Fed in the

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13. JEFF BROADWATER, *JEFFERSON, MADISON, AND THE MAKING OF THE CONSTITUTION* 265-70 (2019).
 14. DANIEL WALKER HOWE, *WHAT HATH GOD WROUGHT: THE TRANSFORMATION OF AMERICA 1815-1848*, at 379-85 (2007).
 15. See *supra* text accompanying note 1.
 16. The Hoover Commissions under the Truman and Eisenhower Administrations were thorough attempts to improve the structure and function of the administrative state. For a copy of the reports of the first Commission, see U.S. COMM'N ON ORG. OF THE EXEC. BRANCH OF THE GOV'T, *THE HOOVER COMMISSION REPORT* (McGraw-Hill Book Co., Inc. 1949). Among other things, the Commissions were concerned with agencies having too much independence from the President and department heads: "Statutory powers often have been vested in subordinate officers in such a way as to deny authority to the President or a department head." *Id.* at 5.
 17. Paul A. Volcker, Former Chair, Bd. of Governors of the Fed. Reserve Sys., Address at the 395th Meeting of the Economic Club of New York 5 (Apr. 8, 2008), <https://www.econ-clubny.org/documents/10184/109144/2008VolckerTranscript.pdf> [<https://perma.cc/5UND-XDJ8>].

response to the COVID-19 crisis, scholars,¹⁸ journalists,¹⁹ and policymakers²⁰ have raised concerns about institutional drift and policy errors caused by experimentation.

When policymakers and scholars extol the virtues of a narrow Fed — or when they condemn a central bank unmoored — they presuppose, implicitly or explicitly, an institutional core that justifies that narrow focus.²¹ This institutional core is usually built around statutory mandates but also refers to the technocratic expertise that such mandates engender. When the Fed marshals its core expertise to achieve results (or address problems) clearly within the bounds of its congressional delegation, we may say that it is handling “essential” Fed business.

In this Feature, we do not dispute the existence of a core to the Fed’s identity as an agency. For conventional times and predictable problems, this core identity, crafted by statute, and the expertise that the Fed has developed to answer that mandate will describe the vast majority of what the Fed does. The ethos of technocratic pragmatism focuses instead on the questions of whether and how the Fed should develop new expertise to address new challenges — big, complex problems — that perhaps at present are not at the core of agency expertise but that loom menacingly on the horizon.

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18. See, e.g., Michael D. Bordo, Opinion, *The Fed’s Response to COVID-19 Through the Lens of History*, HILL (July 12, 2020, 7:00 AM EDT), <https://thehill.com/opinion/finance/506925-the-feds-response-to-covid-19-through-the-lens-of-history> [https://perma.cc/29QC-ESHY] (examining the Fed’s COVID-19 response and its likelihood of economic and political success in light of past crises); Lev Menand, *Unappropriated Dollars: The Fed’s Ad Hoc Lending Facilities and the Rules That Govern Them* 1 (European Corp. Governance Inst., Law Working Paper No. 518, 2020) (arguing that because “thirteen of the Fed’s fourteen [COVID-19 ad hoc lending] facilities as currently constituted are in tension with either the Federal Reserve Act, the Gold Reserve Act, or both,” congressional action to give the Fed new authority is necessary and beneficial).
 19. See, e.g., Nick Timiraos & Jon Hilsenrath, *The Federal Reserve Is Changing What It Means to Be a Central Bank*, WALL ST. J. (Apr. 27, 2020, 11:06 AM ET), <https://www.wsj.com/articles/fate-and-history-the-fed-tosses-the-rules-to-fight-coronavirus-downturn-11587999986> [https://perma.cc/Z9FP-GXF9] (summarizing legal and political challenges the Fed has faced in the rollout of its COVID-19 response).
 20. See, e.g., THE SECOND REPORT OF THE CONGRESSIONAL OVERSIGHT COMMISSION, CONG. OVERSIGHT COMM’N, 28, 41 (June 18, 2020), [https://www.toomey.senate.gov/files/documents/Congressional%20Oversight%20Commission%20Report%20\(June%2018,%202020\).pdf](https://www.toomey.senate.gov/files/documents/Congressional%20Oversight%20Commission%20Report%20(June%2018,%202020).pdf) [https://perma.cc/ZRC5-K2WW] (pressing the Treasury and the Fed to identify legal constraints on different lending facilities offered during the COVID-19 crisis).
 21. Paul Tucker, for instance, calls for central-bank agencies to avoid “venturing into major choices on the distribution of wealth or society’s values” and only to aim at “well-specified goals” through “clear” preexisting procedures. TUCKER, *supra* note 7, at 556. For Tucker, this mix of constraints would forestall any metastasis of the Fed’s development as economic crisis-manager-in-chief. See *id.* at 556–57.

A. *Complex Problems and the Necessity of New Expertise*

Complex problems are ubiquitous and, by their very nature, defy ready-made expertise. These are existential problems that threaten global security, health, and well-being. Combatting global climate change is the quintessential example of these complex problems, but global pandemics, global financial crises, refugee crises, endemic and systemic racism, cybersecurity threats, and many others would also qualify.²² These require creative solutions that necessitate significant resources. While the private and civil sectors have important roles to play, only government can muster the resources and manage the coordination necessary to address these problems.

Scholars diagnosing one class of these complex problems – “super wicked” problems – identify several conceptual aspects that render them unusually unsuited for prompt, far-sighted governmental response. For these, “time is running out; those who cause the problem also seek to provide a solution; the central authority needed to address them is weak or non-existent; and irrational discounting occurs that pushes responses into the future.”²³

There is another aspect of these kinds of problems peculiar to the structure of government that must confront them: the expertise required to solve them may not yet exist. Indeed, the very nature of complex problems is that previous, off-the-shelf solutions are insufficient.

1. *Four Sources of Expertise*

How should the Fed go about developing the “ascertainable body of knowledge”²⁴ needed to address such problems? One of the central themes of the past decade of administrative-law scholarship is that expertise does not come preinstalled in agencies when created by Congress.²⁵ Instead, a wide array of statutory, judicial, and institutional features collectively determine the contours of an agency’s body of expertise. Indeed, we might distinguish between four

22. See Kelly Levin, Benjamin Cashore, Steven Bernstein & Graeme Auld, *Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change*, 45 POL’Y SCI. 123, 126–28 (2012) (discussing “super wicked” problems in the context of global climate change); Horst W.J. Rittel & Melvin M. Webber, *Dilemmas in a General Theory of Planning*, 4 POL’Y SCI. 155, 160–67 (1973) (describing “wicked problems”). Richard Lazarus applied this concept to law in Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153 (2009), which examines the unique challenges endemic to the historical failure of lasting climate-change legislation.

23. Levin et al., *supra* note 22, at 124.

24. FELIX FRANKFURTER, *THE PUBLIC AND ITS GOVERNMENT* 145 (1930).

25. See, e.g., Stephenson, *Information Acquisition*, *supra* note 11, at 1425–26.

general sources: input from the public, internal knowledge production, dialogue within the administrative state, and experiments in the field.

First, agencies learn about the potential range and impact of policy choices by receiving input from the public. This mode of expertise acquisition is perhaps the most prominent in the minds of lawyers, given its centrality to the judicial review of agency action. When an agency seeks to craft a rule that fits well with a given policy goal, it often benefits from seeking public comment (and usually must do so, as a matter of law).²⁶ Though the public-comment channel for developing knowledge about a given policy problem is prone to a range of breakdowns—of information overload,²⁷ of the absence of broad-based public participation,²⁸ and of missed opportunities for deliberation²⁹—it remains a decent enough way for agencies to receive knowledge and opinions from outside their own doors. This is especially true when agencies develop “epistemic communities” of the motivated public to participate in knowledge generation from the outside.³⁰ Similar, if less formal, means of receiving input from a given policy domain’s interested parties—such as *ex parte* communication, public convenings, and direct requests for colloquies with agency staff—all do the work of gathering knowledge and opinion towards the formation of expertise.³¹

A second form of expertise development that holds a prominent place in debates over judicial review arises from internal processes of knowledge production. In this mode, agencies act like applied research divisions of the regulatory state. Scientists conduct experiments,³² economists run regressions,³³ and

26. See 5 U.S.C. § 553 (2018).

27. Wendy E. Wagner, *Administrative Law, Filter Failure, and Information Capture*, 59 DUKE L.J. 1321, 1329 (2010) (“Information capture involves either the inadvertent or the strategic use of costly communications—well beyond what is necessary to convey the message—to gain control over regulatory outcomes.”).

28. See Note, *Deweyan Democracy and the Administrative State*, 125 HARV. L. REV. 580, 593 (2011).

29. See Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 5 (1997).

30. Peter M. Haas, *Epistemic Communities and International Policy Coordination*, 46 INT’L ORG. 1, 2-3 (1992) (“An epistemic community is a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area.”).

31. See, e.g., Lisa Schultz Bressman & Robert B. Thompson, *The Future of Agency Independence*, 63 VAND. L. REV. 599, 649 (2010) (noting the role of such contacts in rulemaking).

32. See, e.g., *History of EPA Research*, ENVTL. PROTECTION AGENCY, <https://www.epa.gov/research/history-epa-research> [<https://perma.cc/5933-9UKH>].

33. See, e.g., *Meet the Economists*, BOARD GOVERNORS FED. RES. SYS., <https://www.federalreserve.gov/econres/theeconomists.htm> [<https://perma.cc/9TWN-22MM>].

engineers devise workplace-safety protocols.³⁴ The effective and comprehensive use of internal knowledge-production and policy-evaluation processes is core to the legitimation of many agency actions in the eyes of reviewing courts. Indeed, one of the key functions of judicial review of agency action is to “prod[] agencies to . . . buttress[] their internal expertise and capacity” to make reasoned decisions in complex areas of policy.³⁵ It takes expertise, after all, to develop a record that will hold up to scrutiny.³⁶

For instance, as Catherine Sharkey has documented, elevated scrutiny of the Securities and Exchange Commission (SEC) in the wake of *Business Roundtable v. SEC* has had an investment-inducing effect³⁷: the Commission has doubled its headcount of staff economists and created an entire new division to conduct cost-benefit calculations.³⁸ Whether producing better cost-benefit analyses is a useful or distracting form of SEC expertise,³⁹ it nevertheless exemplifies importance of internal expertise production.⁴⁰

A third mode of acquisition comes from dialogue with partners and rivals across the executive branch. Joint rulemakings marry expertise in one agency with authority held by another,⁴¹ consultation procedures enable or require agencies to incorporate effects on other regulatory programs into their decisions,⁴² and agreements to coordinate policy reviews enable collaborative oversight and alignment of policy initiatives.⁴³ Through mechanisms like these, the agencies themselves act as sources of expertise development for one another.

34. See Directorate of Standards and Guidance—Directory of Offices & Staff, OCCUPATIONAL SAFETY & HEALTH ADMIN., <https://www.osha.gov/contactus/byoffice/dsg> [<https://perma.cc/RGE6-VGZS>].

35. Catherine M. Sharkey, State Farm “With Teeth”: Heightened Judicial Review in the Absence of Executive Oversight, 89 N.Y.U. L. REV. 1589, 1592 (2014); see also *id.* at 1605 (“[P]rompting agencies to develop a robust record is desirable to the extent that it is expertise forcing and thus leads to better regulatory outcomes . . .”).

36. *Id.* at 1632–33.

37. 647 F.3d 1144 (D.C. Cir. 2011).

38. Sharkey, *supra* note 35, at 1632–33.

39. Compare *id.* at 1622–34 (calling for a continuation of *Business Roundtable*-like heightened review), with John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882, 886–87 (2015) (criticizing the project of building on *Business Roundtable*).

40. See Stephenson, *Information Acquisition*, *supra* note 11, at 1429–30.

41. Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. 1131, 1184 (2012); Daphna Renan, *Pooling Powers*, 115 COLUM. L. REV. 211, 227 (2015).

42. See Freeman & Rossi, *supra* note 41, at 1157.

43. See *id.* at 1161.

Finally, and most centrally to our examination of pragmatism at the Fed, agencies engage in expertise development from hard-won experience. By this, we mean the process of enacting policy followed by feedback, review, and incorporation of lessons into future policymaking processes. Experience-based learning might take place via serial adjudication as a policymaking form, or it might take place over time in the wake of a major rulemaking whose effects only appear gradually.⁴⁴ Alternatively, it may be explicitly “experimentalist,” in the sense meant by Charles Sabel and William Simon, where a central hub coordinates policy attempts by federated units possessing some amount of local discretion.⁴⁵ Across these modes of expertise production, agencies can build a mix of fact-based expertise—details about how a policy achieved or failed to achieve intended effects in the real world—and practice-based expertise—the kind of know-how that enables agencies to be effective implementors of policy programs.

2. *Expertise and Experimentation*

Through these methods, the Fed’s aim is simple: developing expertise to make sound policy relevant to its statutory responsibilities. Much of this expertise pertains to industry operations—“regulatory problems, potential solutions, and expected consequences” that arise within institutions and markets that are not susceptible to study by pure scientific method.⁴⁶ Consider the Fed’s core statutory duty to ensure that banks within its purview are “[s]afe and [s]ound.”⁴⁷ To carry out this responsibility, the Fed obviously must understand how banks work; this means it must stay current with developing trends in financial markets, from simple modifications of preexisting modes of business to new fields of finance altogether.⁴⁸ For the task of monetary-policy implementation, the Fed must draw on—and therefore continually develop—a related body of expertise

44. See M. Elizabeth Magill, *Agency Choice of Policymaking Form*, 71 U. CHI. L. REV. 1383, 1397 (2004).

45. Charles F. Sabel & William H. Simon, *Minimalism and Experimentalism in the Administrative State*, 100 GEO. L.J. 53, 79 (2011).

46. Cary Coglianese, Richard Zeckhauser & Edward Parson, *Seeking Truth for Power: Informational Strategy and Regulatory Policymaking*, 89 MINN. L. REV. 277, 285 (2004).

47. See 12 U.S.C. § 1818(b)(1) (2018) (giving federal banking agencies the authority to issue cease and desist orders to insured depository institutions that engage in “unsafe or unsound practice[s]”).

48. See, e.g., *The U.S. Path to Faster Payments: Final Report Part One*, FASTER PAYMENTS TASK FORCE 3 (Jan. 2017), <https://fasterpaymentstaskforce.org/wp-content/uploads/faster-payments-final-report-part1.pdf> [<https://perma.cc/96M5-6NPU>] (summarizing the results of a multiyear effort to understand new payment technologies, and highlighting the need for fast payment technologies in response to market developments and international changes).

on the abstract theories of interest-rate transmission, inflation, employment slack, and various other ideas that are constantly being deployed and challenged in the pursuit of what all agree is an essential Fed business.⁴⁹

Administrative priorities change, and not only because of political forces pushing for those changes.⁵⁰ Even more challenging are situations where entirely novel problems place an agency on unsound footing. They might struggle to write a rule that successfully targets a new form of mischief, or even to understand how the mischief operates in the real world.

Developing expertise at the center of agency authority is retrospective, a battle for small improvements on existing competence. It thus mostly avoids controversy. But complex problems, by their nature, are different in two ways. First, they likely have little to do with past experience. Second, they are likely to be highly controversial because their outcomes are so uncertain. Developing expertise at the limits of agency authority thus creates an acute need for an important kind of value-laden experimentation, an instance of the science of “muddling through,” in Charles Lindblom’s classic articulation.⁵¹

A technocratic-pragmatist Fed often has been – and we argue should be – a muddler of a specific sort, one that prizes what Sabel and Simon call “learning and adaptation,” consistent with statutory mandates.⁵² Such learning and adaptation can be administratively messy.⁵³ Instead of regularity in service of clearly

49. In late 2019, before the COVID-19 crisis, the Fed began what it called “a review of the monetary policy strategy, tools, and communication practices we use to pursue our congressionally mandated goals of maximum employment and price stability,” a public-facing inquiry into the broad goals and means of monetary policy. *Fed Listens: Perspectives from the Public*, BOARD GOVERNORS FED. RES. SYS., at v (June 2020), <https://www.federalreserve.gov/publications/files/fedlistens-report-20200612.pdf> [<https://perma.cc/5XXM-922L>]. The Fed described this Monetary Policy Review as something it was now performing “for the first time” in its history, but the subjects tackled during its *Fed Listens* events were not entirely new. Instead, they reflected a development of the Fed’s preexisting expertise, including “effects of inflation on low- and moderate-income households, effects of targeting higher inflation,” “the importance of low unemployment versus stable prices,” “the transmission of monetary policy,” and the “costs and benefits of running a tight labor market.” *Id.* at v, 3-5.

50. For a signal account of political control over administrative priorities, see generally Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2253-81 (2001), which surveys congressional, intra-agency, interest-group, judicial, and finally presidential means by which agencies’ priorities are affected and influenced.

51. Charles E. Lindblom, *The Science of “Muddling Through,”* 19 PUB. ADMIN. REV. 79, 88 (1959). Interestingly, in Lindblom’s classic account, fighting inflation was the problem that required the “muddling.” *Id.* at 79-80.

52. *Cf.* Sabel & Simon, *supra* note 45, at 55 (extolling structures that support “learning and adaptation” within the administrative state).

53. *Cf. id.* at 58 (describing how experimentalism requires divergence from other leading theories of administrative governance on such matters).

established midlevel policy objectives, an experimentalist Fed would embrace midlevel goal evolution. Such an approach would, like various forms of experimentalist governance, engage in “provisional goal-setting,” afford greater discretion to agency subunits to develop policy responses in the first instance, and only then follow an initial round of attempts with “a recursive process of . . . revision based on learning from the comparison of alternative approaches.”⁵⁴ Over time, the Fed would succeed if it incorporates perspectives on goals and tactics from a range of agency subunits into an agency-wide strategy for tackling a problem under conditions of strategic uncertainty.⁵⁵ On some matters, this might involve experimentation at the level of the individual Reserve Bank; on others, it might involve time-limited experimentation at the Board level. In all cases, though, it would embrace flexibility in service of being responsive to the complex problems that most challenge the core missions of the agency.

That development, however, must immediately run into important limits aimed at protecting democratic legitimacy. When central bankers take upon themselves the authority to identify which looming problems, on which time horizons, are worthy of their formidable resources, they risk undermining their value as bureaucrats and usurping the role of political representatives.

This fear of unmoored bureaucrats can be overstated. The instruments of expertise development are crucial to a well-functioning administrative state, and not simply at the margin. These tools help government match the challenges that it must face, enabling it to steer industrial dynamism beneficially.⁵⁶

But the concern about bureaucratic legitimacy is real and runs alongside a deeper question of where, exactly, expertise fits into a legitimating account of the administrative state. Leading accounts today focus on the role of reason-giving in justifying agency action to the courts and the political branches.⁵⁷ A complementary conception of administrative expertise, however, focuses on its role in developing and maintaining state capacity. This conception—which was ascendant during the New Deal—sees regulation “as the application of expert

54. Charles F. Sabel & Jonathan Zeitlin, *Experimentalist Governance*, in *THE OXFORD HANDBOOK OF GOVERNANCE* 169 (David Levi-Faur ed., 2012).

55. *Id.* at 175.

56. See, e.g., David A. Wishnick, *Reengineering Financial Market Infrastructure*, 105 MINN. L. REV. (forthcoming 2021) (describing the capacity of financial regulators to catalyze innovation in market infrastructure).

57. See, e.g., Jodi L. Short, *The Political Turn in American Administrative Law: Power, Rationality, and Reasons*, 61 DUKE L.J. 1811, 1862 (2012) (discussing the effects that judicial “hard-look review” has had on agency structure, staffing, and culture, “driven by the prospect of either reversal on judicial review or discipline by the executive”); Wendy E. Wagner, *A Place for Agency Expertise: Reconciling Agency Expertise with Presidential Power*, 115 COLUM. L. REV. 2019, 2045-57 (2015) (examining the struggle between agency rulemaking and expertise and Office of Information Regulatory Affairs (OIRA) review).

knowledge to pressing modern problems in service of the public interest.”⁵⁸ Even if the “pretense of the New Dealer’s insulated, neutral expert”⁵⁹ has been abandoned over decades, the core ambition—in workaday bureaucracy in the midst of crisis—is for bureaucrats to do technical work and politicians to be responsible for selecting the values that technical work supports.

Technocratic pragmatism aims for a truce between these competing demands. It honors the demands of legality, accountability, and noncoercion while also creating space for experimentation, thereby providing the Fed with flexible, effective tools to accomplish the work Congress has reasonably given it to accomplish. This is true not only in the development of expertise in the face of changing environments for essential agency business, like monetary policy or bank regulation. Technocratic pragmatism also permits the Fed to anticipate, mitigate, and even resolve complex problems that pose existential threats. Such experimentation rests not on the ability of central bankers to evade “political” topics, as Former Deputy Governor of the Bank of England Paul Tucker contends⁶⁰ but rather on their ability to help solve the broad set of problems that plausibly implicate the bailiwick that Congress has already given to them. But to accomplish these tasks, technocratic pragmatism requires three guardrails: legality, accountability, and noncoercion.

B. Pragmatism and Legality

A key motivator for technocratic pragmatism is our view that the development of expertise outside of core competence is in fact essential to carrying out the mandates and achieving the goals of the broad delegations in the Federal Reserve Act. Indeed, when complex problems affect Fed mandates, specified by statute, there is no other way to live up to those mandates without trying new things and building new expertise.

But this does not mean that Fed bureaucrats are free to set the agenda and choose the values that they view as most deserving of government resources. The first of three major guardrails against experimentation run amok is law: a technocratic-pragmatist Fed should not disregard clear legal prohibitions written in the Federal Reserve Act.

