CAPITAL REGULATION AS CLIMATE POLICY

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ABSTRACT

Federal banking regulators are grappling with how to confront the threats posed by climate change. There are increasingly loud calls for regulators to adjust the “risk-weights” used to calculate banks’ minimum capital requirements based on how exposed their counterparties are to climate-related risks. This action could safeguard the financial system, and potentially make it less desirable for banks to lend to carbon-intensive activities. But other scholars have challenged the legality and administrability of this proposal. They argue that it is difficult to gather reliable empirical data about climate-related risks, and that any risk-weights that are not grounded in such data impermissibly deviate from risk-weights’ intended purpose.

This Article argues that these counter-claims are wrong. It does so by challenging the widespread misconception of the nature and function of risk-weights. Risk-weights are unavoidably discretionary policy instruments. They cannot simply be set through mechanical calculations, and always reflect a trade-off between limiting risks to banks (counseling setting a higher risk-weight) and enabling them to extend credit to a given activity in the real economy (counseling setting a lower risk-weight). At times, this trade-off has been explicit; it is always implicit in the exercise of regulatory discretion.

Further, Congress’ delegation of authority to the banking regulators reflects this understanding of risk-weights. In light of the complex policy challenge of setting risk-weights, Congress gave the regulators wide discretionary authority—generally exempt from judicial review—to engage in negotiation and experimentation. Yet when Congress has disagreed with how regulators have negotiated the risk-weight trade-off, it has reversed their decisions without restricting the delegation of authority. It may well be difficult to isolate climate-related financial risks in setting risk-weights. But this is no obstacle to regulatory action needed to protect the safety and soundness of the financial system.

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I. INTRODUCTION

We are all climate policymakers now—but not everyone is saying as much. In a recent speech at the Swedish central bank, Jay Powell, the Chair of the Board of Governors of the Federal Reserve System, declared that the agency “[i]s not[,] and will not be, a ‘climate policymaker.’” While Powell argued that the Federal Reserve has “narrow, but important, responsibilities regarding climate-related financial risks,” he maintained that “without explicit congressional legislation, it would be inappropriate for us to use our monetary policy or supervisory tools to promote a greener economy or to achieve other climate-based goals.” Powell’s effort to thread this needle is unlikely to resolve a fiercely-raging debate about how the Federal Reserve—and to a lesser extent, the other federal banking regulators—should address the causes and consequences of climate change. This discourse has taken on a particularly fevered pitch because it is intertwined with a larger debate:

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1. Cf. Milton Friedman, Dollars and Deficits 1, 15 (1968) (“[I]n one sense, we are all Keynesians now; in another, no one is a Keynesian any longer.”).


3. Id.

4. The Board of Governors of the Federal Reserve System (“Board”) regulates bank holding companies; U.S. subsidiaries of foreign banks; and large, systemically-important financial institutions on a consolidated basis. For purposes of this Article, the other relevant federal banking regulators are the Office of the Comptroller of the Currency (OCC), which is the primary regulator for nationally-chartered banks and savings associations, and the Federal Deposit Insurance Corporation (FDIC), which is the primary regulator for state-chartered banks and savings associations. See 12 U.S.C. § 1813(q).

the Federal Reserve’s enormous power over economic life, and the appropriate degree of independence between it and the political branches of government.6

The fundamental problem is that Powell’s distinction is untenable. One strand of the relevant literature addresses Powell’s narrow concern: whether and how banking regulators should address the specific risks to the financial system posed by climate change.7 In Mark Carney’s influential formulation, climate change poses three types of threats to financial assets: physical risks from extreme weather events; liability risks associated with potential environmental lawsuits; and transition risks from regulatory and technological changes that firms must adapt to as society shifts to less carbon-intensive modes of production.8 Because financial losses stemming from these risks may be systematic (i.e., non-diversifiable), they could have ripple effects across the entire economy, particularly by threatening central nodes in financial networks and drying liquidity from inter-bank lending markets.9 Other scholars address what, to Powell, is verboten. Contending that climate change also poses an intrinsic threat to prosperity and macroeconomic


stability, they argue that the banking regulators should confront it without limiting their sights to the specific risks it poses to the functioning of the financial system.\(^\text{10}\)

Yet in practice, these two justifications for regulatory action are difficult to disentangle. A policy designed to curtail lending to fossil fuel production may not reflect the normative standard of the first approach, but simultaneously reduce risk to the financial system. And given the enormous uncertainty about how climate change will affect economic systems, a sufficiently precautionary approach to managing climate-related financial risks might result in dramatic allocation of capital away from carbon-intensive industries. Achieving a “greener economy” may not be the goal of prudential regulation, but it likely must be its handmaiden. This entanglement has not only resulted in intellectual confusion, but also regulatory paralysis.