This assertion raises a series of questions: What does the law permit and prohibit? Who decides on those legal permissions and prohibitions? And is it appropriate for the Fed to engage in activity that statutory framers did not contemplate, even if these framers did not directly proscribe that activity?

58. Short, *supra* note 57, at 1881.

59. Wagner, *supra* note 57, at 2026.

60. See TUCKER, *supra* note 7, at 549 (“[P]olitical power belongs with elected politicians.”).

Most debates about the meaning of statutes focus on the practice of statutory interpretation as conducted via judicial review. The primary methodological difference for judges (and those who argue about statutory interpretation in courts' shadows) concerns the embrace of "textualism"⁶¹ versus "purposivism"⁶² or sometimes "pragmatism." The first is, as the Supreme Court's recent pronouncement of the methodology stated, the interpretation of "a statute in accord with the ordinary public meaning of its terms at the time of its enactment."⁶³ The second requires judges to "[i]nterpret the words of the statute . . . so as to carry out the purpose as best it can, making sure, however, that it does not give the words . . . a meaning they will not bear."⁶⁴

A technocratic-pragmatic Fed need not entangle with this long-standing debate. In part, this is because it is not a particularly useful one, since most judges practice "methodological pluralism."⁶⁵ But the second reason is more fundamental: the kinds of limited experimentation that the Fed must embrace will virtually never become subject to judicial review. The act of statutory interpretation, then, must be invoked to ensure "legality," not merely textual fidelity. Legality, as we mean the term, requires the Fed to find both justification for its actions and limitations for those actions. How it does so will depend on the specific kinds of actions or limitations.

The need to define boundaries of legality, then, encourages both limitations and experimentation, together. It also asks of the Fed a legitimating interaction with law that some central-bank critics would prefer be exercised only by legislatures. For example, some view central-bank discretion as inherently suspect and argue that any central-bank power should be tightly circumscribed by

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61. The canon of textualist interpretation is ever expanding. See, e.g., ANTONIN SCALIA, *A MATTER OF INTERPRETATION: FEDERAL COURTS AND THE LAW* (1997); ADRIAN VERMEULE, *JUDGING UNDER UNCERTAINTY: AN INSTITUTIONAL THEORY OF LEGAL INTERPRETATION* (2006); Frank H. Easterbrook, *Judicial Discretion in Statutory Interpretation*, 57 OKLA. L. REV. 1 (2004); Frank H. Easterbrook, *Text, History, and Structure in Statutory Interpretation*, 17 HARV. J.L. & PUB. POL'Y 61 (1994); John F. Manning, *What Divides Textualists from Purposivists?*, 106 COLUM. L. REV. 70 (2006).
 62. HENRY M. HART & ALBERT M. SACKS, *THE LEGAL PROCESS: BASIC PROBLEMS IN THE MAKING AND APPLICATION OF LAW* 1378 (1995) (quoting *Heydon's Case* (1584) 76 Eng. Rep. 637).
 63. *Bostock v. Clayton Cty.*, 140 S. Ct. 1731, 1738 (2020).
 64. HART & SACKS, *supra* note 62, at 1169. See generally STEPHEN BREYER, *ACTIVE LIBERTY: INTERPRETING OUR DEMOCRATIC CONSTITUTION* (2005) (articulating Justice Stephen Breyer's essentially purposivist conception of statutory and constitutional interpretation such that the people's "active liberty" interests are supported through judicial interpretation).
 65. WILLIAM N. ESKRIDGE JR., *INTERPRETING LAW: A PRIMER ON HOW TO READ STATUTES AND THE CONSTITUTION* 23 (2016); see also William N. Eskridge, Jr. & Philip P. Frickey, *Statutory Interpretation as Practical Reasoning*, 42 STAN. L. REV. 321, 351-52 (1990) ("[T]o evaluate the text, the interpreter will consider it in light of the whole enterprise, including the history, purpose, and current values.").

legislative rules: Congress should write clearer laws, with fewer delegations, to restore accountability through the electoral process.⁶⁶ Tucker is a prominent proponent of that view, articulating detailed “Principles for Delegation” that would tightly circumscribe when a delegation is appropriate at all.⁶⁷ For example, no delegation is appropriate unless “[s]ociety’s preferences are reasonably stable” and “policy instruments are confidently expected to work, and there exists a relevant community of experts outside the [independent agency].”⁶⁸

The problem with Tucker’s principles is that they do not create a space for the *development* of expertise: they assume (or require) that such expertise already exists. But expertise is endogenous to experience: expertise in combatting new, complex problems cannot be willed into existence by legislative fiat.

Another problem with this approach to statutory interpretation is that it does not answer what happens in the face of changing circumstances. Whether Congress delegates narrowly or broadly, with multiple missions or one, the agency must still encounter a changing world with ever-increasing complexities. The question in that event is: What next?

The answer is a kind of transparent grappling with the opportunities and demands of legality. Technocratic pragmatism requires confronting the text and structure of the Federal Reserve Act such that, as the Fed contemplates experimentation to combat complex problems, it will look muscularly at congressional authorizations and limitations. This is not a controversial statement. Whatever the methodological controversies between purposivism and textualism in courts, there is broad agreement among administrative-law scholars that *agencies* should interpret their statutes for the “purpose” that Congress has given them.⁶⁹ Even when discerning statutory purpose is challenging, an agency is well suited to that challenge given its constant engagement with the statutory text, its own

66. See PHILIP A. WALLACH, *TO THE EDGE: LEGALITY, LEGITIMACY, AND THE RESPONSES TO THE 2008 FINANCIAL CRISIS* 186–218 (2015). For a favorable discussion of rules-based monetary policy and what has come to be known as the Taylor Rule, see generally John B. Taylor, *Discretion Versus Policy Rules in Practice*, 39 CARNEGIE-ROCHESTER CONF. SERIES ON PUB. POL’Y 195 (1993).

67. TUCKER, *supra* note 7, at 569. Tucker outlines seven principles in total, with over two dozen caveats and qualifiers. *Id.*

68. *Id.*

69. See, e.g., Jerry L. Mashaw, *Norms, Practices, and the Paradox of Deference: A Preliminary Inquiry into Agency Statutory Interpretation*, 57 ADMIN. L. REV. 501, 509 (2005) (suggesting that agencies bear a “similar responsibility” to courts to fit their interpretation into “the overall topography of the law”); see also Kevin M. Stack, *Purposivism in the Executive Branch: How Agencies Interpret Statutes*, 109 NW. U. L. REV. 871, 895 (2015) (“[T]he agency’s duty is . . . to implement in furtherance of the principles or purposes of the statute . . .”).

regulations, and Congress itself.⁷⁰ As the Fed interprets its statute to determine the appropriate scope for its experimentation around new and complex problems, it can do so motivated by statutory purpose in part because doing so will lead it to more dialogue with political institutions.

Technocratic pragmatism requires identification of legal boundaries and a willingness, in the face of complex problems, to push experimentation “to the edge,” to quote political theorist Philip Wallach’s diagnosis of legality in crisis.⁷¹ That effort must also be consistent with the Fed’s congressional purposes as articulated in the overall structure of the Federal Reserve Act itself. This should be done transparently and with a diversity of inputs, two aspects of the Fed’s current legal dialogue that leave much to be desired.⁷²

The structure and legal design of the Federal Reserve Act, first passed in 1913 but amended scores of times since, support that view.⁷³ The Federal Reserve Act is a mix of highly discretionary instructions and highly specific ones. For example, arguably the Fed’s most important authority is its ability to engage in monetary policy. Section 2A contains Congress’s instruction about the appropriate ends of monetary policy:

The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy’s long run potential to increase production, so as to promote effectively the goals of

70. See VERMEULE, *supra* note 61, at 207-15; William N. Eskridge Jr., *Expanding Chevron’s Domain: A Comparative Institutional Analysis of the Relative Competence of Courts and Agencies to Interpret Statutes*, 2013 WIS. L. REV. 411, 424-25; Peter L. Strauss, *When the Judge Is Not the Primary Official with Responsibility to Read: Agency Interpretation and the Problem of Legislative History*, 66 CHI.-KENT L. REV. 321, 334, 346 (1990); Michael Herz, *Purposivism and Institutional Competence in Statutory Interpretation* 11 (Jacob Burns Inst. for Advanced Legal Studies, Working Paper No. 267, 2009), <https://ssrn.com/abstract=1472709> [<https://perma.cc/8398-QFBL>].

71. WALLACH, *supra* note 66, at 14.

72. Peter Conti-Brown, Yair Listokin & Nicholas R. Parrillo, *Towards an Administrative Law of Central Banking*, 38 YALE J. ON REG. (forthcoming 2021) (manuscript at 68) (on file with authors) (discussing the risk of “failures to credibly signal policy intentions” and “failures to receive diverse inputs on the appropriate course of action” during emergencies by the Fed).

73. Federal Reserve Act, Pub. L. No. 63-43, 38 Stat. 251 (codified as amended at 12 U.S.C. §§ 221-522 (2018)). The Federal Reserve Act has certainly been amended many times. In SARAH BINDER & MARK SPINDEL, *THE MYTH OF INDEPENDENCE: HOW CONGRESS GOVERNS THE FEDERAL RESERVE* 19 tbl.1.1 (2017), the authors identify twenty “Key Episodes of Congressional Reform of the Fed” during its century-long period of existence.

maximum employment, stable prices, and moderate long-term interest rates.⁷⁴

What is the specific suite of policies that are consistent with this triple mandate of “maximum employment, stable prices, and moderate long-term interest rates?” That is for the central bankers to decide. Congress identified in very broad terms the “goals” of the Fed; the “instruments” needed to accomplish those goals are not well specified.⁷⁵

Importantly, the scope of these goals differs comparatively from other central banks that lack goal – and, in some cases, instrument – independence.⁷⁶ It also differs appreciably from the scope of other U.S. regulators’ statutory mandates, which are much narrower.⁷⁷ This generous statutory discretion means that there is a legal space within which the Fed can experiment; when that space is curtailed, the space for experimentation shifts.⁷⁸

The amendments to the Federal Reserve Act bear this out. Not all of the statute is as highly discretionary as section 2A’s monetary-policy mandates. For example, beginning in 1947, the Fed began remitting the Reserve Banks’ excess earnings back to the Treasury. There was no legal requirement that it do so.⁷⁹

74. 12 U.S.C. § 225a (2018).

75. Stanley Fischer, *Central-Bank Independence Revisited*, 85 AM. ECON. REV. 201, 202-03 (1995) (exploring the significance of goal versus instrument independence of central banks).

76. See, e.g., Bernd Hayo & Florian Neumeier, *Central Bank Independence in New Zealand: Public Knowledge About and Attitude Towards the Policy Target Agreement 4-6* (Leibniz Inst. for Econ. Research at the Univ. of Munich, Working Paper No. 266, 2018) (explaining the semi-goal independence of the Reserve Bank of New Zealand, but noting that, in 2016, only six percent of the population of New Zealand was aware of the Reserve Bank of New Zealand’s inflation targets).

77. Cf. 12 U.S.C. § 5492 (2018) (enumerating the powers of the Consumer Financial Protection Bureau, its legal autonomy, etc.); 15 U.S.C. § 78d (2018) (establishing the Securities and Exchange Commission).

78. See JOHN D. HUBER & CHARLES R. SHIPAN, *DELIBERATE DISCRETION?: THE INSTITUTIONAL FOUNDATIONS OF BUREAUCRATIC AUTONOMY* 1-17 (2002) (examining how legislatures’ structural features affect how much discretion bureaucrats are granted). A number of scholars have noted the broad space for interpretation that the Federal Reserve Act provides. See, e.g., 2 ALLAN H. MELTZER, *A HISTORY OF THE FEDERAL RESERVE: 1951-1969* bk. 1, at 41-45 (2014) (discussing the shifting structure and policy activities of the Fed, and noting that “[t]he Federal Reserve Act, as amended and amplified by other legislation, left much scope for interpretation”); David Small & James Clouse, *The Limits the Federal Reserve Act Places on the Monetary Policy Actions of the Federal Reserve*, 19 ANN. REV. BANKING L. 553, 557 & n.19 (2000) (discussing the “incidental powers” provision of the Federal Reserve Act under section 4(4)).

79. 12 U.S.C. § 289 (2018); Peter Conti-Brown, *The Institutions of Federal Reserve Independence*, 32 YALE J. ON REG. 257, 281 n.103 (2015) (citing Sarah Binder, *Would Congress Care if the Federal Reserve Lost Money? A Lesson from History*, MONKEY CAGE (Feb. 24, 2013),

But this changed in 2015, with the passage of the Fixing America's Surface Transportation Act (FAST Act).⁸⁰ The FAST Act formalized this informal arrangement: the Fed now lacks discretion over where to send its excess earnings.⁸¹

For the most important powers that the Fed can use to experiment in the face of existential, complex problems, its statutory authority looks like a blend of section 2A's wide-open monetary-policy objectives and the FAST Act's restrictions. This gives the Fed even more permission from Congress to engage in technocratic-pragmatic experimentation.

1. *Who Decides What the Law Requires?*

Of course, declaring the Federal Reserve Act to be broad in its mandates and permissive in the discretion it grants to the Fed is one thing. But when the Fed engages in this experimentation, who decides whether the legal boundaries, such as they are, are honored?

For agencies in general, the answer has historically been the judiciary. The requirement that agencies conform to statute is the bedrock of administrative law.⁸² For the Fed, however, the answer is not as simple. Judicial oversight of the Fed's regulatory actions is straightforward enough: the judiciary still participates in determining the appropriate scope of the Fed's powers and limitations.⁸³ But for the Fed's most important authorities, and where the development of expertise is likely to occur most frequently, the Fed exists as something of a lawmaker

<https://themonkeycage.org/2013/02/would-congress-care-if-the-federal-reserve-lost-money-a-lesson-from-history> [<https://perma.cc/R8CJ-UZTR>].

80. 12 U.S.C. § 289 (as amended by Fixing America's Surface Transportation Act, Pub. L. No. 114-94, 129 Stat. 1312 (2015)).
81. *Id.* § 289(a)(3)(B); U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-17-243, FEDERAL RESERVE SYSTEM: POTENTIAL IMPLICATIONS OF MODIFYING THE CAPITAL SURPLUS ACCOUNT AND STOCK OWNERSHIP REQUIREMENT 1-11 (2017) (describing the Fed's transfer of excess earnings to the Treasury as a result of the Fixing America's Surface Transportation Act reform).
82. See, e.g., *Massachusetts v. EPA*, 549 U.S. 497, 528-30 (2007) (holding that the EPA's construction of "air pollutant" was plainly "foreclose[d]" by the Clean Air Act); *Lacewell v. Office of the Comptroller of the Currency*, 2019 U.S. Dist. LEXIS 182934, at *2-3 (S.D.N.Y. Oct. 21, 2019) (finding that the Office of the Comptroller of the Currency's fintech charter was precluded by the National Bank Act per *Vullo v. Office of the Comptroller of the Currency*, 378 F. Supp. 3d 271, 300 (S.D.N.Y. 2019)).
83. Some recent cases involving the Federal Reserve System include *Bozeman Financial LLC v. Federal Reserve Bank of Atlanta*, 955 F.3d 971 (Fed. Cir. 2020), which assessed the right of Federal Reserve Banks to hold intellectual property; *Fourth Corner Credit Union v. Federal Reserve Bank of Kansas City*, 861 F.3d 1052 (10th Cir. 2017), which determined the right of a "marijuana bank" to a master account; and *Bloomberg L.P. v. Board of Governors of the Federal Reserve System*, 649 F. Supp. 2d 262 (S.D.N.Y. 2009), which involved a request by Bloomberg for information on Fed emergency loans offered during the 2008 financial crisis.

unto itself. By old tradition, the Fed's monetary policy and constitutional structure are not subject to judicial review.⁸⁴

This lack of judicial oversight creates a vacuum that makes it unclear how the Fed can engage in lawful experimentation within established boundaries of law. This legal-interpretive question lies at the heart of some of the most important critiques of the Fed's actions in both 2008 and 2020. Consider, for example, Wallach's critique of Fed actions in 2008 through a lens of legality and legitimacy, a topic to which we will return in Part III.⁸⁵ Wallach's critique focuses on the divergence between legality and legitimacy in combatting financial crises (but with application to other kinds of complex problems the Fed must address). The conundrum of many complex problems is that, in Wallach's words, "[r]elying on already existing legal authorities may be insufficient to meet the challenges, and exigency may make obtaining new ones impossible. History generally esteems leaders who seize these moments and respond forcefully, whether in strict compliance with the law or not."⁸⁶ Thus, strict adherence to legal requirements can in fact undermine efforts at legitimacy according to Wallach. Wallach's argument is that "legality is neither necessary nor sufficient to establish an action's legitimacy during a crisis."⁸⁷

Wallach is largely responding to a descriptive account of executive power during military and financial crises by Eric Posner and Adrian Vermeule that places legal formalism on the backburner while the Executive plunges into the void to resolve major crises—in their view, "legislatures and courts[] 'come too late' to crises"⁸⁸ At first blush, it would appear that technocratic pragmatism

84. See *Conti-Brown*, *supra* note 79, at 305-07 & n.209 (citing *Melcher v. Fed. Open Mkt. Comm.*, 836 F.2d 561 (D.C. Cir. 1987); *Comm. for Monetary Reform v. Bd. of Governors of the Fed. Reserve Sys.*, 766 F.2d 538 (D.C. Cir. 1985); *Riegle v. Fed. Open Mkt. Comm.*, 656 F.2d 873 (D.C. Cir. 1981); and *Reuss v. Balles*, 584 F.2d 461 (D.C. Cir. 1978) as examples of instances where courts refused to reach the merits of claims that the Federal Open Market Committee's (FOMC) structure was unconstitutional); *Conti-Brown et al.*, *supra* note 72, at 6-8 (discussing the practical issues which preclude judicial review of monetary policy); David Zaring, *Law and Custom on the Federal Open Market Committee*, 78 *LAW & CONTEMP. PROBS.* 157, 175 & n.67 (2015) (citing the standard of review, or lack thereof, established in *Raichle v. Federal Reserve Bank of New York*, 34 F.2d 910, 915 (2d Cir. 1929), along with "*Chevron* deference, [and] unwilling potential plaintiffs" as the reasons why the FOMC is "extremely difficult to judicially supervise").

85. See generally WALLACH, *supra* note 66 (evaluating the legitimacy of crisis-era and postcrisis administrative action).

86. *Id.* at 3.

87. *Id.* Ironically, Wallach's recommendation to combat the slippery nature of illegitimacy is to make legal boundaries clearer, despite the observation that law and legitimacy diverge in important respects. *Id.* at 3, 14.

88. Posner & Vermeule, *Crisis Governance in the Administrative State*, *supra* note 5, at 1640-41 (discussing the "Schmittian" model of the administrative state in crisis).

takes a dim view of legal constraints, similar to that of Posner and Vermeule or the position implicit in Wallach's separation of legitimacy and legality. In fact, however, technocratic pragmatism takes as given that experimenting agencies will stay within the boundaries of law. Legality, then, is necessary but insufficient for promoting the appropriate level of bureaucratic expertise in the face of complex problems. However, the question remains: When interpreting a complex, discretionary statute like the Federal Reserve Act, what in fact did Congress prohibit? Legality, broadly construed and transparently defended, provides the statutory guidance that the Fed—especially in the absence of judicial review—requires.

C. *Pragmatism and Accountability*

The second primary protection for technocratic pragmatists is political accountability. Political accountability provides cover against the critique that a technocratic-pragmatist agency like the Fed will seek out opportunities to experiment for reasons inconsistent with the common weal. In the face of complex problems, will it choose the correct paths along which to experiment? Will it usurp the political processes by substituting its own biases for democratic values in the name of technocratic expertise? Will this experimentation result in the abdication of the hard work of making policy choices through democratic governance?

There are no easy answers to these concerns, but political accountability is as close to the correct answer as one can come. An agency that experiments to increase its expertise, even in the face of existential, complex problems, can outrun the demands of legislative oversight and public accountability. To counteract these risks, we need a framework for articulating when technocratic-pragmatic agencies can embrace experimentation and when they should avoid it.

1. *Bureaucratic Drift*

First, we must identify the nature of the problem itself, part of which is the risk of “bureaucratic drift.” Bureaucratic drift refers to “the problem where the high costs of monitoring and controlling bureaucracies leads to situations in which bureaucrats will act in ways inconsistent with the original deal or ‘coalitional arrangement’ struck between interest groups and politicians.”⁸⁹ The

89. Jonathan R. Macey, Winstar, *Bureaucracy and Public Choice*, 6 SUP. CT. ECON. REV. 173, 179 (1998); see also Mathew D. McCubbins, Roger G. Noll & Barry R. Weingast, *Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies*, 75 VA. L. REV. 431, 439–40 (1989) (identifying three components associated with preventing policy drift).

agency costs associated with the gap between the interests of the enacting legislative coalition and the implementing bureaucratic actors cause bureaucratic drift.⁹⁰ “If greater delegation allows agencies greater opportunities to pursue their own goals, it only helps the agencies, not the political principals.”⁹¹

The answer to controlling bureaucratic drift from the original literature on the subject is more and better ex post oversight by congressional subcommittees or specialized executive or legislative agencies like the Office of Information Regulatory Affairs and the Government Accountability Office.⁹² But part of a technocratic-pragmatist answer is to accept drift as both a fact of life and, in important cases, a benefit rather than a cost to be managed. In other words, given the complexity of existential problems within the broad statutory frameworks that Congress has articulated for the Fed, the fact that the Fed develops expertise in areas not imagined by enacting coalitions is for the greater good. Rather than serving the Fed’s own interests by deviating from a narrow mandate, the Fed is serving legislators’ goals. Their goals are simply very broad, and the path of expertise unspecified. It is incumbent on the agency to develop necessary expertise, not for Congress to legislate it.⁹³

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90. See Kathleen Bawn, *Political Control Versus Expertise: Congressional Choices About Administrative Procedures*, 89 AM. POL. SCI. REV. 62, 63 (1995) (identifying agency procedures as a cost which “reduce[s] independence”); Stephenson, *Bureaucratic Decision Costs*, *supra* note 11, at 471 (defining bureaucratic drift as “the degree to which the agency pursues goals that diverge from those of the principal”); Wagner, *supra* note 57, at 2031 (noting that OIRA review, research, and even the use of academic language all are potential costs imposed by different policy interests between the presidency and an agency).
 91. Mathew D. McCubbins, Roger G. Noll & Barry R. Weingast, *Administrative Procedures as Instruments of Political Control*, 3 J.L. ECON. & ORG. 243, 257 (1987). A countervailing risk to bureaucratic drift is “legislative drift,” or the inability of an enacting coalition to “constrain private interests and future coalitions from tampering with an enacted agreement.” Murray J. Horn & Kenneth A. Shepsle, *Commentary on “Administrative Arrangements and the Political Control of Agencies”: Administrative Process and Organizational Form as Legislative Responses to Agency Costs*, 75 VA. L. REV. 499, 503 (1989).
 92. Macey, *supra* note 89, at 179 (“Generally speaking, the cure for bureaucratic drift is ex post control over bureaucratic behavior by congressional subcommittees, oversight by specialized agencies such as the Congressional Budget Office and the General Accounting Office, and reliance on interest group notification.”); *see also* Kagan, *supra* note 50, at 2277–80 (noting that two former heads of OIRA grounded their work in correcting for the “overzealous pursuit of agency goals”).
 93. In making this argument, we build on Jerry L. Mashaw, *Prodelegation: Why Administrators Should Make Political Decisions*, 1 J.L. ECON. & ORG. 81 (1985).

2. *Democratic Deficit, or the Problem of Hard Choices*

Perhaps the most important critique of technocratic pragmatism is that it facilitates the evasion of appropriate political accountability over judgments that are not for technocrats to make. This comes from an old critique. In his 1980 defense of constitutional interpretation that promotes democratic participation, John Hart Ely critiqued broad legislative delegations—legislators “refusing to legislate”—as one of the central flaws in American democracy.⁹⁴ “There can be little point in worrying about the distribution of the franchise and other personal political rights,” Ely wrote, “unless the important policy choices are being made by elected officials.”⁹⁵

A similar concern motivates attempts to revive the so-called “nondelegation doctrine,” a constitutional doctrine of great theoretical appeal but limited practical application.⁹⁶ As Justice Gorsuch has written, “if Congress could pass off its legislative power to the executive branch,” serious accountability problems might arise.⁹⁷ “Legislators might seek to take credit for addressing a pressing social problem by sending it to the executive for resolution, while at the same time blaming the executive for the problems that attend whatever measures he chooses to pursue.”⁹⁸

Such democracy deficits are a famous bugaboo of central-bank theorists, as well. Tucker, for instance, offers a litany of critiques:

94. JOHN HART ELY, *DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW* 132 (1980).

95. *Id.* at 133.

96. The doctrine, although substantially revived in conservative legal circles, has been mostly a dead letter since the Court’s last application in *Schechter Poultry Corp. v. United States*, 295 U.S. 495 (1935). Most recently, the Supreme Court in *Gundy v. United States* described the standard as stating that “a statutory delegation is constitutional as long as Congress ‘lay[s] down by legislative act an intelligible principle to which the person or body authorized to [exercise the delegated authority] is directed to conform.’” 139 S. Ct. 2116, 2123 (2019) (quoting *J.W. Hampton, Jr., & Co. v. United States*, 276 U.S. 394, 409 (1928)). The debate is ongoing, including in this volume; its future application in a newly constituted Supreme Court is unknown. Compare Ilan Wurman, *Nondelegation at the Founding*, 130 YALE L.J. (forthcoming 2021) (arguing that the nondelegation doctrine existed at the Founding and applied to “important subjects” that Congress could not delegate to the Executive), with Nicholas R. Parrillo, *A Critical Assessment of the Originalist Case Against Administrative Regulatory Power: New Evidence from the Federal Tax on Private Real Estate in the 1790s*, 130 YALE L.J. (forthcoming 2021) (exploring the 1798 direct tax’s administration as a Founding-era example of coercive and domestic congressional rulemaking delegation).

97. *Gundy*, 139 S. Ct. at 2134 (Gorsuch, J., dissenting). In this dissenting opinion, Gorsuch echoes earlier such complaints about the “clear, if difficult, choice[s]” that Congress must make but often chooses to avoid. *Indus. Union Dep’t, AFL-CIO v. Am. Petrol. Inst.*, 448 U.S. 607, 685 (1980) (Rehnquist, J., concurring).

98. *Gundy*, 139 S. Ct. at 2135 (Gorsuch, J., dissenting).

[B]ecause they reduce public participation; or because their policy boards are even less representative of the makeup of the community than the elected assembly; or because they unavoidably delegate choices on values and objectives; or because they are vulnerable to “expert” group-think; or because, where their objectives are fixed, they reduce government’s flexibility to respond to events in the interests of the people; or because they reduce the capacity of the electorate to register discontent via the orderly means of an election; or because they restrict debate to an in-crowd of cognoscenti who lack the ability and incentives of elected politicians to communicate with a broad public in comprehensible terms; or because the members of the technocracy are part of a transnational (Davos) elite that has bootstrapped itself into power in pursuit of their own interests and view of how the world should be organized; or, more simply, because the spread of unelected power is alien to who we are, who we struggled to be.⁹⁹

In other words, “[t]here is not one monolithic democratic deficit that hangs over” central banks, but rather there are “as many . . . as there are prevalent views of why democracy matters to us.”¹⁰⁰ When new, complex problems whose clear resolution has not yet been reduced to political consensus arise, the concern is particularly acute.¹⁰¹

3. *The Structure of Oversight: Judicial, Executive, and Legislative*

To combat bureaucratic drift and the risk that central bankers usurp democratic processes in the selection of values, oversight must check experimentation. When administrative oversight is contemplated, one can imagine three options: judicial, executive, and legislative.

Of these, judicial oversight is the least significant for the Fed. The primary reason is justiciability. Largely because of standard (and bespoke) versions of that doctrine, the Fed has enjoyed a long history of insulation from judicial

99. TUCKER, *supra* note 7, at 219.

100. *Id.* (emphasis omitted).

101. See BINDER & SPINDEL, *supra* note 73, at 27 (discussing the interdependence of the Fed and Congress in the process of value selection); PETER CONTI-BROWN, THE POWER AND INDEPENDENCE OF THE FEDERAL RESERVE 240 (2017) (discussing the inevitable influence of personnel on value selection); see also Alan S. Blinder, *Central Banking in a Democracy*, 82 FED. RES. BANK RICH. ECON. Q. 1, 10-13 (1996) (discussing the relationship between the Fed’s independence and democratic norms of popular participation).

review.¹⁰² In its absence, the executive and legislative branches must do the work of keeping tabs.

Executive oversight of Fed actions is (in)famously limited by traditions of Fed independence. But personnel is policy at the Fed, just as anywhere else: Fed governance orients the value selection inherent in technocratic pragmatism.¹⁰³ Injecting appointees' views about the appropriate kinds of Fed experiments is an appropriate and effective form of executive control.

Perhaps the most important form of oversight, however, comes from Congress. Congressional oversight comes in many forms but can be reduced to "congressional review of the actions of federal departments, agencies, and commissions, and of the programs and policies they administer, including review that takes place during program and policy implementation as well as afterward."¹⁰⁴

Congressional oversight is hardly free from problems. It "occurs in an ever-present political context in which Congress's relationship with administrative entities can range from cooperation to conflict."¹⁰⁵ Lawmakers facing electoral pressures can use such hearings to "generat[e] favorable publicity for lawmakers, win[] the electoral support of constituents and outside groups, or rebut[] criticisms of favorite programs or agencies."¹⁰⁶ Congressional oversight can also raise important constitutional concerns.¹⁰⁷

Whatever the (de)merits of congressional oversight of the administrative state when agencies focus on essential business, tailored, cooperative congressional oversight in periods of technocratic experimentation is essential. Committee oversight may be sufficient in some cases; special congressional commissions with specific oversight mandates may be important in others. Regardless, technocratic pragmatism without congressional oversight makes accountability arguments against agency experimentation damning.

Congressional oversight of central-banking activities has not always been welcome, especially from the perspective of central bankers. Traditions of secrecy

102. See Conti-Brown, *supra* note 79, at 305-07.

103. See CONTI-BROWN, *supra* note 101, at 247-61 (discussing governance proposals as a key mechanism of Fed oversight).

104. JOEL D. ABERBACH, KEEPING A WATCHFUL EYE: THE POLITICS OF CONGRESSIONAL OVERSIGHT 2 (1990).

105. WALTER J. OLESZEK, CONG. RESEARCH SERV., R41079, CONGRESSIONAL OVERSIGHT: AN OVERVIEW 6 (2010).

106. *Id.*; see also MORRIS S. OGUL, CONGRESS OVERSEES THE BUREAUCRACY: STUDIES IN LEGISLATIVE SUPERVISION 15 (1976) ("Few congressmen can resist an opportunity for promoting their careers. Hence, the greater the likelihood of increased political visibility from a particular exercise of oversight, the more probable it is that oversight will be undertaken.").

107. See, e.g., *Trump v. Mazars USA, L.L.P.*, 140 S. Ct. 2019, 2031-32 (2020).

in central banking are very old.¹⁰⁸ Recent efforts to subject the Fed to more searching “audits” of the Government Accountability Office were widely rebuffed by the Fed and its defenders.¹⁰⁹ The Fed opposed public accountability after 2008 for its emergency lending decisions until federal courts—in a rare moment of *judicial* oversight—forced the central bank to make those disclosures.¹¹⁰ And while the Fed has made significant progress toward liberalizing its transparency in monetary-policy communications, it has not done so in other areas of its significant power.¹¹¹ The precise details of congressional oversight will vary depending on the nature of experimentation. In Part II, we discuss how congressional oversight has fortified and can continue to fortify experimentation in cybersecurity, emergency lending, and managing climate risk.¹¹² But most generally, justifying the Fed’s continued experimentation requires greater commitment to public transparency.

D. Pragmatism and Coercion

Even assuming the Fed follows the law and is open to public and congressional accountability, experimentation at the frontier of its authority can still introduce important rule-of-law concerns. Most basically, for Fed experimentation that binds parties without choice, there should be precautions taken consistent with broad principles that animate much of the regulatory state, such as notice and opportunity to be heard.¹¹³

When experimentation fits within other broad schematics of agency power—guidance, regulation, enforcement proceedings—it must conform to the legal requirements associated with each. But even within those legal requirements, there

108. ALAN S. BLINDER, *THE QUIET REVOLUTION: CENTRAL BANKING GOES MODERN* 13 (2004); cf. ROBERT D. AUERBACH, *DECEPTION AND ABUSE AT THE FED: HENRY B. GONZALEZ BATTLES ALAN GREENSPAN’S BANK* 9 (2008) (“The preservation of power in combination with secrecy is directly applicable to the Fed . . .”).

109. E.g., Ben Bernanke, “*Audit the Fed*” Is Not About Auditing the Fed, BROOKINGS INSTITUTION (Jan. 11, 2016), <https://www.brookings.edu/blog/ben-bernanke/2016/01/11/audit-the-fed-is-not-about-auditing-the-fed> [<https://perma.cc/3XR9-WBPP>].

110. See *Bloomberg L.P. v. Bd. of Governors of the Fed. Reserve Sys.*, 649 F. Supp. 2d 262, 282 (S.D.N.Y. 2009), *aff’d*, 601 F.3d 143 (2d Cir. 2010).

111. Conti-Brown et al., *supra* note 72 (manuscript at 47-48).

112. See *infra* Part II.

113. For a recent overview of some of these principles within the Fed, see Randal Quarles, Vice Chair for Supervision, Bd. of Governors of the Fed. Reserve Sys., Spontaneity and Order: Transparency, Accountability, and Fairness in Bank Supervision, Remarks at the American Bar Association Banking Law Committee Meeting 2020 (Jan. 17, 2020), <https://www.federalreserve.gov/newsevents/speech/files/quarles20200117a.pdf> [<https://perma.cc/TTW3-CUND>].

are margins for error that invite toward or dissuade a technocratic-pragmatist Fed from experimentation.

To that end, we articulate a rule of thumb to temper legitimate experimentation in service of technocratic pragmatism. All else equal, agency experimentation beyond core expertise should be inversely correlated with the level of coercion imposed on regulated entities in the course of that experimentation. The structure of this framework is illustrated in Figure 1.

FIGURE 1.

TECHNOCRATIC PRAGMATISM AND EXPERT EXPERIMENTATION

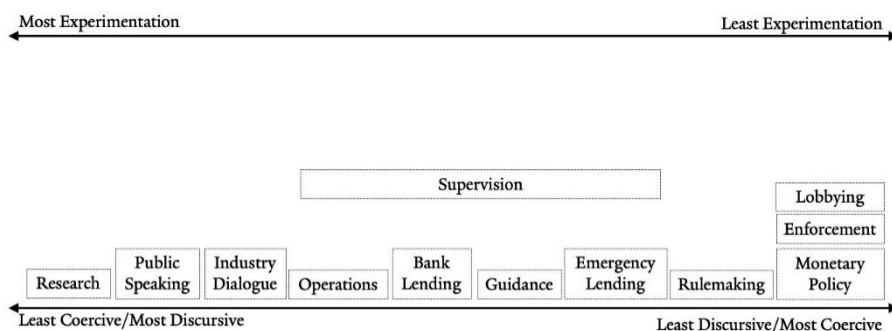


Figure 1 places administrative tools that serve as the institutional basis of experimentation on a continuum, running from least coercive to most coercive. We also identify discourse as the reciprocal of coercion. Together, they represent the range of instruments that the Fed has – not only to respond to exigent problems, but also to develop expertise to respond to complex problems in the future. Purely discursive tools are the least coercive, and thus pose the lowest downside cost of mistake in the course of responding to problems and developing expertise. Most obviously, discursive tools include the power of public speaking by Fed officials, an important mechanism for shaping the agenda inside and outside of the Fed. Less obviously, discursive tools include internal research – by staffers, but also by in-house research departments. The Fed employs one of the largest groups of research economists in the world.¹¹⁴ To address complex problems, agencies should be much more aggressive in funding tailored research to provide the necessary knowledge to enable effective action.

114. *Meet the Economists*, BOARD GOVERNORS FED. RES. SYS. (Aug. 17, 2020), <https://www.federalreserve.gov/econres/theeconomists.htm> [<https://perma.cc/G579-UMQ2>]; see also Justin Fox, *How Economics PhDs Took over the Federal Reserve*, HARV. BUS. REV. (Feb. 3, 2014), <https://hbr.org/2014/02/how-economics-phds-took-over-the-federal-reserve> [<https://perma.cc/KW2B-956P>] (“[T]he Federal Reserve System is almost certainly the nation’s largest employer of PhD economists . . .”).

Beyond purely discursive engagement, the Fed should also view its own internal operations as useful tools for problem engagement and organizational learning. For instance, when the Fed first began to engage with cybersecurity threats, it turned to its own information-technology staff—responsible for protecting the most important payment- and securities-settlement systems in the world—to begin the work. Similar types of internal, operations-based learning should be leveraged much more extensively by myriad agencies to develop novel approaches to dealing with climate change. Even so, operations have weightier material effects than speeches and research. As a result, they are necessarily more coercive and require greater justification in the service of technocratic pragmatism.

At the other end of the spectrum, we locate the tools of coercive rulemaking, enforcement, monetary policy, and lobbying as the areas where the Fed has something of a monopoly, where its experiments will be most coercive. Short of leaving the country, there is no opportunity to escape Fed experimentation in these areas. Given the dollar's dominance, even leaving the country will not be enough. When agencies impose penalties on actors in service of addressing complex problems, they owe a duty to use their expertise to calibrate the rules and their backing sanctions appropriately. If an agency's mission demands that it wade into territory it little understands, the need for legislative—not bureaucratic—mission clarity is even greater. In the use of monetary policy, the lack of alternatives for private actors necessarily means that agency experimentation should be at its nadir, akin to enforcement. The normative implications of this view are important, too, as this conception of state power and administrative experimentation would place a weight—though not a dispositive one—on the scale against suggestions under consideration that the European Central Bank use monetary policy as a mechanism to combat climate change (a topic we address at more length below).¹¹⁵

The inclusion of lobbying as a coercive tool of the Fed requires some additional explanation. Lobbying for legal reform is inevitable where it touches on the Fed's core expertise—Congress has always turned to bureaucrats for comment on legislation that would affect the bureaucracy. Where there is a break in the tether between that proposed legislation and the Fed's core missions, though, central bankers must tread lightly. This is a form of experimentation that will result in the most coercive of changes: a change in the legal framework governing the macroeconomy.

115. See Tommy Stubbington & Martin Arnold, *Pushback and Practicalities Limit Hopes for 'Green QE' from ECB*, FIN. TIMES (Nov. 4, 2019), <https://www.ft.com/content/d3f52ba6-fef2-11e9-b7bc-f3fa4e77dd47> [<https://perma.cc/NMK3-B4ZT>] (discussing some of the limitations on a proposal for the European Central Bank to make its bond portfolio greener); *infra* Section II.C.

An intermediate category includes the Fed's extensive supervisory powers, a "distinctive form of governance," in Lev Menand's words.¹¹⁶ Supervision contains elements both coercive and discursive — the level of experimentation appropriate in supervision will thus depend on the precise action taken. There is room for additional experimentation in this intermediate space, but because supervision is often performed without judicial oversight or any other recourse, Fed supervisors must tread carefully.

E. Technocratic Pragmatism and the Demands of Legitimacy

Beyond desiderata of legality, accountability, and independence, pragmatic experimentation should ultimately bolster the Fed's legitimacy. Few concepts are more valorized by central bankers and scholars alike. As then-Chair Ben Bernanke on the occasion of the Fed's centennial put it, "[T]he legitimacy of our policies rests on the understanding and support of the broader American public, whose interests we are working to serve."¹¹⁷ Current Chair Jerome Powell echoed these sentiments five years later: "By clearly and transparently explaining our policies, we aim to strengthen the foundation of democratic legitimacy that enables the Fed to serve the needs of the American public."¹¹⁸

On the scholarly side, legitimacy — the "currency of institutions" — underlies much Fed analysis.¹¹⁹ For instance, Tucker's critique of central-bank power is based in a critique about a deficit of legitimacy.¹²⁰ And Wallach, one of the most trenchant of observers about central-bank legitimacy in the aftermath of 2008, viewed the Fed's legitimacy as in peril after its role in the crisis.¹²¹

But how should we understand "legitimacy" in the central-banking context? Writing in 2005, constitutional theorist Richard Fallon wrote that "legitimacy is

116. Lev Menand, *Why Supervise Banks? The Forgotten Past and Uncertain Future of a Distinctive Form of Governance*, 74 VAND. L. REV. (forthcoming 2021) (manuscript at 77), <https://ssrn.com/abstract=3421232> [<https://perma.cc/99YN-CFRR>].

117. Ben S. Bernanke, Chair, Bd. of Governors of the Fed. Reserve Sys., Concluding Remarks at the Ceremony Commemorating the Centennial of the Federal Reserve Act 3 (Dec. 16, 2013), <https://www.federalreserve.gov/newsevents/speech/files/bernanke20131216b.pdf> [<https://perma.cc/7CS3-TFKU>].

118. Jerome H. Powell, Chair, Bd. of Governors of the Fed. Reserve Sys., The Federal Reserve's Framework for Monitoring Financial Stability 1 (Nov. 28, 2018), <https://www.federalreserve.gov/newsevents/speech/files/powell20181128a.pdf> [<https://perma.cc/XAS2-B8HD>].

119. See RAKESH KHURANA, FROM HIGHER AIMS TO HIRED HANDS: THE SOCIAL TRANSFORMATION OF AMERICAN BUSINESS SCHOOLS AND THE UNFULFILLED PROMISE OF MANAGEMENT AS A PROFESSION 14 (2007).

120. TUCKER, *supra* note 7, at 9-10.

121. WALLACH, *supra* note 66, at 175.

much invoked but little analyzed in constitutional debates.”¹²² A fortiori in debates about central banking. This is true in part because what interlocutors mean by a “legitimate” Fed action in fact speaks to a wide variety of different ideas and ideals. Fallon’s observation about legitimacy’s muddle opened a taxonomic account of legitimacy in three parts: legal legitimacy, sociological legitimacy, and moral legitimacy. Each is helpful in capturing what technocratic pragmatism offers the Fed.

1. *Formal Legitimacy*

By legal legitimacy, Fallon meant what we have described essentially as “legality”: “[T]hat which is lawful is also legitimate.”¹²³ In the context of technocratic pragmatism, the Fed’s experiments would be illegitimate if they represented clear violations of law. We differ, then, from Wallach, who argues that legality “is neither necessary nor sufficient to establish an action’s legitimacy.”¹²⁴ Technocratic pragmatism insists on honoring legality in the Fed’s experiments because law is the necessary mechanism of defining the Fed’s field of experimentation. When the Fed arrogates legal authority it has not been given, it erodes its legitimacy as a technocratic actor, threatening its ability for future experimentation.

That said, we agree that, although necessary, legality is insufficient to guarantee legitimacy. As noted above, this is true in part because very few understand the intricacies of the Fed’s legal authorities to be able to observe blatant illegality. And even where such accusations are lodged, sometimes the accusations invite multiple statutory interpretations that can be resolved in the Fed’s favor.¹²⁵

Sociological legitimacy is different. In Fallon’s words, a government institution like the Fed possesses sociological legitimacy “insofar as the relevant public regards it as justified, appropriate, or otherwise deserving of support for reasons beyond fear of sanctions or mere hope for personal reward.”¹²⁶ The “sociological” modifier connotes an empirical basis for this acceptance.

The Fed’s sociological legitimacy has suffered since its interventions, however legal, in 2008; it is too early to tell what the consequences of its extraordinary actions in 2020 will be. Gallup first began polling widespread approval of

122. Richard Fallon, *Legitimacy and the Constitution*, 118 HARV. L. REV. 1787, 1789 (2005).

123. *Id.* at 1794.

124. WALLACH, *supra* note 66, at 3. Ironically, Wallach’s recommendation to combat the slippery nature of illegitimacy is to make legal boundaries clearer, despite the observation that law and legitimacy diverge in important respects.

125. See *infra* notes 222–233 and accompanying text.

126. Fallon, *supra* note 122, at 1795.

the Fed in 2003. Using Gallup polling data and looking at “net positive” — adding the “excellent” and “good” survey responses and subtracting the “poor” responses — shows a decline. In 2003, the Fed had the second-highest net positive of any agency surveyed; by 2013, it had the second worst.¹²⁷ In 2014 to 2019, it stabilized at the bottom third of agencies included in the survey.¹²⁸ Truly, as a sociological matter, the Fed’s standing has suffered.

This loss of standing is viewed by some commentators on central-bank legitimacy as a problem of institutional design. Tucker’s conception of legitimacy, central to his critique of existing institutional arrangements, is essentially sociological: a legitimate central bank is one whose “right to deploy the state’s powers” is accepted by “society as a whole.”¹²⁹ The concept, Tucker writes, is “always evaluative,” not descriptive, meaning that we must assess whether the public voluntarily accepts the right of the central bank (or other entity) to exercise the authority it purports to exercise.¹³⁰

The concept of sociological legitimacy, in a polarized world with so much to gain from institutional delegitimization, is problematic. First, there is the problem of the appropriate quantum and quality of public support. How should we measure what matters? Second, there is the problem of public distance from the Fed’s activities: a technocratic institution like the Fed succeeds in part by allowing the public the luxury of not having to pay attention to abstruse matters of finance and economics. Given that basic deal, how can the public be expected to assess the Fed on the merits? The legitimating task of reason-giving is surely important.¹³¹ But even detailed, public reasoning can only do so much.

The Fed certainly does not enjoy sociological legitimacy for the core duties of monetary policy, where there is great divide on the very instruments it should use and the monetary regime it should follow. Furthermore, determining by survey whether there is broad consensus for the Fed’s experiments is also likely to be very difficult. Some of the most important work the Fed does — in payments,

127. See *Government*, GALLUP, <https://news.gallup.com/poll/27286/government.aspx> [<https://perma.cc/F6FC-MRGZ>].

128. *Id.*

129. TUCKER, *supra* note 7, at 11–12.

130. *Id.*

131. Reason-giving is one of the paramount features of administrative law, closely tied in with a quest to shore up legitimacy: when power is exercised, reasons must be given. And not partial reasons, either. In Jerry Mashaw’s words, “We insist that [reasons] be authentic by demanding that they be both transparent and contemporaneous.” Jerry L. Mashaw, *Small Things Like Reasons Are Put in a Jar: Reason and Legitimacy in the Administrative State*, 70 *FORDHAM L. REV.* 17, 26 (2001); see also Lisa Schultz Bressman, *Beyond Accountability: Arbitrariness and Legitimacy in the Administrative State*, 78 *N.Y.U. L. REV.* 461, 462 (2003) (arguing that Americans “have sought to reconcile the administrative state with a constitutional structure that reserves important policy decisions for elected officials and not for appointed bureaucrats”).

financial infrastructure, monetary policy, and much more—is so technical and obscure that few but experts are paying attention.

In Fallon's schematic, that leaves "moral legitimacy" to pick up the slack. The concept alludes to ideals of fairness and justice. In this sense, the Fed's actions to, say, fight deflation by engaging in large-scale asset purchases may be morally legitimate or illegitimate depending on one's sense of whether inflation or deflation is the morally appropriate target for the Fed's powers.

Technocratic pragmatism implicates this rough sense of moral legitimacy in its emphasis that experimentalism should engender less enthusiasm the more it requires coercion. The principle of noncoercion, as noted above, has a long tradition in American political history and philosophy. But this form of legitimation can only take the Fed so far. What is needed is a conception that highlights the legitimacy achieved through policy success.

2. *Functional Legitimacy*

Were legitimacy to say nothing about actually "tak[ing] care" to live up to broad statutory mandates, then it would be tempting to regard it and its validation through institutional design, procedural reform, or ideological commitment as a fool's errand worthy of abandonment. We think not: the ubiquity of institutional legitimacy as a rationale for Fed action requires something more. We argue, then, that when the Fed embraces its statutory authority, however broadly construed, with appropriate safeguards of legality, accountability, and noncoercion, it can succeed in enhancing its *functional legitimacy*. That functional legitimacy simply means successfully fulfilling statutory mandates in ways that are transparently communicated.

Functional legitimacy is, in our view, the core goal of technocratic pragmatism. When the Fed deploys its statutory powers, broadly construed, legally, with accountability, and tempered by reticence about coercion, it can succeed in learning more about a changing world and enhancing the common good—not with its focus on the past—but with an eye toward the future. This will inevitably lead to interventions with political salience, such as combating global climate change. But a technocratic pragmatist Fed need not cower in the face of partisan politics. It should seek instead to honor the safeguards of technocratic pragmatism to provide to society the expertise that it is expected, by statutory mandate, to develop.

This conception of functional legitimacy is not new. Nicholas Bagley, in criticizing the "procedure fetish" in administrative law, views a better conception of

legitimacy as one that “is measured not by the stringency of the constraints under which it labors, but by how well it advances collective goals.”¹³²

Technocratic pragmatism builds on this doctrine. It is an ethos that places central bankers as technocratic actors in the position of evaluating existing authority robustly to identify and develop the expertise necessary to contribute to the resolution of complex, contingent problems. To avoid the pitfalls of rendering the central bank a rival for democratic power, technocratic pragmatism contains important limits of legality, accountability, and noncoercion. These will go a long way towards shoring up the Fed’s formal legitimacy. But its commitment to experimentalist learning is paramount: it can enhance the Fed’s functional legitimacy even in an age of crisis.

That is the theory; Part II now describes the practice.

II. THE EXPERIENCE OF TECHNOCRATIC PRAGMATISM

This Part discusses how the Fed has pursued and can continue to pursue experimentation within legal limits without sacrificing accountability in three key areas: managing cyber risk, an area in which the Fed has engaged in technocratic pragmatism with barely a controversy; emergency lending in 2008 and 2020, where it stepped aggressively into the political breach; and global climate change, where it has only just begun its efforts. Each area presents lessons about the potential and limits of technocratic pragmatism.

A. *Pragmatic Learning and the Rise of Cyber Risk*

In the context of the financial system, cyber risk refers to the risk that any component of the information and communications technology through which the financial system operates could be compromised, temporarily or permanently, intentionally or by accident.¹³³ Numerous aspects of cybersecurity law, regulation, and administration pose classic “wicked” problems. As Alan Rozenshtein has recently written, these aspects of cybersecurity are (a) unsettled in terms of their ultimate objectives; (b) difficult to solve because information regarding them is uncertain and diffuse; and (c) even once crisply scoped, impossible to solve permanently.¹³⁴ They tend to require collective action to produce

132. Nicholas Bagley, *The Procedure Fetish*, 118 MICH. L. REV. 345, 350 (2019).

133. For background on cyber risks posed to the financial system, see generally Anil K. Kashyap & Anne Wetherilt, *Some Principles for Regulating Cyber Risk*, 109 AEA PAPERS & PROCS. 482 (2019).

134. See Alan Z. Rozenshtein, *Wicked Crypto*, 9 U.C. IRVINE L. REV. 1181, 1190–97 (2019) (characterizing aspects of encryption policy as “wicked”).

security externalities and require a mix of private-sector coordination, public-private coordination, and public leadership to prepare for and respond to an ever-changing set of threats.¹³⁵ These threats are the site of innovation by criminals, hobbyists, and even rival nation-states, thus requiring continual innovation on the part of the federal government in response.

Today, policymakers and scholars treat the expertise necessary to address cyber risk as a central component of the Fed's capacity as an agency.¹³⁶ But the existential problems posed by cybersecurity remain a ubiquitous threat. Chair Powell, for example, recently confessed that he thinks the Fed "can never feel like we have done enough to deal" with the unique problems posed by these issues.¹³⁷ It is the source of nightmare scenarios for technocrats and scholars alike.¹³⁸

The Fed has a unique role to play that the Federal Reserve Act, even as amended, barely contemplates. Not only do Fed personnel safeguard the Fed's own payment systems and securities-holding systems against intermittent attempts to divert huge sums of money and securities,¹³⁹ they also work to ensure

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135. Cf. PAUL ROSENZWEIG, *CYBER WARFARE: HOW CONFLICTS IN CYBERSPACE ARE CHALLENGING AMERICA AND CHANGING THE WORLD* 165 & n.24 (2013) (characterizing the public-good and common-pool aspects of cybersecurity as "wicked problem[s]"). On collective goods and their relation to the standard economic concept of public goods, see Robert C. Hockett & Saule T. Omarova, *Private Wealth and Public Goods: A Case for a National Investment Authority*, 43 J. CORP. L. 437, 443 (2018).
136. See OFFICE OF THE INSPECTOR GEN., FED. RESERVE, 2017-IT-B-009, *THE BOARD CAN ENHANCE ITS CYBERSECURITY SUPERVISION APPROACH IN THE AREAS OF THIRD-PARTY SERVICE PROVIDER OVERSIGHT, RESOURCE MANAGEMENT, AND INFORMATION SHARING* (2017); Loretta J. Mester, President & Chief Exec. Officer, Fed. Reserve Bank of Clev., *Perspectives on Cybersecurity, the Financial System, and the Federal Reserve*, Address at the 2019 Ohio Bankers Day (Apr. 4, 2019), <https://www.clevelandfed.org/en/newsroom-and-events/speeches/sp-20190404-perspectives-on-cybersecurity-the-financial-system-and-the-federal-reserve.aspx> [<https://perma.cc/5GX6-LJF6>]; Kevin J. Stiroh, Exec. Vice President, Fed. Reserve Bank of N.Y., *Thoughts on Cybersecurity from a Supervisory Perspective*, Remarks at SIPA's Cyber Risk to Financial Stability: State-of-the-Field Conference 2019 (Apr. 12, 2019), <https://www.newyorkfed.org/newsevents/speeches/2019/sti190412> [<https://perma.cc/4NW4-CLS8>].
137. *Monetary Policy and the State of the Economy: Hearing Before the H. Comm. on Fin. Servs.*, 115th Cong. 16 (2018) (statement of Jerome H. Powell, Chair, Board of Governors of the Federal Reserve System) (responding to a question by Rep. Blaine Luetkemeyer regarding data and cybersecurity at the Fed).
138. See, e.g., Stephen G. Cecchetti & Kermit L. Schoenholtz, *FEMA for Finance*, 97 TEX. L. REV. ONLINE 54, 61 (2019) (arguing for limiting the use of emergency guarantee authority to doomsday scenarios "such as large and hostile cyber-attacks or outright war").
139. See generally Jerome H. Powell, Chair, Bd. of Governors of the Fed. Reserve Sys., *Building a Safer Payment System*, Address at the Federal Reserve Bank of Kansas City (June 25, 2015), <https://www.federalreserve.gov/newsevents/speech/powell20150625a.htm> [<https://perma.cc/2DE8-FM2R>] (discussing Fed efforts to secure the payment system against cyberattack).

that the thousands of financial institutions and technology service providers under Fed supervisory jurisdiction remain resilient in the face of accidents and attacks.¹⁴⁰ Commentators may argue about the relative priority of cyber risk in relation to other threats to financial stability or about the particular strategies and tactics the Fed should take in securing the financial system against cyberattack, but none would gainsay the importance of the work—or the propriety of this work being undertaken by the Fed. In a very real way, technocratic expertise on cybersecurity—in the forms of network-engineering knowledge, computer-science knowledge, practical know-how on cyberdefense, experience modeling and practicing cyber crisis scenarios, and more—is part of the essential body of knowledge and skill that constitutes the Fed today.

1. *A History of Technology Innovation at the Fed*

But cybersecurity did not always occupy the essential role within the Fed that it now occupies. The administrative processes through which the Fed developed its now-core expertise and capacity to respond to cyber risk are instructive, as they show the value of experimentation and the Fed's idiosyncratic agency design in developing responsiveness to complex problems.

At the Fed's founding in 1913, telecommunications involved the primitive cables of Western Union,¹⁴¹ financial "books" sat on real shelves,¹⁴² and data-processing was a manual activity.¹⁴³ Indeed, at the time, computing was a task assigned not to machines, but to teams of workers—often women working under intense conditions in the "back office" of financial firms.¹⁴⁴ If there were a precursor to cybersecurity at the time, it would have been the accounting controls

140. See, e.g., Randal K. Quarles, Vice Chair for Supervision, Bd. of Governors of the Fed. Reserve Sys., Brief Thoughts on the Financial Regulatory System and Cybersecurity, Address at the Financial Services Roundtable (Feb. 26, 2018), <https://www.federalreserve.gov/newsevents/speech/quarles20180226b.htm> [<https://perma.cc/T4AU-8AR5>] (describing the cybersecurity work done by Fed supervisors).

141. See generally DAVID HOCHFELDER, *THE TELEGRAPH IN AMERICA, 1832-1920*, at 138-75 (2013) (discussing the historical progression from the telegraph to the telephone and the eventual fall of Western Union).

142. See generally Martin Campbell-Kelly, *Data Processing and Technological Change: The Post Office Savings Bank, 1861-1930*, 39 *TECH. & CULTURE* 1, 3-29 (1998) (presenting a historical account of technology at the British Post Office Savings Bank).

143. See generally Martin Campbell-Kelly, *Victorian Data Processing*, *COMM. ACM*, Oct. 2010, at 19-21 (describing the manual labor involved in interbank payment processing at the Bankers' Clearing House in London).

144. See Campbell-Kelly, *supra* note 142, at 18-19; cf. Jennifer S. Light, *When Computers Were Women*, 40 *TECH. & CULTURE* 455, 458-62 (1999) (discussing the early presence of women in "operator," or what we would now call "programmer," jobs).

that governed the data processing teams, or the millennia-old discipline of physical security that gave birth to the armored vault. But this work was hardly “core” to Fed activities. The original Federal Reserve Act barely mentions them. Section 16 of the original Federal Reserve Act refers to the process of note issuance, which imagines some technological complexity in clearing and transferring checks.¹⁴⁵ But it does not specify how the Fed should continue to develop that expertise: it only speaks to the need for Federal Reserve notes to “bear upon their faces a distinctive letter and serial number, which shall be assigned by the Federal Reserve Board to each Federal reserve bank.”¹⁴⁶ It imagines a role for the Comptroller of the Currency to “cause plates and dies to be engraved in the best manner to guard against counterfeits and fraudulent alterations.”¹⁴⁷ The rest of the kinds of activities that would today register under the Fed’s authority to control cyber risk were simply not imagined or imaginable in 1913.

The Fed, by necessity, learned quickly. From the Fed’s earliest years, its place among administrative agencies tasked with security rested on its acumen in the practices of financial exchange and industry—built atop a body of theoretical learning regarding economics and business behavior. Its first leaders were nearly all bankers, businessmen, or professors, and the “particular problem[s]” around which the body of Fed expertise coalesced have been primarily macroeconomic from the beginning.¹⁴⁸ The conclusion that Congress designed the Fed to stay secure in the execution of its responsibilities cannot be reached from the cast-and-die of statutory reference or contemporary practice in locks and vaults, but in the evolving challenges and complex problems that the Fed had to encounter in the pursuit of its core congressional agenda.

2. *The Division of Information Technology*

A core part of these innovations is the office now called the Division of Information Technology, originally called the Division of Data Processing.¹⁴⁹ The creation of the office, on January 1, 1963, went unnoticed in the press and was

¹⁴⁵. Federal Reserve Act, Pub. L. No. 63-43, § 16, 38 Stat. 251, 265-66 (1913).

¹⁴⁶. *Id.* at 266.

¹⁴⁷. *Id.* at 267.

¹⁴⁸. JAMES M. LANDIS, *THE ADMINISTRATIVE PROCESS* 23 (1938). For an account of the early Fed leadership, see 1 MELTZER, *supra* note 78, at 65-136.

¹⁴⁹. *Division Histories of the Board of Governors of the Federal Reserve System*, BOARD GOVERNORS FED. RES. SYS. 26 (June 19, 2020) (on file with authors).

not included in the Fed's annual report, except on the masthead, which listed the new division.¹⁵⁰

The original functions of the Division were primarily to support preexisting Fed functions with more sophistication and specialization than the Fed had managed before. Its tasks were to provide "information, training, and support services for automatic data processing" and to be the gateway for "operating the Board's computation center and supporting tabulating equipment."¹⁵¹ This was primarily a research function: the methods of statistical research had grown in computing power, and the Fed was aiming to capitalize on them. The Fed was not quick to develop this expertise from the beginning: the first year, with a staff of twenty-three people, fully 54.5% of the Division's budget went towards the "commercial rental costs of the IBM Electronic Accounting Machine . . . and IBM 1410 electronic data processing computer."¹⁵² Within one decade, by 1972, the Division had dramatically expanded its computing power; its budget constituted 25% of the total Board operating budget.¹⁵³ The costs raised some eyebrows internally, but a McKinsey-commissioned report concluded that the Division had indeed developed substantial expertise, "with well-controlled operations and the existence of high-caliber technical staff."¹⁵⁴ The Division continued, after this endorsement, to grow in size and in function. Not only did the Division continue in its core research functions, it also began consulting more widely to provide technical advice to supervised banks and paid increasing attention to cybersecurity.¹⁵⁵

150. Compare *Forty-Ninth Annual Report of the Board of Governors of the Federal Reserve System*, BOARD GOVERNORS FED. RES. SYS. (1962), https://fraser.stlouisfed.org/files/docs/publications/arfr/1960s/arfr_1962.pdf [<https://perma.cc/W9AK-T6UK>] (listing no Division of Data Processing), with *Fiftieth Annual Report of the Board of Governors of the Federal Reserve System*, BOARD GOVERNORS FED. RES. SYS. 273 (1963), https://fraser.stlouisfed.org/files/docs/publications/arfr/1960s/arfr_1963.pdf [<https://perma.cc/H72R-DVSA>] (noting the existence of the Division of Data Processing). All annual reports are available at FRASER, *Annual Report of the Board of Governors of the Federal Reserve System*, ST. LOUIS FED, <https://fraser.stlouisfed.org/title/annual-report-board-governors-federal-reserve-system-117> [<https://perma.cc/4P5P-SP76>].

151. *Division Histories of the Board of Governors of the Federal Reserve System*, *supra* note 149, at 26.

152. *Id.* at 26.

153. *Id.* at 27.

154. *Id.*

155. We would say more about the Division's growth after 1994, but, unlike with all other Division histories, the Board would not release information out of concerns that doing so would exacerbate cyber risk.

3. *Experimentation and the Development of Cyber Expertise*

Experimentation is the dominant theme of the Fed's growing expertise. When the information-technology revolution came to the financial system, the Fed first felt its impact through its work as an operator of interbank-payment and securities-settlement systems. In response to calls from its member banks to support the electronification of payments—a great boon to member banks through the reduction of transaction costs and the facilitation of new markets—the Fed collaboratively developed two of the world's earliest electronic large-value payment systems in conjunction with the private sector, known as Fedwire and Automated Clearing House.¹⁵⁶

With these systems came the Fed's first confrontations with serious forms of what we know today as cyber risk. Where prior payment systems had long had to deal with the risk of rogue employee misconduct, and even highway robbery, the embrace of the digital age came with a new set of potential hazards. Take, for instance, a \$150 million wire transfer in the mid-1970s that “got lost in the Fed's computer network [and] simply disappear[ed] in the Fed's switching center at Culpepper, Virginia.”¹⁵⁷ Or a Fedwire outage that, in Bernanke's assessment, deepened the 1987 market crash.¹⁵⁸ Over time, these accidents were accompanied by intentional harms carried out by criminals and spies.¹⁵⁹ Highway robbery was never a major concern for the earliest Fed boards. But increasingly, the most serious risks facing the Fed have come to look like problems for computer scientists and network engineers, not for bankers and macroeconomists.

Obviously, the knowledge and know-how necessary to safeguard the Fed's innovative payment systems against novel perils and hazards did not come pre-installed in the Fed at the time of the Federal Reserve Act. Thus, a view that

156. See generally Peter Conti-Brown & David A. Wishnick, *Private Markets, Public Options, and the Payment System*, 37 YALE J. ON REG. 380 (2020) (describing the administrative process through which Automated Clearing House was developed); Adam M. Gilbert, Dara Hunt & Kenneth C. Winch, *Creating an Integrated Payment System: The Evolution of Fedwire*, FED. RES. BANK N.Y. ECON. POL'Y REV., July 1997, at 1 (describing the administrative process through which Fedwire was developed).

157. MARCIA STIGUM & ANTHONY CRESCENZI, STIGUM'S MONEY MARKET 491 n.1 (4th ed. 2007).

158. See Ben S. Bernanke, *Clearing and Settlement During the Crash*, 3 REV. FIN. STUD. 133, 146-48 (1990).

159. On criminal intruders, see JIM KUDLINSKI, THE TARNISHED FED: BEHIND CLOSED DOORS: FORTY YEARS OF SUCCESSES, FAILURES, MYSTIQUE, AND HUMOR 81 (2010) (discussing how the FBI provided the Fed with “information on ‘white collar’ crime that had been successfully perpetrated against the commercial-banking industry's wire operations”). On nation-states, see Shane Harris, *Exclusive: Meet the Fed's First Line of Defense Against Cyber Attacks*, FOREIGN POL'Y (Apr. 29, 2014, 12:24 AM), <https://foreignpolicy.com/2014/04/29/exclusive-meet-the-feds-first-line-of-defense-against-cyber-attacks> [<https://perma.cc/QY75-BYC4>].

agency expertise must await statutory authorization does not describe the Fed's uncontroversial expertise in this field. Even so, failure to develop this expertise – despite the significant costs and slow process of development – would have been an abdication of the Fed's mission to protect the banking system and its end users. This is all the truer after the private sector integrated high-speed telecom technology into its range of systems, making it a strategic imperative for the Fed to prevent that same technology from becoming a cause and propagator of systemic crises. Few would have predicted the paramount importance of cybersecurity on the international scene as a result of the technological revolution. But once it began to transpire, the Fed went to work developing the internal agency capacity to take it on.

4. *Services*

The Fed proceeded along one line, in particular, that highlights the value of its idiosyncratic agency design in facilitating the evolution of expertise: it developed and safeguarded its own financial services.

Unlike the classic agency whose products fit neatly into rulemaking, adjudication, guidance, and regulatory suasion, the Fed operates a vast banking empire, a “bureaucracy at the boundary” – in this case, between market and state.¹⁶⁰ In the same way that Amtrak operates the nation's major passenger-train network, and the Postal Service operates the nation's major mail-delivery service, the Fed participates in much of the nation's core financial infrastructure.¹⁶¹ And it has been in service of safeguarding this infrastructure that the Fed has become a major player in the federal administration of cybersecurity policy.

Though the subject matter is technological, the Fed developed its capacity through human resources. This began modestly, with a few dozen personnel hired to develop and operate the Fed's interdistrict telegraph system in 1918.¹⁶² But as computers developed the capacity to overtake human information-processing in the banking industry, the Fed invested heavily in personnel to capitalize on the possibilities. By the 1970s, the Fed not only had teams of technologists

160. O'Connell, *supra* note 12, at 853 n.47 (characterizing the Fed as a boundary bureaucracy). Indeed, many keen observers of this particular boundary as it pertains to the Fed might even dispute the idea of distinguishing between state and market in certain instances.

161. See Conti-Brown & Wishnick, *supra* note 156, at 386-89 (discussing the Fed's payment-system provision); O'Connell, *supra* note 12, at 871, 894-95, 905 (discussing the United States Postal Service and Amtrak).

162. *Fifth Annual Report of the Federal Reserve Board*, FED. RES. BOARD 559 (1918), https://fraser.stlouisfed.org/files/docs/publications/arfr/1910s/arfr_1918.pdf [<https://perma.cc/5NT6-9KLM>].

at the individual Reserve Banks¹⁶³ but also had a specialized team dedicated to long-range telecommunications planning, which developed an early example of a packet-switched network as part of the Division of Data Services.¹⁶⁴ Along with these investments in advanced infrastructure came investments in security and redundancy to prevent costly system outages.¹⁶⁵ Today, the Fed is a large employer of cybersecurity personnel—witness the over one hundred analysts who comprise the National Incident Response Team, dedicated to responding to the highest-impact threats to the Federal Reserve System and the broader financial sector, especially those incidents that involve attempts to penetrate Fed computers.¹⁶⁶ Through this work, the Fed has become an adjunct to the national-security state.¹⁶⁷

Such investments, of course, appear eminently sensible in hindsight. The Fed simply had to hire staff competent to develop and safeguard the technologies being deployed in-house at the regional Reserve Banks,¹⁶⁸ and at the state-of-the-art switching center mentioned above, to keep up with the risks it was creating for its own operations.

These investments were not obvious at the time, nor was their success inevitable. For example, the Board hired McKinsey in the first place to determine whether in fact Fed technologists were doing productive work.¹⁶⁹ These types of developments took shape both through one-off initiatives of the Reserve Banks and through stewardship operating from the Board level. At the bank level, the New York Fed has traditionally been a leader in money-market infrastructure—the core systems designed to support the increasingly instantaneous transactions of high finance.¹⁷⁰ By contrast, the San Francisco Fed was, at least in the last

163. E.g., MCKINSEY & CO., *ASSESSING THE BOARD'S DATA PROCESSING ACTIVITIES* 63 (1973).

164. See J.G. Martin, *Federal Reserve Communication System Planning*, 2 IEEE J. ON SELECTED AREAS COMM. 395, 395-96, 399 (1984).

165. *Id.* at 399-400 (discussing node redundancies and FRCS-80's closed-user group).

166. See Harris, *supra* note 159.

167. Cf. J. Benton Heath, *The New National Security Challenge to the Economic Order*, 129 YALE L.J. 1020, 1080-81 (2020) (proposing that the federal government reintegrate economic order with the national-security state so as to increase oversight for novel national-security threats, while also preserving flexibility for policy refinement as new threats develop).

168. See, e.g., Kenneth D. Garbade, *Origins of the Federal Reserve Book-Entry System*, FED. RES. BANK N.Y. ECON. POL'Y REV., Dec. 2004, at 33, 37.

169. See MCKINSEY & CO., *supra* note 163.

170. See, e.g., *Tri-Party Repo Infrastructure Reform*, FED. RES. BANK N.Y., http://www.newyorkfed.org/banking/tp_r_infr_reform.html [<https://perma.cc/3PNG-5RJ3>] (describing and organizing information regarding the New York Fed's leadership of reform efforts in the market for repurchase agreements).

century, a leader in the development and security of novel retail-payment systems.¹⁷¹

The Fed's development of technical expertise is an instance of institutional formation as part of a series of punctuated equilibria.¹⁷² The highly experimental nature of this approach was not part of a master strategy begun in 1918 or 1963 or at any other time to prepare for foreign attacks on some future version of the financial system. This expertise accreted over time, one project at a time. For instance, the Board has periodically revised and rethought its "platform rules" regarding cybersecurity investments and procedures among the users of its Fed-wire payment- and securities-settlement services.¹⁷³ Similarly, in the late 1990s, the Fed invested heavily in ensuring its systems were ready to avoid the so-called "Y2K problem" that threatened widespread software malfunctions due to then-standardized date formats and the risks associated with altering them in source code.¹⁷⁴ Although some described this as the "biggest nonevent of the century,"¹⁷⁵ getting to the "nonevent" took a significant amount of experimentation and preparation throughout the government. In the Fed's bailiwick, the effort involved a range of "Year 2000 Readiness" task forces that worked to engage in preventative software debugging.¹⁷⁶ It also involved a massive provision of physical cash into the financial system, in a bid to quell consumer concerns and

171. See James McAndrews, *The Automated Clearing House System: Moving Toward Electronic Payment*, BUS. REV., July/Aug. 1994, at 17 (describing the involvement of the San Francisco Fed in the development of the Automated Clearing House system).

172. See Peter Conti-Brown, *Institutions: A Research Program for Law, Macroeconomics, and History*, 83 LAW & CONTEMP. PROBS. 157, 177-79 (2020) (discussing the "new institutional synthesis" model for understanding how to define institutions and their development).

173. See *generally Operating Circulars*, FRBSERVICES, <https://www.frbservices.org/resources/rules-regulations/operating-circulars.html> [<https://perma.cc/L944-5B9P>] (collecting past and present versions of rules governing access to Federal Reserve Bank services, including electronic access rules).

174. See, e.g., *Y2K and Federal Reserve Readiness: Hearing Before the Subcomm. on Fin. Servs. & Tech. of the Comm. on Banking, Hous. & Urban Affairs*, 105th Cong. (1997) (statement of Edward W. Kelley, Jr., Governor, Board of Governors of the Federal Reserve System), <https://www.federalreserve.gov/boarddocs/testimony/1997/19970730.htm> [<https://perma.cc/A55Q-UPXB>].

175. Timothy L. O'Brien, *Banks Stocked up on Cash but Hoarders Stayed Away*, N.Y. TIMES (Dec. 31, 1999), <https://www.nytimes.com/1999/12/31/business/banks-stocked-up-on-cash-but-hoarders-stayed-away.html> [<https://perma.cc/U5MW-CKT4>] ("Up to date, we have seen no increased demand for cash," said Thomas Sladowski, vice president in charge of Chase Manhattan's automated teller machine network. "We're all hoping this will be the biggest non-event of the century.").

176. See *Y2K Readiness and the Banking Industry: Hearing Before the H. Comm. on Banking & Fin. Servs.*, 105th Cong. (1997) (statement of Edward W. Kelley, Jr., Governor, Board of Governors of the Federal Reserve System), <https://www.federalreserve.gov/boarddocs/testimony/1997/19971104.htm> [<https://perma.cc/83W6-33JD>] (describing "the Federal Reserve's efforts to address the Year 2000 computer systems issue").

contain any crisis if it were to occur.¹⁷⁷ A few HSBC ATMs failed to operate well on January 1, 2000, but—due in no small part to the Fed’s preparations—Y2K went from being a prophecy of the end times to a punchline on Saturday Night Live.

At no time throughout this process of expertise development, at least as far as we are aware, was there a serious suggestion that the Fed should stay out of the cybersecurity game. It seems instead that policymakers, Fed personnel, Fed members, and many others simply took for granted that the Fed would evolve with the times to answer the complex problem of managing cyber risk. This reality is entirely consistent with technocratic pragmatism, but it did not happen by accident. The development of expertise required deliberate experimentation in the face of changing circumstances the whole way along.

B. Experimentation and the Lender of Last Resort

Perhaps no function of the Fed has seen both more experimentation and more controversy than its role as lender of last resort. At first blush, this function seems an unlikely candidate for technocratic pragmatism and the normative benefits of bureaucratic experimentation: after all, central banks have functioned in the role of lender of last resort for centuries.¹⁷⁸ It looks much more like essential Fed business, not a frontier for experimental technocratic pragmatism. But this view is ahistorical. In fact, the 2008 and 2020 crises separately show how vital experimentation within legality can be, and why congressional oversight is equally vital to its success. These crises also reveal some of the risks when oversight fails.

1. Emergency Lending Pre-2008

The story of emergency lending prior to 2008 is essentially a story of the abandonment of old models of central banking in favor of new ones. The primary mechanism for lending as a last resort through most of central-banking

177. Dow Jones Newswires, *Fed’s Banks Budget Includes Money for Y2K-Related Currency Demands*, WALL ST. J. (June 25, 1999), <https://www.wsj.com/articles/SB930183857689183884> [<https://perma.cc/NXJ7-BWG6>] (“The Federal Reserve’s preliminary budget blueprint for its regional bank system next year includes money set aside for ‘strategic inventory locations’ to house cash to meet concerns related to year-2000 currency demands.”).

178. For more on the development of the lender of last resort, see generally Michael D. Bordo, *The Lender of Last Resort: Some Historical Insights* (Nat’l Bureau of Econ. Research, Working Paper No. 3011, 1989) (discussing the role of the lender of last resort in preventing bank panics); and Charles W. Calomiris, Marc Flandreau & Luc Laeven, *Political Foundations of the Lender of Last Resort: A Global Historical Narrative* (Columbia Bus. Sch., Research Paper No. 16-51, 2015) (comparing the different historical developments of banks as lenders of last resort).

history before the twentieth century was through the so-called discount window, or the mechanism through which the Fed provides collateralized loans by “discounting” the face value of the collateral.¹⁷⁹ The discount window as originally conceived permitted the Fed to make loans on relatively short maturities to banks that were subject to its supervision through admission to the Federal Reserve System.¹⁸⁰ In 1980, Congress opened the discount window to all depository institutions.¹⁸¹

The Federal Reserve Act as originally conceived established the discount window as a vital mechanism for accomplishing the statutory goal of “furnishing an elastic currency” so as to avoid the many and repeated bank panics that characterized so much of the nineteenth century.¹⁸² Its predominance was based in part on twin notions of the gold standard and the real-bills doctrine, two monetary-policy rules that dictated how the Fed would engage with Fed member banks through its lending facilities.¹⁸³ Time, circumstances, and monetary theories left each behind. Emergency lending still took place throughout the Fed’s history, but by the late 1920s, open-market operations largely displaced discount-window lending as the primary mechanism for providing support to the financial system. Federal deposit insurance, a creature of Congress created after

179. For insights into the discount window and its historical development, see generally Kathryn Judge, *Three Discount Windows*, 99 CORNELL L. REV. 795 (2014), which explains the history of the discount window; Peter Conti-Brown & David Skeel, *Using the Federal Reserve’s Discount Window for Debtor-in-Possession Financing During the COVID-19 Bankruptcy Crisis*, BROOKINGS INSTITUTION 8-12 (2020), <https://www.brookings.edu/wp-content/uploads/2020/07/Conti-Brown-Skeel.pdf> [<https://perma.cc/2XNS-LKW5>], which discusses the history of the discount window; and Menand, *supra* note 18, which discusses the history of the discount window.

180. Federal Reserve Act, Pub. L. No. 63-43, § 13, 38 Stat. 251, 264 (1913).

181. Monetary Control Act, Pub. L. No. 96-221, § 103, 94 Stat. 132, 136 (1980) (codified as amended at 12 U.S.C. § 461(b)(7) (2018)).

182. See generally ELMUS WICKER, *BANKING PANICS OF THE GILDED AGE* (2000) (providing a history of multiple banking panics that preceded the passage of the Federal Reserve Act).

183. See generally BARRY EICHENGREEN, *GOLDEN FETTERS: THE GOLD STANDARD AND THE GREAT DEPRESSION, 1919-1939* (1996) (discussing the evolution of the gold standard in the interwar period); Kathryn Judge, *The Federal Reserve: A Study in Soft Constraints*, 78 LAW & CONTEMP. PROBS. 65, 70-74 (2015) (discussing the origins and application of the real-bills doctrine); Judge Glock on the Riefler-Keynes Doctrine and Monetary Policy During the Great Depression, MERCATUS CTR. (Sept. 2, 2019), <https://www.mercatus.org/bridge/podcasts/09022019/judge-glock-riefler-keynes-doctrine-and-monetary-policy-during-great> [<https://perma.cc/Y4LN-A3PD>] (examining the role of the real-bills doctrine and the gold standard in perpetuating the Great Depression).

the banking panics of 1933, also rendered the need for the discount window much less acute.¹⁸⁴

Fascinatingly, where open-market operations displaced the discount window, the need for emergency lending of the type that the discount window imagined largely faded, too.¹⁸⁵ The conception of the Fed as the lender of last resort gave way to the image of the Fed as the guarantor of market liquidity and financial stability. The age of the macroeconomic regulator – not the banking lender – had arisen.

2. *Emergency Lending in the 2008 Crisis*

The discount window's supposed obsolescence was utterly refuted in the 2008 crisis. The first moves at more aggressive experimentation in emergency lending came in the late summer of 2007. During what was then viewed as the subprime mortgage crisis, the Fed opened a new Term Discount Window Program meant to reassure banks of discount-window lending beyond the usual overnight maturity.¹⁸⁶ It did not work. "The banks' concern was that their recourse to the discount window, if it became known, might lead market participants to infer weakness – the so-called stigma problem."¹⁸⁷ In December 2007, the Fed experimented with a new discount-window facility: the Term Auction Facility (TAF). The facility permitted the Fed to auction loans of longer maturities "to a broader range of counterparties and against a broader range of collateral" than it could through open-market operations or through conventional discount-window lending.¹⁸⁸

¹⁸⁴. See Christopher W. Shaw, *"The Man in the Street Is for It": The Road to the FDIC*, 27 J. POL'Y HIST. 36, 49–51 (2015) (detailing the history of the passage of Federal Deposit Insurance under the 1933 Banking Act).

¹⁸⁵. One very important exception is the tumult of the 1980s, during which monetary policy pulled back in a fight against inflation and lending policy pushed forward to help the banks on the other side of those interest-rate bets. For more of this history, see LAWRENCE J. WHITE, *THE S&L DEBACLE: PUBLIC POLICY LESSONS FOR BANK AND THRIFT REGULATION* (1991).

¹⁸⁶. Ben S. Bernanke, Chair, Bd. of Governors of the Fed. Reserve Sys., Speech at the Federal Reserve Bank of Richmond 2009 Credit Markets Symposium in Charlotte, North Carolina: The Federal Reserve's Balance Sheet (Apr. 3, 2009), <https://www.federalreserve.gov/newsevents/speech/bernanke20090403a.htm> [<https://perma.cc/MNR9-4S8Y>] (detailing the defects of the Term Discount Window Program which eventually led to the Term Auction Facility (TAF)).

¹⁸⁷. *Id.*

¹⁸⁸. *Term Auction Facility (TAF)*, BOARD GOVERNORS FED. RES. SYS. (Feb. 12, 2016), <https://www.federalreserve.gov/regreform/reform-taf.htm> [<https://perma.cc/39CH-5PEX>]. Note that the Fed's description of the TAF included the qualification that such loans were given to

The TAF was a largely successful experiment in two important ways. First, the Fed did not wait for reluctant banks to come to borrow: it offered funding at fixed auctions to all interested depository institutions. This resolved the genuine stigma associated with discount-window lending¹⁸⁹ because the process was rendered mostly anonymous and “the three-day period between the auction and auction settlement suggest[ed] that the facility’s users [were] not relying on it for acute funding needs on a particular day.”¹⁹⁰

Had the Fed’s emergency lending experiments concluded with the TAF, the 2007 crisis would provide an example of technocratic pragmatism at its finest, with very little downside: the Fed took existing legal authority and applied it in new ways to provide liquidity to banks it supervised without introducing questions of legitimacy or legality in the process. The subprime-mortgage crisis, however, quickly spiraled into the global financial crisis, and the Fed’s emergency lending launched into a new phase of broad experimentation: the use of the until-then rarely discussed 13(3) emergency lending power. It was first invoked to create facilities to support JP Morgan’s acquisition of Bear Stearns, a nondepository institution. From there, 13(3) became the Fed’s primary emergency lending authority, eventually totaling \$700 billion in outstanding loans by November 2008.¹⁹¹

The details of the Fed’s emergency lending in 2008 under 13(3) are well-rehearsed;¹⁹² we need not belabor them here. What is striking, from the perspective of technocratic pragmatism, is how much experimentation the Fed undertook, including in the face of protests about the Fed’s legal authority,

institutions in “generally sound financial condition.” *Id.* Evidence disputes this notion. See generally Allen N. Berger, Lamont K. Black, Christa H.S. Bouwman & Jennifer Dlugosz, *Bank Loan Supply Responses to Federal Reserve Emergency Liquidity Facilities*, 32 J. FIN. INTERMEDIATION 1, 2, 6–12 (2017) (examining the kinds of firms that took advantage of TAF lending, including Proficio Bank, which used the discount window and the TAF to fund fully 48% of its assets in a single day).

189. For empirical evidence that the TAF solved the discount-window-stigma problem, see Olivier Armantier, Eric Ghysels, Asani Sarkar & Jeffrey Shrader, *Discount Window Stigma During the 2007–2008 Financial Crisis*, 118 J. FIN. ECON. 317, 321–32 (2015); and Adam Ashcraft, James McAndrews & David Skeie, *Precautionary Reserves and the Interbank Market*, 43 J. MONEY, CREDIT & BANKING 311, 339–46 (2011).

190. Bernanke, *supra* note 186.

191. Parinitha Sastry, *The Political Origins of Section 13(3) of the Federal Reserve Act*, FED. RES. BANK N.Y. ECON. POL’Y REV., Sept. 2018, at 1, 2, 4 fig.1.

192. See, e.g., *Turmoil in U.S. Credit Markets: Recent Actions Regarding Government-Sponsored Entities, Investment Banks, and Other Financial Institutions: Hearing Before the S. Comm. on Banking, Hous. & Urban Affairs*, 110th Cong. 89 (2008) (statement of Ben S. Bernanke, Chair, Board of Governors of the Federal Reserve System); Alexander Mehra, *Legal Authority in Unusual and Exigent Circumstances: The Federal Reserve and the Financial Crisis*, 13 U. PA. J. BUS. L. 221, 234–38 (2010); Sastry, *supra* note 191, at 1–5.

accountability, and expertise. Even Volcker, a former Chair, was unsparing in his criticism.¹⁹³

When the dust settled, the 2008-2009 experience of emergency lending showed some of the strengths of technocratic pragmatism and some of its key weaknesses. The Fed's storied history as a central bank—including its history of emergency lending—had atrophied in the face of altering macroeconomic conditions and intellectual currents that had established deposit insurance and open-market operations as the primary levers of financial stability. The crisis called forth a burst of creativity that showed the Fed grappling with new challenges, albeit years too late. Despite the wide commentary on Bernanke as the man of the hour, trained in thinking through crisis response as a scholar of the Great Depression, in fact there was not much of a playbook for the Fed to follow in the face of these kinds of interventions. The differences between the Great Depression and the 2008 financial crisis were significant enough that they opened up new frontiers that Bernanke's academic expertise was not suited to address.¹⁹⁴ The strategy had to be invented; necessity and a willingness to experiment became the parents of these inventions.

3. *Emergency Lending After COVID-19*

Technocratic pragmatism posits that the development of expertise accretes over time, based on notions of punctuated equilibria in institutional development. A corollary of this proposition is that new experimental tools in the last crisis become the baseline response in the next one.¹⁹⁵ So it was that the Fed's response to the very next recession following the 2008 crisis—which began in March 2020, associated with the global COVID-19 pandemic—immediately relied upon the suite of tools developed to combat the 2008 crisis and moved in favor of more experimentation thereafter.

The Fed's programs are indeed dizzying and reflect a massive balance-sheet commitment. Figure 2 presents the rise in the Fed's balance sheet in 2020:

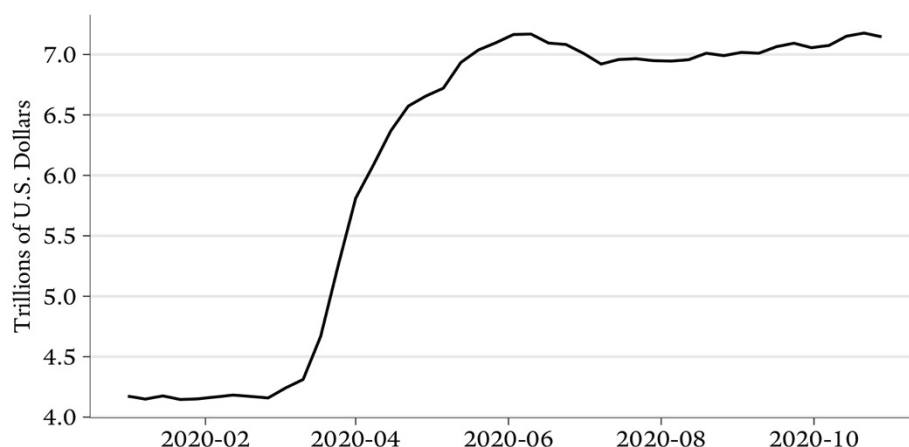
193. See *supra* text accompanying note 17.

194. For some of the more effusive commentaries on Ben Bernanke's heroism, see DAVID WESSEL, IN FED WE TRUST: BEN BERNANKE'S WAR ON THE GREAT PANIC 1-8 (2009); and Michael Grunwald, *Person of the Year: Ben Bernanke*, TIME MAG. (Dec. 16, 2009), http://content.time.com/time/specials/packages/printout/0,29239,1946375_1947251_1947520,00.html [<https://perma.cc/VH7D-BUYT>], which states: "Professor Bernanke of Princeton was a leading scholar of the Great Depression. He knew how the passive Fed of the 1930s helped create the calamity—through its stubborn refusal to expand the money supply and its tragic lack of imagination and experimentation."

195. Our thanks to Katharina Pistor for an illuminating conversation on this point.

FIGURE 2.

THE BALANCE SHEET OF THE FEDERAL RESERVE, JANUARY 2020 TO OCTOBER 28, 2020



The Fed has fired on all cylinders in response to the 2020 crisis, doing so in the language of technocratic pragmatism in the face of complex problems.¹⁹⁶ It dropped interest rates to zero almost immediately¹⁹⁷ and offered forward guidance that such rates will not be moved for the foreseeable future¹⁹⁸: in Chair Powell's words, the Federal Open Market Committee is "not even thinking about thinking about raising interest rates."¹⁹⁹ It pushed banks, including the eight largest, to borrow from the discount window.²⁰⁰ It relaunched a host of 2008-

196. For useful summaries of the Fed's COVID-19 responses, see generally Jeffrey Cheng, Dave Skidmore & David Wessel, *What's the Fed Doing in Response to the COVID-19 Crisis? What More Could It Do?*, BROOKINGS INSTITUTION (June 17, 2020), <https://www.brookings.edu/research/fed-response-to-covid19> [<https://perma.cc/T4EP-WAGX>]; and Menand, *supra* note 18.

197. Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve Issues FOMC Statement (Mar. 15, 2020), <https://www.federalreserve.gov/monetarypolicy/files/monetary20200315a1.pdf> [<https://perma.cc/S6TM-PXEL>].

198. Press Release, Bd. of Governors of the Fed. Reserve Sys., Federal Reserve issues FOMC statement (Apr. 29, 2020), <https://www.federalreserve.gov/monetarypolicy/files/monetary20200429a1.pdf> [<https://perma.cc/7JP8-AWRL>].

199. Powell: 'We're Not Even Thinking About Thinking About Raising Rates,' WALL ST. J. (June 10, 2020, 4:22 PM), <https://www.wsj.com/video/powell-were-not-even-thinking-about-thinking-about-raising-rates/oCo20333-947B-411F-912E-6EF76EFE18Co.html> [<https://perma.cc/YY4E-FMDA>].

200. Liz Hoffman & David Benoit, *Shedding 2008 Stigma, Biggest U.S. Banks Borrow Straight from the Fed*, WALL ST. J. (Mar. 16, 2020, 10:34 PM ET), <https://www.wsj.com/articles/shedding-2008-stigma-biggest-u-s-banks-borrow-straight-from-the-fed-11584412394> [<https://perma.cc/98PN-T9F5>] ("JPMorgan Chase & Co., Bank of America Corp. and six other big banks

era programs to provide market liquidity to a large variety of sectors.²⁰¹ It became a lender to major U.S. corporations – not through primary dealers, but as direct purchasers of corporate debt from companies such as Apple and Google.²⁰² It also intervened in the secondary markets for such debt, including exchange-traded funds and the debt of those corporations whose credit has fallen as a result of the crisis.²⁰³ Finally, it became a lender to states and municipalities²⁰⁴ and, through banks, to small- and medium-sized firms.²⁰⁵

The defense of these actions, by Chair Powell in May 2020, illustrates the Fed's self-conception relative to the pandemic crisis. The Fed "really need[ed] to

said late Monday they had tapped the Federal Reserve's pool, known as the discount window. People briefed on the move said the borrowings were relatively small and weren't used to address any critical funding shortfalls.").

201. On March 17, 2020, the Fed launched the new Primary Dealer Credit Facility. Press Release, Bd. of Governors of the Fed Reserve Sys., Federal Reserve Board Announces Establishment of a Primary Dealer Credit Facility (PDCF) to Support the Credit Needs of Households and Businesses (Mar. 17, 2020), <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200317b.htm> [<https://perma.cc/B74N-2WTZ>]. One day later came the new Money Market Mutual Fund Liquidity Facility. Press Release, Bd. of Governors of the Fed Reserve Sys., Federal Reserve Board Broadens Program of Support for the Flow of Credit to Households and Businesses by Establishing a Money Market Mutual Fund Liquidity Facility (MMLF) (Mar. 18, 2020), <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200318a.htm> [<https://perma.cc/UYX7-2NBN>].
202. See *Primary Market Corporate Credit Facility*, FED. RES. BANK N.Y. (Apr. 9, 2020), <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200409a5.pdf> [<https://perma.cc/4H49-TA6H>] ("The Facility may purchase eligible corporate bonds as the sole investor in a bond issuance. Eligible corporate bonds must meet each of the following criteria at the time of bond purchase by the Facility: (i) issued by an eligible issuer; and (ii) have a maturity of 4 years or less.").
203. See *Secondary Market Corporate Credit Facility*, FED. RES. BANK N.Y. (June 28, 2020), <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200728a1.pdf> [<https://perma.cc/CH88-AN29>] ("The Facility may purchase corporate bonds that, at the time of purchase by the Facility: (i) were issued by an eligible issuer; (ii) have a remaining maturity of 5 years or less; and (iii) were sold to the Facility by an eligible seller. . . . The Facility also may purchase U.S.-listed ETFs . . .").
204. See *Municipal Liquidity Facility*, FED. RES. BANK N.Y. (June 3, 2020), <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200603a1.pdf> [<https://perma.cc/UYD5-CZ72>] ("Facility: The Municipal Liquidity Facility ('Facility'), which has been authorized under Section 13(3) of the Federal Reserve Act, will support lending . . . to U.S. state[s] and the District of Columbia, . . . U.S. cit[ies], [and] . . . U.S. count[ies] . . .").
205. See *Main Street Lending Program*, BOARD GOVERNORS FED. RES. SYS. (July 15, 2020), <https://www.federalreserve.gov/monetarypolicy/mainstreetlending.htm> [<https://perma.cc/7APT-7P3B>] ("The Federal Reserve established the Main Street Lending Program (Program) to support lending to small and medium-sized businesses that were in sound financial condition before the onset of the COVID-19 pandemic.").

be using our tools to their fullest extent,” he said.²⁰⁶ “[I]t would be very hard to explain to the public why we held back from . . . doing that at a time when we saw a 50-year low in unemployment turn into an 80-90 year high in unemployment in the space of 60 days.”²⁰⁷ He was aware of what this experimentation meant in terms of its departure from precedent: “We crossed a lot of red lines that had not been crossed before,” but such is the nature of the crisis.²⁰⁸ “You do that and you figure it out afterward.”²⁰⁹

To date, many have celebrated the Fed’s functional efficiency during the COVID-19 crisis.²¹⁰ Yet, questions about its legal legitimacy remain unresolved. David Zaring, for instance, states that the Fed “ha[s] undoubtedly been effective,” but that it has been so “on the basis of little legal authority”²¹¹ And Menand views much of the emergency lending through section 13(3) of the Federal Reserve Act as at least “being in tension with” several provisions of the same statute.²¹² But we believe that the Fed was within its authority to structure its COVID-19 lending as it did.²¹³ Further, even if the Fed pushed the bounds of what the statute could bear, it is clear that Congress has ratified the Fed’s reading.²¹⁴

206. Transcript: Fed Chief Jerome Powell Q&A with Alan Blinder, WALL ST. J. (May 29, 2020, 3:12 PM ET), <https://www.wsj.com/articles/transcript-fed-chief-jerome-powell-q-a-with-alan-blinder-11590779548> [<https://perma.cc/2LTG-FN3P>].

207. *Id.*

208. *Id.*

209. *Id.*

210. See, e.g., Josh Barro, *The World’s Best Bureaucrat*, N.Y. MAG: INTELLIGENCER (Oct. 27, 2020), <https://nymag.com/intelligencer/article/jerome-powell-federal-reserve-profile.html> [<https://perma.cc/7VD5-G625>]; David Ignatius, Opinion, *The Fed’s Success Is a Lesson in American Leadership*, WASH. POST (Apr. 30, 2020, 6:46 PM EDT), https://www.washingtonpost.com/opinions/the-fed-demonstrates-american-leadership-at-its-best/2020/04/30/c8e3b7fe-8b1b-11ea-9dfd-990f9dcc71fc_story.html [<https://perma.cc/E67Y-GQC2>].

211. David Zaring, *The Government’s Economic Response to the COVID Crisis* 58 (Aug. 5, 2020) (unpublished manuscript), <https://ssrn.com/abstract=3662049> [<https://perma.cc/W2FL-VVCV>].

212. See Menand, *supra* note 18, at 56.

213. Contra Menand’s reading of section 13(3), we view the requirement that all lending “provid[e] liquidity to the financial system” as a check on firm-specific emergency lending, not on lending that supports the financial position of firms in the real economy. See Menand, *supra* note 18, at 29-30.

214. See *id.* at 55-56.

C. *The Future of Pragmatism: Climate Change*

Perhaps nowhere are the stakes for technocratic pragmatism higher—both in terms of the need for experimentation and the need for accountability—than in relation to climate change. The threats climate change poses to the financial system—and to the broader economy, and to society—are not as salient to today’s financial regulators as cyber risk and the ongoing consequences of the COVID-19 pandemic. But their potential upheavals are far greater in size and scope.²¹⁵ From the risk of worldwide supply-chain destabilization, to the potential devaluation of oil and gas assets by a congressional come-to-green moment, climate change has the character of a “gray rhino”—lumbering slowly, but still a visible and mighty threat.²¹⁶

Crucially for our purposes, climate change poses a direct threat to the fulfillment of the Fed’s main statutory mandates. These include the threat to individual bank safety and soundness posed by climate risk to borrowers; the threat of systemic instability posed by correlated defaults and economic crises; and the long-run threat to monetary-policy goals posed by the potential destabilization of the very foundations of the global economic order. In this sense, the Fed’s ability to intervene to prevent some of the worst potential outcomes of global climate change or mitigate those effects that do come is already part of the Fed’s essential business.

That said, technocratic pragmatism can shape the Fed’s response to these risks in two ways. First, the Fed has not yet developed the expertise needed to respond to some of these effects, even as they affect the Fed’s core responsibilities. And second, the Fed can already participate, within its statutory framework, in developing expertise to tackle these risks even at the perimeter of its mandates.

Despite this potential for Fed participation in tackling global climate change and despite the magnitude and salience of these challenges to the core missions assigned to the Fed by Congress, skeptics currently advise the Fed against overt

215. For contributions to the emerging literature on climate change and its interaction with the financial system, see Madison Condon, *Externalities and the Common Owner*, 95 WASH. L. REV. 1 (2020); Jill E. Fisch, *Making Sustainability Disclosure Sustainable*, 107 GEO. L.J. 923 (2019); Emily Hammond & Jim Rossi, *Stranded Costs and Grid Decarbonization*, 82 BROOK. L. REV. 645 (2017); Matthew Razzano, *Going Green: The Federal Reserve’s Authority to Combat Climate Change*, HARV. ENVTL. L. REV. ONLINE (Apr. 11, 2020); Steele, *supra* note 3; and Christina Parajon Skinner, *Central Banks and Climate Change* (July 2020) (unpublished manuscript), <https://papers.ssrn.com/abstract=3703142> [<https://perma.cc/BHM9-J5EA>].

216. See MICHELE WUCKER, *THE GRAY RHINO: HOW TO RECOGNIZE AND ACT ON THE OBVIOUS DANGERS WE IGNORE* 7 (2016) (defining a “gray rhino” as “a highly probable, high-impact threat” that differs in taxonomy from the proverbial elephant in the room and the black swan alike, and defining climate change as exemplary of the category). On the potential macroeconomic consequences of climate change, see, for example, Condon, *supra* note 215, at 44–47.

engagement with climate change.²¹⁷ Scholars have only begun to examine these arguments in the legal literature, but these arguments are front and center in the pages of the financial press and indeed within the Fed itself.

A technocratic-pragmatic Fed must take these critics' concerns seriously, but avoid retreating into narrowness. Seriousness is required because if these critics succeed, it could threaten the Fed's legitimacy beyond the COVID-19 pandemic.²¹⁸ The path to avoiding narrowness should include heavy experimentation in the Fed's discursive and supervisory roles, and lesser experimentation (absent expertise) in its coercive and monopolistic roles.

1. *The Fed's Green Avoidance*

The first task for a technocratic-pragmatist Fed is to ensure the focus of experimentation is consistent with statutory goals and mandates. So much is straightforward in the case of climate change. Combating the baleful effects of global climate change already touches on the Fed's essential business in its microprudential, macroprudential, and monetary-policy objectives. Its microprudential responsibilities include ensuring the safety and soundness of the individual financial institutions it regulates and supervises.²¹⁹ Its macroprudential responsibilities require the Fed to ensure the broader stability of the financial system.²²⁰ In this regard, Congress has given the Fed leading responsibility to reduce the systemic risk posed by a wide range of financial entities and activities and to prepare to engage in swift and effective financial-crisis containment.²²¹ Its monetary-policy objectives, as mentioned in Section I.B, require it to

217. Christina Skinner disagrees, at least in part, arguing that "the Fed lacks a solid legal basis for seeking to proactively make the financial system greener." Skinner, *supra* note 215, at 1. She argues that the Fed's best path is to lean on what we term "discursive" authority, with a possible extension into "supervisory" considerations, narrowly. *Id.* at 6. Although our emphases differ—we incline more toward Fed experimentalism and the development of relevant expertise to address climate change—the legal outcome is not appreciably different.

218. Transcript: Fed Chief Jerome Powell Q&A with Alan Blinder, *supra* note 206.

219. For a broader discussion of the Fed's approach to microprudential and macroprudential regulation and supervision, see *Federal Reserve System: Purposes and Functions*, BOARD GOVERNORS FED. RES. SYS. 57-58 (10th ed. 2016), https://www.federalreserve.gov/aboutthefed/files/pf_complete.pdf [<https://perma.cc/VEW5-BVK6>].

220. *Id.*

221. See Anna Gelpern, *Financial Crisis Containment*, 41 CONN. L. REV. 1051, 1053, 1066-67 n.55 (2009) (discussing the broad powers of the Fed to engage in emergency lending under Section 13(3) of the FRA, even if they have not yet been fully exercised as proposed by some scholars); Jeremy C. Kress, Patricia A. McCoy & Daniel Schwarcz, *Regulating Entities and Activities: Complementary Approaches to Nonbank Systemic Risk*, 92 S. CAL. L. REV. 1455, 1472-80 (2019) (discussing Congress's broad delegation to the Financial Stability Oversight Council, on which the Fed sits, to designate entities as systemically important).

maintain maximum employment, stable prices, and moderate long-term interest rates.²²²

In relation to the Fed's microprudential responsibilities, the climate threat operates directly at the level of bank assets. Taken in the aggregate, bank lending to corporate and individual borrowers depends existentially on the expectation of secular growth—or at least the avoidance of secular decay or crisis.²²³ When crisis comes, it often takes banks down. From the 1973 oil crisis to the ongoing COVID-19 pandemic, financial history is punctuated by events where shocks to the real economy trigger stress to bank balance sheets.²²⁴ If left unaddressed at a global level, experts predict that climate change is likely to create a wide range of such real-economy shocks. These include an increasing severity and regularity of extreme weather events, disruptions to ecosystems that undermine the growing concerns of myriad supply chains, and even the political destabilization attendant to the migration of climate-change refugees.²²⁵ Any one of these possibilities could render the solvency of multitudes of bank debtors precarious. In turn, any one pathway to a rising tide of debtor defaults could place bank safety

222. Federal Reserve Act, Pub. L. No. 63-43, § 2, 38 Stat. 251, 251 (1913).

223. See, e.g., Diana Bonfim, *Credit Risk Drivers: Evaluating the Contribution of Firm Level Information and of Macroeconomic Dynamics*, 33 J. BANKING & FIN. 281, 283-88 (2009) (exploring the relationship between macroeconomic growth and bank lending, as expressed through overdue credit, heightened credit risks, and other indicators).

224. See generally CHARLES P. KINDLEBERGER & ROBERT Z. ALIBER, *MANIAS, PANICS AND CRASHES: A HISTORY OF FINANCIAL CRISES* (6th ed. 2011) (providing a broad history of financial crises); Howell E. Jackson & Steven L. Schwarcz, *Protecting Financial Stability: Lessons from the Coronavirus Pandemic* 2-3 (Duke Law Sch. Pub. Law & Legal Theory Series, Paper No. 2020-39, 2020), <https://ssrn.com/abstract=3644417> [<https://perma.cc/G797-SLMW>] (discussing the real origins of the COVID-19 economic crisis versus the 2008 crisis); Lael Brainard, Governor, Fed. Reserve Sys. Bd. of Governors, *Why Climate Change Matters for Monetary Policy and Financial Stability*, Address at “The Economics of Climate Change” Research Conference Sponsored by the Federal Reserve Bank of San Francisco (Nov. 8, 2019), <https://www.federalreserve.gov/newsevents/speech/brainard20191108a.htm> [<https://perma.cc/8XXH-46DA>] (noting the real shocks of climate change and financial stability, and explaining that “[a]lthough there is substantial uncertainty surrounding how or when shifts in asset valuations might occur, we can begin to identify the factors that could propagate losses from natural disasters, energy disruptions, and sudden shifts in the value of climate-exposed properties. As was the case with mortgages before the financial crisis, correlated risks from these kinds of trends could have an effect that reaches beyond individual banks and borrowers to the broader financial system and economy. As with other financial stability vulnerabilities arising from macroeconomic risks, feedback loops could develop between the effects on the real economy and those on financial markets”).

225. See generally *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation: Special Report of the Intergovernmental Panel on Climate Change*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (2012), https://www.ipcc.ch/site/assets/uploads/2018/03/SREX_Full_Report-1.pdf [<https://perma.cc/NZ6V-V9XN>] (discussing these risks and other potential costs of adapting to climate change).

and soundness at risk.²²⁶ Climate change similarly threatens the Fed's performance of its macroprudential financial-stability mandate. The hallmark of climate change is that it poses a global, correlated set of threats to our current forms of economic production.²²⁷ Accordingly, its effects on individual bank debtors and balance sheets are also, under multiple possible scenarios, likely to be correlated and systemic. Consider, for instance, the possibility of a wave of property-lending losses driven by mass migration away from coastal cities in fear of rising sea levels. If any single systemically important financial institution were exposed to losses on loans or structured products related to regionally specific risks, the Fed would be dealing with the makings of a potentially systemic crisis. Separately, consider what might happen if Congress decides to mitigate the impending rise of the seas through an effective program of carbon regulation. Though undoubtedly welcome at the societal level, such a program could be devastating to the interests of incumbent energy industries. Many of the world's largest firms could quickly be regulatorily required to strand vast stores of carbon assets in the ground.²²⁸ Preventing and containing the financial fallout of these threats would pose a deep challenge to the Fed's responsibility to maintain financial stability.

In relation to the Fed's monetary-policy framework, climate change's threat profile is protean. On the one hand, shocks caused by climate change could serve to deepen the risks of secular stagnation. On the other hand, it is also possible that a massive shift toward a decarbonized future could employ many and drive gross-domestic-product growth for decades as we chart a path to transition.²²⁹ These possibilities – and a wide range of other imagined futures – will play out over decades and could lead to a massive restructuring of the economy. Much is unknown about this future, including the expertise that will be required to address it.

Despite these threats, at present, the Fed has shied off from integrating climate considerations into its regulatory, supervisory, and monetary-policy work.

226. See generally Steele, *supra* note 3, at 6-8 (outlining the real financial risks posed by climate change, including an increase in the frequency of banking crises). To take just one pathway, as recent empirical research has shown, natural disasters reliably not only impair the performance of the banking sector, but also lead to bank failures. See Jeroen Klomp, *Financial Fragility and Natural Disasters: An Empirical Analysis*, 13 J. FIN. STABILITY 180, 186 (2014) (“[W]e find that large-scale meteorological and geophysical disasters have a significant negative impact on the distance to default of the banking sector.”).

227. See Lazarus, *supra* note 22, at 1160.

228. On the potential effects of a green transition, see, for example, Shelley Welton & Joel Eisen, *Clean Energy Justice: Charting an Emerging Agenda*, 43 HARV. ENVTL. L. REV. 307 (2019); and Ann M. Eisenberg, *Just Transitions*, 92 S. CAL. L. REV. 273 (2019).

229. See Adam Tooze, *Why Central Banks Need to Step Up on Global Warming*, FOREIGN POL’Y (July 20, 2019), <https://foreignpolicy.com/2019/07/20/why-central-banks-need-to-step-up-on-global-warming> [<https://perma.cc/F7JU-236Z>].

Regarding microprudential policy, climate risks are currently absent from explicit review under Fed regulations. Banks have no specific disclosure, modeling, or mitigation responsibilities regarding climate risks. Nor are climate risks or green characteristics integrated at all into the risk-weighting framework for bank capital or the governing framework for bank-supervisory processes.²³⁰

Climate change has not made any appearance in the Fed's macroprudential policy framework, either. Nothing in the heightened regulatory or supervisory frameworks for systemically important financial institutions and utilities reflects a climate-driven threat, other than basic weather-event preparedness for operations systems.²³¹ Climate-related scenarios have also been notably absent from the Fed's annual Dodd-Frank Act stress tests and, according to Fed officials, will remain so. This choice by the Fed diverges significantly from Europe, where climate-related stress tests have been introduced in the United Kingdom in 2019 and in the Eurozone in 2020.²³² But this reflects the reality that the Fed has largely shied away from directly addressing the prospect that climate change might one day destabilize individual banks and the financial system as a whole.

Fed officials have also rejected out of hand any inclusion of climate-change considerations in near-term monetary policy. This has manifested in two ways. The first has to do with the modeling and analysis that informs Fed monetary-policy decisionmaking. At present, Fed officials have suggested that climate-driven economic circumstances currently do not play a role in the macroeconomic analyses that drive their monetary-policy decisionmaking.²³³ Second, they have rejected calls, growing worldwide, for the adoption of green criteria for financial assets eligible for purchase by the Fed through its open-market operations and discount window.²³⁴

230. See *Fed Official: No Near-Term Plans for Climate Risk Weights, Stress Tests*, AM. BANKERS ASS'N RISK & COMPLIANCE (Jan. 17, 2020), <https://bankingjournal.aba.com/2020/01/fed-official-no-near-term-plans-for-climate-risk-weights-stress-tests> [https://perma.cc/BHV7-MCS7] (quoting Federal Reserve System General Counsel Mark Van Der Weide).

231. See *id.*

232. Razzano, *supra* note 215; Tooze, *supra* note 229.

233. See *Fed Official: No Near-Term Plans for Climate Risk Weights, Stress Tests*, *supra* note 230; Glenn D. Rudebusch, *Climate Change and the Federal Reserve*, FED. RES. BANK S.F. 4 (Mar. 25, 2019), <https://www.frbsf.org/economic-research/publications/economic-letter/2019/march/climate-change-and-federal-reserve> [https://perma.cc/5W2L-VU5Q] ("While the effects and risks of climate change are relevant factors for the Fed to consider, the Fed is not in a position to use monetary policy actively to foster a transition to a low-carbon economy.").

234. See *Fed Official: No Near-Term Plans for Climate Risk Weights, Stress Tests*, *supra* note 230; Rudebusch, *supra* note 233, at 4 ("'[G]reen' quantitative easing is an option for some central banks but not for the Fed, which by law can only purchase government or government agency debt.").

Taken together, the Fed's policy decisions across bank regulation and supervision, financial stability, and monetary policy appear to amount to a strategy of green avoidance, but it is important to interpret the Fed's strategy through the schematic presented in Part I. The Fed is right to hesitate for monetary policy and regulation, where its authority is most coercive and monopolistic, unless and until it is confident in a newfound body of expertise and competence. But the Fed is wrong to withdraw from the field where its authority is discursive or supervisory. The Fed should be working hard at the development of relevant expertise where doing so is least disruptive to those who cannot avoid the downside effects of its experimentation; it should be waiting until its authority and expertise are better developed where it is most disruptive.

There are some promising, recent signs that the Fed's usual technocratic pragmatism is stirring in its discursive approach to climate change. The Fed began experimenting with climate-change research, particularly championed by the Federal Reserve Bank of San Francisco. In March 2019, the San Francisco Fed published research nudging the Fed forward in its engagement.²³⁵ In November 2019, the San Francisco Fed convened a conference on "The Economics of Climate Change,"²³⁶ publishing research by nearly forty academics and practitioners, that, to quote the *New York Times's* coverage of the conference, "presented in precise language a dire picture of the risks of a changing climate," including a warning "that local governments don't have the means to deal with them."²³⁷ Despite this important step, the Fed still lags behind the efforts by other central banks: it has not moved beyond these purely discursive, research-oriented efforts.²³⁸

235. Rudebusch, *supra* note 233, at 4 ("For the Fed, the volatility induced by climate change and the efforts to adapt to new conditions and to limit or mitigate climate change are also increasingly relevant considerations. Moreover, economists, including those at central banks, can contribute much more to the research on climate change hazards and the appropriate response of central banks.").

236. To access the research discussed at this November Conference, see *The Economics of Climate Change*, FED. RES. BANK S.F. (Nov. 8, 2019), <https://www.frbsf.org/economic-research/events/2019/november/economics-of-climate-change> [<https://perma.cc/5CB8-WEP9>].

237. Christopher Flavelle, *Bank Regulators Present a Dire Warning of Financial Risks from Climate Change*, N.Y. TIMES, (Oct. 17, 2019), <https://www.nytimes.com/2019/10/17/climate/federal-reserve-climate-financial-risk.html> [<https://perma.cc/8YS8-PQ8U>].

238. See, e.g., Jeanna Smialek, *Why the Fed, Long Reticent, Has Started to Talk About Climate Change*, N.Y. TIMES (Nov. 8, 2019), <https://www.nytimes.com/2019/11/08/business/economy/federal-reserve-climate-change> [<https://perma.cc/QR9M-7PBE>] (noting the Fed's recent discussion of joining a network of "40 global central banks that was created in 2017 to promote discussions about climate-related financial and macroeconomic issues").

2. *Three Justifications*

What explains the Fed's inability to move beyond a purely discursive approach to climate change? Three justifications are at play. First, a range of voices have argued for Fed nonengagement with climate-related issues on the grounds that the Fed presently lacks relevant expertise and thus has no business wading into questions it does not understand. Because climate considerations are foreign to Fed deliberations, these critics suggest, they ought to remain so. "Could one be permitted to ask," one commentator has opined, what central banks like the Fed "know about the physics of climate change or the industrial and policy details of how to respond to the challenge? Would the answer be 'almost nothing'? . . . [C]entral banks have no particular expertise in the field."²³⁹

Of course, technocratic pragmatism recognizes the hollowness of that argument. Expertise is not created by legislative fiat, but through a process of development of expertise in the face of exigency. The Fed should reject this critique out of hand.

Second, critics point to the importance of a narrow policy mandate for the Fed, especially with respect to the Fed's financial stability and monetary-policy mandates. Under the financial-stability umbrella, Fed officials have so far rejected calls for both climate-aware risk weighting and stress testing on the ground that adopting them would require attention to "a long-term horizon" that exceeds the horizon for which bank supervision and regulation are designed.²⁴⁰

Finally, critics and officials point to legal restrictions. Regarding monetary policy, the main site of controversy has been over calls for green priorities in asset-purchasing programs—so-called "Green Quantitative Easing" whereby asset purchases would emphasize carbon neutrality or other firms aimed at combatting or reversing the effects of climate change.²⁴¹ The Fed rejects the idea. In so doing, one official has asserted that it would both run afoul of legal restrictions that limit open-market purchases to government debt and also would fail to serve the Fed's dual statutory mandate of price stability and full employment.²⁴² On those grounds, he concluded, green monetary policy may be "an option for some central banks but not for the Fed."²⁴³

²³⁹. John Dizard, *Central Banks Have No Expertise in Climate Change*, FIN. TIMES (Oct. 25, 2019), <https://www.ft.com/content/b9c3d9a4-ba9e-454e-be3a-78921e72e257> [https://perma.cc/2357-GK6C].

²⁴⁰. See *Fed Official: No Near-Term Plans for Climate Risk Weights, Stress Tests*, *supra* note 230.

²⁴¹. On the idea of Green Quantitative Easing, see Razzano, *supra* note 215.

²⁴². See Rudebusch, *supra* note 233, at 4.

²⁴³. See *id.*

Presently, these factors lead to a de facto policy of nonengagement beyond minimal discursive functions, and even these are very recent. While a number of Fed officials have recently pushed to integrate climate considerations more fully into a broad range of Fed policy arenas, they are fighting institutional conservatism and deep inertia.²⁴⁴ Indeed, the Fed is currently considered among the more conservative central banks on the climate question.²⁴⁵

3. *A Fourth Justification: The Problem of Independence for Technocratic Pragmatism*

We suspect another force is at play. Over the course of his term, President Trump engaged in a public effort to discredit the Fed and the person he appointed as its Chair, Jerome Powell.²⁴⁶ Beginning in December 2015, the Fed had begun a process of rate normalization after seven years at the zero-lower bound. As those rate hikes increased under Chair Powell, Trump was not happy.²⁴⁷ Defenders responded immediately.²⁴⁸ The President's comments violated the vaunted notion of Fed independence, a near mythical standard that protects the Fed from the hurly-burly of partisan politics. Trump, not the Fed, was violating important governance norms that protected the rest of us. The best thing the

244. Compare Lael Brainard, *supra* note 224 (arguing for aggressive engagement with climate change), and Mary C. Daly, President & CEO, Fed. Reserve Bank of S.F., *Why Climate Change Matters to Us*, Address at "The Economics of Climate Change" Research Conference Sponsored by the Federal Reserve Bank of San Francisco (Nov. 8, 2019), <https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us> [<https://perma.cc/S75F-82RT>] (same), with Katia Dmitrieva, *Federal Reserve Leaves Action on Climate Change to Politicians*, BLOOMBERG (Nov. 13, 2019, 6:26 PM EST), <https://www.bloomberg.com/news/articles/2019-11-13/federal-reserve-leaves-action-on-climate-change-to-politicians> [<https://perma.cc/M3X2-E6TX>] (reflecting Chair Powell's reticent approach), and *Fed Official: No Near-Term Plans for Climate Risk Weights, Stress Tests*, *supra* note 230 (reflecting a similar approach).

245. See Tooze, *supra* note 229.

246. For a chronology of the President's attacks on the Fed and eventually on Chair Powell, see Christopher Condon, *Here Are All the Trump Quotes on Powell as Attacks on Fed Intensify*, BNN BLOOMBERG (Nov. 28, 2018), <https://www.bnnbloomberg.ca/all-the-trump-quotes-on-powell-as-attacks-on-fed-intensify-1.1174682> [<https://perma.cc/N6G3-LEXB>].

247. Nick Timiraos, *Trump Criticizes Fed Rate Increases Again, but Says He Hasn't Spoken to Fed Chair Powell*, WALL ST. J. (Oct. 9, 2018, 5:53 PM ET), <https://www.wsj.com/articles/donald-trump-repeats-complaints-that-the-fed-is-raising-interest-rates-too-fast-1539119455> [<https://perma.cc/999B-56Y9>].

248. See, e.g., Alan S. Blinder, *When Presidents Pummel the Fed*, WALL ST. J. (Sept. 18, 2018, 6:54 PM ET), <https://www.wsj.com/articles/when-presidents-pummel-the-fed-11568847245> [<https://perma.cc/D3R9-24FM>].

President could do was focus on leading the country and let the Fed focus, independently, on its work.

Soft spots in the economy eventually caused the Fed to pause its path of interest-rate hikes.²⁴⁹ Before long, the COVID-19 pandemic obviated the critique entirely: the Fed was no longer in the business of normalizing anything about its policy.

The Trump-Fed contretemps, and the reactions to it, highlight an aspect of the Fed's identity that, in Powell's words, goes to the Federal Reserve's "DNA": its independence from politics, and the need for politicians to honor that same commitment.²⁵⁰

The idea of Fed independence is an old one. It suggests that Congress granted the Fed insulation from politics because of the unique properties associated with price stability: the politics of money mean that politicians will always want to provide short-term monetary stimulus at the expense of long-term price stability.²⁵¹ On this view, independence is the privilege granted to central banks to focus on the narrow, technocratic, decidedly nonexperimental work of protecting people and their economy from the politicians.

The need to justify and, once justified, protect the Fed's independence is a key potential weakness of technocratic pragmatism. If the central bank leans forward to gain new expertise for new kinds of problems outside of a narrow conception of its own mandate, then legality, accountability, and a noncoercion principle will not be enough. Complex problems that defy easy solutions are often those that invoke intense partisan feeling. While cyber risk does not,²⁵² the pandemic-driven economic crisis and climate change certainly do. A Fed that embraces technocratic pragmatism in relation to emergency lending (as it has largely done in 2020) and climate change (as it has mostly refrained from doing to date) will be risking political controversy.

249. Binyamin Appelbaum, *Fed Signals End of Interest Rate Increases*, N.Y. TIMES (Jan. 30, 2019), <https://www.nytimes.com/2019/01/30/us/politics/fed-interest-rate.html> [https://perma.cc/UT2J-YS4R].

250. See Sylvan Lane, *Fed Chief Powell Says He Won't Resign if Trump Asks*, HILL (Jan. 4, 2019, 10:58 AM EST), <https://thehill.com/policy/finance/423869-fed-chief-powell-says-he-wont-resign-if-trump-asked-him-to> [https://perma.cc/5YCS-7LUX] ("People should know the Fed has a very strong culture around nonpolitical activity," said Powell in a joint interview with his predecessors, Ben Bernanke and Janet Yellen. "It's very much in the DNA of anyone who has spent any time at the Fed.").

251. See CONTI-BROWN, *supra* note 101, at 1-4 (describing the "standard account" of Fed independence).

252. This partisan insulation was not always the case. See Thomas B. Edsall & Stephen Barr, *Battle Lines on Y2K Liability Catch Gore in Cross-Fire*, WASH. POST (May 7, 1999), <https://www.washingtonpost.com/archive/politics/1999/05/07/battle-lines-on-y2k-liability-catch-gore-in-cross-fire/e3b33461-dd00-440b-9851-48234fab2ba> [https://perma.cc/NFA2-3W32].

It is precisely this concern that has motivated the Fed's reluctance to do more to respond to climate change. Specifically, Chair Powell has stated that climate change is "an important issue but not principally for the Fed,"²⁵³ and that proactive policy responses to climate change should be "decided by elected officials."²⁵⁴ In so stating, Powell has adopted a position that is in line with conventional wisdom regarding the proper place of the Fed in climate policy. This conventional wisdom manifests in a general aversion to what the *Economist* editorial page has called "too much greenery" in financial regulation.²⁵⁵ As that page has written, "too much greenery risks politicising [the Fed] and compromising their core missions, which work best when politics is at arm's length. Their leaders should ensure that they stick to tasks for which they were built—and for which they have a democratic mandate."²⁵⁶ In other words, polite opinion favors the Fed being green *enough* but avoiding the risk of getting involved in any real controversy—what financial technocrats think of as prudent avoidance of "politics." Among leaders at the Fed, this has led to a cabining of climate discussion to the least controversial realms of Fed administration.²⁵⁷

Given that the Federal Reserve Act requires the Fed to be attuned to risk factors that could complicate its mission to facilitate maximum employment and price stability, why would Fed officials shy away from these obligations? Here, the answer may have to do with the ever-present fear of Fed politicization. As commentators such as Kathryn Judge have suggested, the Fed has an institutional interest in jealously guarding perceptions that it is not beholden to the influence of electoral cycles.²⁵⁸ In the context of the climate debates, this logic has often been extended to encompass the idea that the Fed ought to avoid controversy.

253. Dmitrieva, *supra* note 244.

254. Ann Saphir, *Fed Has a Role in Combatting Climate Change Risk, Powell Says*, REUTERS (Jan. 29, 2020, 7:44 PM), <https://www.reuters.com/article/us-usa-fed-climatechange/fed-has-a-role-in-combatting-climate-change-risk-powell-says-idUSKBN1ZTo31> [<https://perma.cc/DF99-ZGV5>].

255. *The Rights and Wrongs of Central-Bank Greenery*, ECONOMIST (Dec. 14, 2019), <https://www.economist.com/leaders/2019/12/14/the-rights-and-wrongs-of-central-bank-greenery> [<https://perma.cc/2C2U-GKMJ>]; see also Megan Greene, *Central Bankers Have a Limited Ability to Tackle Climate Change*, FIN. TIMES (Dec. 12, 2019), <https://www.ft.com/content/ae872da6-1bfd-11ea-81fo-0c253907d3e0> [<https://perma.cc/TLV2-4M4X>] (arguing that central banks' roles in fighting climate change should be largely limited to encouraging disclosure of applicable risk).

256. See *The Rights and Wrongs of Central-Bank Greenery*, *supra* note 255.

257. In particular, the Fed has emphasized its commitment to protecting payment systems from the effects of extreme weather events. See Smialek, *supra* note 238.

258. Judge, *supra* note 183, at 82–87 (discussing various reputational issues the Fed tried to manage during the financial crisis).

The problem with this view is that it retreats from what independence is meant for in the first place. The idea of central-bank independence as only appropriate for price stability has never been an adequate description of the Fed's role.²⁵⁹ The value of independence cannot mean avoiding any issue that is perceived as hot button, or "politicized," by some segment of the broader technocracy and commentariat.

This conception of Fed independence is wrong even as an account of the Fed's essential functions.²⁶⁰ Defenders of Fed independence usually point to two historical episodes as examples of what the Fed's independence was designed to achieve. In the first, the Fed rebelled against the inflationary policies of the Truman Administration in 1949-1951, at the start of the Cold War and the beginning of hostilities in Korea. The Fed rebelled against the agreement they had struck shortly after Pearl Harbor to support, explicitly, the Treasury markets such that the government could issue debt at a fixed exchange rate.²⁶¹ After a long, much-covered back-and-forth, the Fed and Treasury reached an "accord" that many regard as the birth of modern Fed independence.²⁶²

In the second, a brave and stubborn Volcker launched a major recession with unemployment topping ten percent, all in the name of combating raging inflation. The reports of this account usually note how crippling these maneuvers were to poor laborers, real estate, construction, car sales, and much else, but Volcker stood firm.²⁶³

Even if these now-mythic accounts should be taken at face value, there is simply no mistake about the implications of these maneuvers: the Fed, in pursuit of its statutory mandates, entered deeply into the political fray. It sparked intense partisan pressure. It was also designed to do so.

What these accounts have in common is that they are focused on the Fed's mission to maintain price stability. But hiding from political pressure where a new, complex problem requires ingenuity is not part of that same mandate. It could not be. Such evasion would amount to yielding to a heckler's veto. Instead, for Fed independence to be valuable, Fed officials must employ it in line with their best assessment of how to serve Congress's purposes. In the COVID-19

259. CONTI-BROWN, *supra* note 101, at 4.

260. BINDER & SPINDEL, *supra* note 73, at 2-3.

261. Peter Conti-Brown & David Zaring, *The Foreign Affairs of the Federal Reserve*, 44 J. CORP. L. 665, 682-83 (2019).

262. For an account of the achievement of the accord, see Robert L Hetzel & Ralph F. Leach, *The Treasury-Fed Accord: A New Narrative Account*, 87 FED. RES. BANK RICHMOND ECON. Q. 33, 53 (2001), which states that "[t]he March 1951 Accord marked the start of the modern Federal Reserve System."

263. See, e.g., ALAN S. BLINDER, *HARD HEADS, SOFT HEARTS: TOUGH-MINDED ECONOMICS FOR A JUST SOCIETY* (1988).

context, this has involved Chair Powell cajoling elected officials constantly and publicly to vastly increase their emergency fiscal measures.²⁶⁴ A more “political” question can hardly be imagined than whether to enact a fiscal stimulus bill ordering on trillions of dollars. Even so, Chair Powell has determined it best fulfills his role to take a dialogic approach, engaging directly with the political branches.

We think this represents a far better conception of independence than one that would avoid controversy for fear of backlash. Under this conception, the Fed is able to maintain independence from the elected branches of government when it engages with hot-button issues from the footing of its expertise regarding how a given course of action is likely to affect the economy. Its independence is an independence of judgment, not of hermetic sealing or of sticking to questions that are so technical they could never produce popular engagement. It is this idea of independence that actively calls for greater Fed engagement on climate.

Indeed, as these prior case studies suggest, the value of experimental engagement with the climate-change threat today is likely to bear fruit in terms of greater readiness to address issues that arise in the future. Conversely, the costs of inaction today are likely to manifest as inexpertise in the future. These divergent paths are apparent across the Fed’s policy mandates. Just as it has taken decades to build up the internal expertise necessary to proactively address cyber threats, so too would proactively addressing the climate threat require significant time and energy.

4. *The Case for Climate Pragmatism*

Given the long-term threat posed by climate change, the current strategy of tepid engagement appears only barely within the realm of technocratic pragmatism. The Fed should begin to engage in pragmatic development of its expertise and capacity regarding potential micro- and macroprudential responses to climate change today. It should follow the strategy of technocratic pragmatism in doing so, by first developing expertise discursively (through research), then through operations, supervision, and eventually (if appropriate) regulation and monetary policy.

Nudging the Fed forward in the quest to develop appropriate expertise also conforms to the guardrails that are part of the technocratic-pragmatic framework. Most fundamentally, the Fed’s statutory responsibilities not only permit

264. See Nick Timiraos, *Powell Says Economic Gains Are at Risk if Stimulus Measures End Prematurely*, WALL ST. J. (June 17, 2020, 2:18 PM ET), <https://www.wsj.com/articles/lawmakers-to-press-powell-on-additional-relief-measures-11592386200> [<https://perma.cc/43WX-5UMC>] (describing Jerome Powell’s second day of testimony on Capitol Hill, during which he directly appealed to Congress for more stimulus).

climate-change engagement, but require it. Under an appropriately broad reading of the Fed's multiple mandates, climate change holds the potential to become a major challenge to their realization. Regarding bank regulation and supervision, Congress has mandated the Fed to mind the safety and soundness of individual institutions.²⁶⁵ While the Fed has begun taking seriously the operational risks associated with extreme weather events, it has to date failed to incorporate broader considerations of climate risk to banks' balance sheets. But experts, including those within the Fed's own research department, have increasingly concluded that bank investments will be differentially affected by climate risk.²⁶⁶ In this regard, climate risk is increasingly looking no different from exposure to particular regions' weather events or other secular macroeconomic shifts.

It is true that the Fed does not yet know how to supervise banks vis-à-vis the risks posed by climate change. It does not yet know how to model that risk well. The long-time horizons *are* indeed nontrivial for conducting the cost-benefit analyses required to understand capital regulation, stress tests, loan underwriting, and other forms of supervision and regulation in response to the climate challenge. But those present limitations are not enough to justify a lack of engagement; technocratic pragmatism explains why engaging will produce such expertise on these and related questions.

Banks themselves are beginning to see implementing board-level risk-management measures as protecting their own safety and soundness.²⁶⁷ The development of a programmatic regulatory and supervisory approach to measuring and safeguarding against these risks on an institutional level would merely bring the Fed up to speed with the leaders of the private sector.

The line from climate risk to financial stability is just as direct. As Graham Steele has detailed, the post-Dodd-Frank financial-stability framework requires the Fed, along with other agencies on the Financial Stability Oversight Council, to safeguard the stability of the financial system by developing and applying a regime of enhanced prudential standards to systemically important institutions.²⁶⁸ The fit between this mandate and attentiveness to climate change arises principally due to two risk scenarios. First, it is increasingly plausible that legislative responses to climate change around the world will impose a "transition" shock to carbon-based industries. If this comes to pass, it will pose an attendant shock to any financial institution exposed to those industries, and may do so all

²⁶⁵. See 12 U.S.C. §§ 1831p-1, 1844(e) (2018).

²⁶⁶. See Steele, *supra* note 3; Michael S. Derby, *N.Y. Fed Official: Bank Regulators Have Growing Interest in Climate-Change Risks*, WALL ST. J. (Nov. 7, 2019, 12:41 PM ET), <https://www.wsj.com/articles/n-y-fed-official-bank-regulators-have-growing-interest-in-climate-change-risks-11573148495> [<https://perma.cc/3SXR-X469>].

²⁶⁷. See Condon, *supra* note 215.

²⁶⁸. See Steele, *supra* note 3, at 29.

at once.²⁶⁹ Second, the physical risk associated with the expected rise in intensity and regularity of extreme weather events poses a threat to loan portfolios according to geography, as well as to insurers and any institution strongly interconnected to them.²⁷⁰ These kinds of correlated risks to interconnected financial institutions are exactly the target of the Dodd-Frank regime.

What is holding the Fed back from implementing a set of climate screens – or even climate-related stress tests – as part of its macroprudential financial-stability framework? At present, it appears to be an interpretation of its financial-stability responsibilities as merely pertaining to a short-term horizon. On this view, recently articulated by Fed General Counsel Mark Van Der Weide, climate change’s impacts would hit the banking sector so far down the line that they need not be incorporated into today’s financial stability efforts.²⁷¹ But the idea of a time-delimited approach to financial stability oversight finds no basis in Dodd-Frank. To the contrary, the stated purpose of the macroprudential oversight provisions of Dodd-Frank focuses on the “material[ity]” of any risk posed to financial stability.²⁷² From this perspective, as Governor Lael Brainard has recently articulated, climate change is just as salient as other threats such as cyber risk.²⁷³ Though cyber risk is perhaps more salient in the short term, any plan for the long-term stability of the financial system must take climate change into account.

D. Out of Bounds: Central Bankers Crossing Lines of Technocratic Pragmatism

Drawing inspiration from the Fed’s past (cybersecurity), present (COVID-19), and future (climate change) does not mean that the Fed has always policed the boundaries of its experimentation well. Technocratic pragmatism is not *carte blanche* to pursue at will every flight of political fancy. In too many instances, central banker enthusiasm for policies outside their statutory remit has threatened Fed legitimacy. For instance, the Fed weighed heavily into national security policy during the Korean War²⁷⁴ and during the Vietnam War,²⁷⁵ in the name of fighting inflation but far beyond their statutory remit. Advocacy for

²⁶⁹. See *id.* at 7.

²⁷⁰. See *id.* at 23.

²⁷¹. See *Fed Official: No Near-Term Plans for Climate Risk Weights, Stress Tests*, *supra* note 230.

²⁷². 12 U.S.C. § 5365(a)(1) (2018).

²⁷³. See Brainard, *supra* note 224.

²⁷⁴. Conti-Brown & Zaring, *supra* note 261, at 682–83 (discussing the Korean War example).

²⁷⁵. ROBERT BREMNER, CHAIRMAN OF THE FED: WILLIAM MCCHESENEY MARTIN JR. AND THE CREATION OF THE MODERN FINANCIAL SYSTEM 220–33 (2004) (discussing the Vietnam War example).

epidemiological policy during the COVID-19 pandemic – shutting down the entire national economy, for example – is another.²⁷⁶

We focus at more length on two: former Chair Alan Greenspan's advocacy for privatizing social security in 2004 and Federal Reserve Bank of Minneapolis President Neel Kashkari's campaign to amend the Minnesota state constitution in the name of educational reform. In each case, the central bankers took the legitimacy that the Fed has achieved through technocratic pragmatism and repurposed it beyond the outer boundary for such experimentation. In our schematic, purely discursive efforts to understand the connection between social-security reforms or educational reform and core statutory mandates would be appropriate;²⁷⁷ political advocacy for a specific policy outcome is not.

1. *The Quest to Privatize Social Security*

The Social Security Act of 1935 was a controversial bill from the start, but arguably the most enduring accomplishment of the New Deal.²⁷⁸ The original conception of the program bears only passing resemblance to the modern system: most workers were excluded, for example, including farm laborers, “the self-employed, educators, household servants, casual laborers, and the masses of unemployed.”²⁷⁹ Worse still, life expectancy in 1935 was sixty-two years; social-security benefits did not trigger until sixty-five.²⁸⁰ From those tentative seeds grew a mainstay of the U.S. social safety net, growing in generosity of coverage, inclusion of workers, and lowering the age of eligibility.

By 1981, there was bipartisan enthusiasm for Social Security reform, motivated by fear that the Social Security Administration would be unable to honor financial commitments to retirees within two years. President Reagan created a presidential commission, the National Commission on Social Security Reform, chaired by Greenspan – the former chief economic adviser to President Ford and

276. See Michael T. Osterholm & Neel Kashkari, Opinion, *Here's How to Crush the Virus Until Vaccines Arrive*, N.Y. TIMES (Aug. 7, 2020), <https://www.nytimes.com/2020/08/07/opinion/coronavirus-lockdown-unemployment-death.html> [<https://perma.cc/QZ3H-NFNL>].

277. E.g., Maarten de Ridder, Simona M. Hannon & Damjan Pfajfar, *The Multiplier Effect of Education Expenditure* (Fin. & Econ. Discussion Series, No. 2020-058, 2020), <https://www.federalreserve.gov/econres/feds/files/2020058pap.pdf> [<https://perma.cc/9HPR-PHFW>]; Patricia S. Pollard, *The Benefits and Hazards of Privatizing Social Security*, FED. RES. BANK ST. LOUIS (Oct. 1, 1997), <https://www.stlouisfed.org/publications/central-banker/fall-1997/the-benefits-and-hazards-of-privatizing-social-security> [<https://perma.cc/A7AD-LPFH>].

278. See DAVID M. KENNEDY, *FREEDOM FROM FEAR: THE AMERICAN PEOPLE IN DEPRESSION AND WAR, 1929-1945*, at 242-47 (1999).

279. Jerry W. Markham, *Privatizing Social Security*, 38 SAN DIEGO L. REV. 747, 752 (2001).

280. *Id.* at 753.

an economic forecaster.²⁸¹ Several of Reagan's supporters, including economist Milton Friedman and the Cato Institute, a libertarian think tank, had long argued that the path out of the fiscal pain for social security was to privatize those accounts: that is, turn those contributions deducted via a payroll tax over to an individual account for employees to invest on their own.²⁸²

The Greenspan Commission, however, did not cross that bridge, being remembered instead as a "model of bipartisan cooperation"²⁸³ that unanimously urged that "Congress, in its deliberations on financing proposals, should not alter the fundamental structure of the Social Security program or undermine its fundamental principles."²⁸⁴ Instead, it devised the modern system to fund the Social Security Trust by cutting cost-of-living increases, increasing withholdings, and making some modest concessions to progressive taxation.²⁸⁵

Controversies around Social Security solvency did not end with the Greenspan Commission. Social-security privatization became a major focus after the contested 2000 election between George W. Bush (who advocated for privatization) and Al Gore (who opposed it). After Bush's victory, the incoming administration told journalists that after education reform, overhauling Social Security was a top priority.²⁸⁶ The point person was to be the new Treasury Secretary, Ford Administration alumnus and aluminum executive Paul O'Neill.

Greenspan, now the Fed Chair, was recruited by the Bush Administration to recruit O'Neill and sell him on the benefits of Social Security privatization.²⁸⁷ As O'Neill recalled after the fact, Greenspan committed to a partnership from his powerful perch inside the Fed, where he reigned with unrivaled esteem by 2000²⁸⁸: "There is a real chance to make some lasting changes. We could be a

281. See ROBERT M. BALL, *THE GREENSPAN COMMISSION: WHAT REALLY HAPPENED* 13 (2010).

282. See PETER J. FERRARA, *SOCIAL SECURITY: THE INHERENT CONTRADICTION* 11-13 (1980); Milton Friedman, *Speaking the Truth About Social Security Reform*, CATO INST. (Apr. 12, 1999), <https://www.cato.org/sites/cato.org/files/pubs/pdf/bp46.pdf> [<https://perma.cc/SJH7-5QT7>].

283. SEBASTIAN MALLABY, *THE MAN WHO KNEW: THE LIFE AND TIMES OF ALAN GREENSPAN* 276 (2016).

284. NAT'L COMM. ON SOC. SEC. REFORM, *REPORT OF THE NATIONAL COMMISSION ON SOCIAL SECURITY REFORM* (1983), <https://www.ssa.gov/policy/docs/ssb/v46n2/v46n2p3.pdf> [<https://perma.cc/UX79-ZQZR>].

285. *Id.*

286. Richard W. Stevenson, *The 43rd President: The Vice President-Elect; Cheney Says Bush Administration Will Move Rapidly on Issues Central to Campaign*, N.Y. TIMES (Dec. 18, 2000), <https://www.nytimes.com/2000/12/18/us/43rd-president-vice-president-elect-cheney-says-bush-administration-will-move.html> [<https://perma.cc/K8DP-ZCD9>].

287. See RON SUSKIND, *THE PRICE OF LOYALTY: GEORGE W. BUSH, THE WHITE HOUSE, AND THE EDUCATION OF PAUL O'NEILL* 30 (2004).

288. See CONTI-BROWN, *supra* note 101, at 58-67.

team at the key moment, to do the things we've always talked about.”²⁸⁹ Reforming Social Security with a version of privatization was one such priority.

O'Neill would not last long in the Bush Administration, and Social Security reform was pushed off as the Administration focused on responding to 9/11, two rounds of tax cuts, and the invasion of Iraq. But after the 2004 election, the Administration returned to its reform ideas. Greenspan, well into his second decade as Fed Chair, had been reappointed by Bush in 2002.

From this perch, he became, in public and private, a strong voice for Social Security reform. He testified before Congress that he supported private accounts for Social Security, even as he sought to explain how expensive it was.²⁹⁰ He warned that the administration would likely have to cut benefits because of the funding gap in the system.²⁹¹ He advocated for benefit cuts such that future retirees would have less than past retirees.²⁹² Republicans in Congress and the White House may have been the primary political faces of these reforms, but they had in Greenspan the imprimatur of the Fed's technocracy and functional legitimacy: the kinds of value judgments involved in Social Security reform were, in fact, technical in detail, and it seemed to many within the bailiwick of the nation's central banker to shape the specifics of that policy design.

Such interjection into the politics of values and distribution, however, is beyond the pale of the Fed's technocratic pragmatism. There is nothing the Fed can learn about the design of Social Security that will answer this basic question: How much should society pay to ensure that the retired elderly do not face poverty? Technical content about longevity risk, fiscal structure, and other related issues has no plausible relationship to the statutory mandates of the Fed, the first rule of technocratic pragmatism. Or better: if the Fed's broad statutory mandates can be stretched so thin, then truly there is no question of social or economic importance that the statute excludes.

In a rosy encomium celebrating Greenspan's legacy, economists Alan Blinder and Ricardo Reis described Greenspan as having “a legitimate claim to being the

289. SUSKIND, *supra* note 287, at 30.

290. Editorial, *What Does Alan Greenspan Want?*, N.Y. TIMES (Feb. 18, 2005), <https://www.nytimes.com/2005/02/18/opinion/what-does-alan-greenspan-want.html> [https://perma.cc/4X8H-5UZ5].

291. Alan Greenspan, Chair, Fed. Reserve, Opening Remarks at the Federal Reserve Bank of Kansas City Symposium (Aug. 27, 2004), <https://www.federalreserve.gov/boarddocs/speeches/2004/20040827/default.htm> [https://perma.cc/7ADV-6JRM].

292. Opinion, *Fixes for Social Security*, N.Y. TIMES (Apr. 4, 2004), <https://www.nytimes.com/2004/04/04/opinion/fixes-for-social-security.html> [https://perma.cc/F6QK-Z3GK].

greatest central banker who ever lived.”²⁹³ But the shadow on his legacy was clear to them, even before the 2008 crisis cast Greenspan’s legacy in a darker light. His advocacy for private accounts “made him a partisan figure in the eyes of many” and, they argued, caused a collapse in the popularity of the Fed, especially among Democrats.²⁹⁴

Such are the consequences of experimentation outside the bounds of technocratic pragmatism. They also lead to cries for a substantial narrowing of experimentation, which is itself an overreaction. For agencies like the Fed to maintain the space to experiment within the bounds of legality, accountability, and noncoercion, they must stay away from those issues with no real connection to core statutory duties.

2. *Amending the Minnesota State Constitution*

A second example of transgressing the bounds of technocratic pragmatism is ongoing. Neel Kashkari, the president of the Federal Reserve Bank of Minneapolis, is leading an effort with Alan Page, a retired Minnesota Supreme Court justice, to amend the state constitution to guarantee a fundamental right of equal education to all of Minnesota’s citizens. This effort is widely covered in state²⁹⁵ and national news²⁹⁶ and on the Minneapolis Fed’s own website. It is nearly always linked to Kashkari’s role as a central banker.

The relevant section of the Minnesota constitution currently requires the following:

UNIFORM SYSTEM OF PUBLIC SCHOOLS. The stability of a republican form of government depending mainly upon the intelligence of the people, it is the duty of the legislature to establish a general and uniform system of public schools. The legislature shall make such provisions by

293. Alan S. Blinder & Ricardo Reis, *Understanding the Greenspan Standard*, FED. RES. BANK KAN. CITY SYMP. 14 (Aug. 2005), <https://www.kansascityfed.org/publicat/sympos/2005/pdf/Blinder-Reis2005.pdf> [<https://perma.cc/5579-EN25>].

294. *Id.* at 72.

295. Mary Lynn Smith, *To Close Minnesota’s Achievement Gap, Two Leaders Propose Amending State Constitution*, MINN. STAR TRIB. (Jan. 8, 2020), <https://www.startribune.com/to-close-minnesota-s-achievement-gap-they-say-amend-the-constitution/566799202> [<https://perma.cc/R9VY-CE5D>].

296. Jenna Smialek, *Minneapolis Fed President Says Systemic Racism Hurts the Economy*, N.Y. TIMES (June 17, 2020), <https://www.nytimes.com/2020/06/17/business/economy/neel-kashkari-federal-reserve-racism.html> [<https://perma.cc/AG69-CC95>].

taxation or otherwise as will secure a thorough and efficient system of public schools throughout the state.²⁹⁷

The Kashkari-Page amendment is as follows:

EQUAL RIGHT TO QUALITY PUBLIC EDUCATION. All children have a fundamental right to a quality public education that fully prepares them with the skills necessary for participation in the economy, our democracy, and society, as measured against uniform achievement standards set forth by the state. It is a paramount duty of the state to ensure quality public schools that fulfill this fundamental right.²⁹⁸

It is well beyond the scope of this Feature to assess these proposals on their merits, a question on which we have no opinion. But the differences between the existing constitution and the proposed amendment are far from cosmetic: instead of assigning the uniformity of the state's educational system to the legislature, it creates a constitutional guarantee for outcomes that include reference to "uniform achievement standards."²⁹⁹

The Minneapolis Fed website announcing the Kashkari-Page amendment refers to research conducted by the Fed that highlights large educational disparities in Minnesota.³⁰⁰ But while the discursive and research functions of technocratic pragmatism would support research into how educational gaps might contribute to the Fed's core statutory mandates, political activism that would amend state constitutions does not. This is in a variety of ways a case of failure to respect the limits of the Fed's expertise. First, there is no obvious tie between a constitutional amendment based on uniform achievement standards and removing discretion from the state legislature and the report on which Kashkari says his amendment is based. Identifying problems in public policy may have technical content—even technical content relevant to the Fed's core statutory duties—but crafting a solution to that problem is a different issue entirely. Second, constitutional amendments are coercive in the way we have used this term: the Fed (through Kashkari) seeks to bind politicians, teachers, school administrators, and students by policies it does not fully understand. And third, this effort—as

297. MINN. CONST. art. XIII, § 1.

298. *A Constitutional Amendment to Transform Education in Minnesota*, FED. RES. BANK MINNEAPOLIS (Jan. 8, 2020), <https://www.minneapolisfed.org/article/2020/a-constitutional-amendment-to-transform-education-in-minnesota> [<https://perma.cc/9438-9CS6>].

299. *Id.*

300. *Id.* (citing Rob Grunewald & Anusha Nath, *Minnesota's Education Achievement Gaps*, FED. RES. BANK MINNEAPOLIS (Oct. 11, 2019), <https://www.minneapolisfed.org/~media/assets/pages/education-achievement-gaps/achievement-gaps-mn-report.pdf> [<https://perma.cc/3DE3-ZX76>]).

with the social-security efforts advocated by former Chair Greenspan—seeks to launder the Fed’s legitimacy in one area for unearned legitimacy in another. The Fed has no relevant expertise to design constitutional structures in Minnesota or anywhere else. Seeking to do so now threatens to erode the Fed’s functional legitimacy across the board.

CONCLUSION

Technocratic pragmatism represents a way to structure the problematic but highly desirable process of administrative learning in moments of radical inexperience. It does not flow from only a “paean to the administrative state,” as Chief Justice Roberts once described a fulsome defense of agency independence.³⁰¹ It instead reflects a clear-eyed assessment of the benefits and costs of a Fed that seeks to honor its broad congressional mandates with creativity.

The potential costs we identify in this Feature—bureaucratic drift, illegality, coercion, unaccountability, and sacrifices of independence—are genuine. They motivate the limits of technocratic pragmatism and must be constrained by appropriate congressional oversight. Without managing them, the Fed will inevitably fall into democratic deficit. The central threat of agency drift—that technocrats will exercise value judgments that displace the political process—will be much likelier to occur.

The Fed is a unique agency within the administrative state. And while much of the theoretical grist for technocratic pragmatism draws from general views about administrative agencies, our arguments rest on the Fed’s particular historical evolution. History also shows that the challenge of managing technocratic pragmatism subject to these guardrails is well worth the effort. The complex problems that we identify—including cybersecurity threats, pandemics, climate change, and many other sources of crisis—require the best that the Fed can provide.

301. *Free Enter. Fund v. Pub. Co. Accounting Oversight Bd.*, 561 U.S. 477, 499 (2010).