One specific policy proposal that has been widely discussed is the idea that regulators should adjust the “risk-weights” used to calculate bank capital requirements to reflect climate-related risks.\(^\text{11}\) Capital regulation is the core of the

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bank regulatory regime. In order to fulfill their function of extending credit into the economy, banks are highly leveraged: they fund more of their lending activities through debt (like customers’ deposits) than equity. Minimum capital requirements ensure that banks have enough of an equity buffer to withstand potential losses. These requirements are calibrated through formulas that incorporate risk-weights attached to the specific loans or assets on a bank’s balance sheet. Climate-related risks often take the form of ‘tail risks’ which capital requirements are designed to prophylactically address. Yet there is reason to think that lack of specific attention to climate-related risks in setting risk-weights makes banks more vulnerable to insolvency. Market risk premia may not sufficiently reflect climate-related risks; risk-weights are not calibrated to the specific ways that climate-related losses are likely to be correlated; and discrepancies between the risk-weights applied by U.S. and foreign regulators make it more attractive for U.S. banks to lend to the riskiest, carbon-intensive activities. The inattention to climate-related risks may pose both individualized concerns to the solvency of specific banks, and “macro-prudential” concerns to the functioning of the financial system as a whole. In view of these concerns, regulators could specifically adjust
the risk-weights applied to different kinds of assets. Regulators could “up-weight” loans and other exposures to entities that are particularly likely to suffer climate-related losses, or generate climate-related externalities that pose risks to the functioning of the broader financial system. They could also “down-weight” exposures that relate to the transition away from fossil fuels, which may or may not be less risky as a result.

While adjusting capital requirement formulae sounds highly technical, it could have dramatic consequences for the allocation of credit across the global economy. In general, applying a higher risk-weight to a given type of activity makes it less attractive for banks to support it through lending. There are clear empirical connections between regulatory risk-weights and bank funding levels. And economic modeling exercises suggest that applying climate-informed risk-weights

21. The bank regulators have independent authority to develop capital regulations addressing both micro-prudential and macro-prudential risks. See Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 § 171(b)(7)(A), 12 U.S.C. § 5371(b)(7)(A); see also infra Part III.A.

22. For a discussion of one such proposal, see Francesco Guarascio, EU Eyes Capital Offer for Banks to Boost Climate Financing, REUTERS (Dec. 12, 2017), https://www.reuters.com/article/uk-climatechange-summit-eu-banks-idUKKBN1E60RW. While some proposals for down-weighting “green” exposures appear motivated by a desire to reduce carbon emissions in and of itself, there are also potential justifications for doing so internal to the logic of prudential risk management. One is macro-prudential. Investment in green technologies may help ensure the resiliency of the financial system as a whole to climate-related risks; lower risk-weights for “green” exposures could seek to internalize this externality. Another is micro-prudential. In light of the present scale of government subsidy for clean energy production in the United States—including Department of Energy loan guarantees for many significant generation-related loans—many such exposures may present genuinely lower credit risk to banks. See John Bistline et al., Economic Implications of the Climate Provisions of the Inflation Reduction Act 5 (Brookings Papers on Econ. Activity, Conf. Draft Mar. 30-31, 2023), https://www.brookings.edu/wp-content/uploads/2023/03/BPEA_Spring2023_Bistline-et-al_unembargoedUpdated.pdf. That said, evaluating the merits of these arguments is outside the scope of this Article.

23. See infra Part I.B.

could have a material impact on global emissions levels and atmospheric temperatures.\(^{25}\)

Nonetheless, applying climate-informed risk-weights to capital requirements is acutely controversial. While European regulators seem to be on a path to implementing such a policy,\(^{26}\) the Federal Reserve Board’s General Counsel has stated that the agency has no “near-term” plans to take similar steps.\(^{27}\) Some have argued that such climate-informed risk-weighting would have limited practical impact.\(^{28}\) More powerful are arguments that it is either unlawful, or un-

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26. See discussion infra Part IV.B.


28. See, e.g., Samuel Wilkes, *Climate Risk-Weights a ‘Terrible Idea’ for Aiding Transition*, RISK.NET (Aug. 26, 2021), https://www.risk.net/regulation/7868066/climate-risk-weights-a-terrible-idea-for-aiding-transition; Sini Matikainen, *Green Doesn’t Mean Risk-Free: Why We Should Be Cautious About A Green Supporting Factor In the EU*, LSE GRANTHAM RSRCH. INST. ON CLIMATE CHANGE & THE ENV’T (Dec. 18, 2017), https://www.lse.ac.uk/granthaminstitute/news/eu-green-supporting-factor-bank-risk/. The strongest argument that climate-informed risk-weighting would have little impact is that carbon-intensive financing would migrate to non-depository institutions not governed by capital requirements. This argument generally takes one of two flavors: first, that bond markets, private equity lenders, and “shadow banking” institutions will step into the void to lend to activities penalized with higher capital requirements; or second, that banks will still engage in such lending under an “originate-to-distribute” model wherein the loans are securitized and transferred off banks’ balance sheets. See, e.g., Viral V. Acharya et al., *Climate Stress Testing* 30 (Na’tl Bur. Econ. Rsrch, Working Paper Series No. 31907, 2023), https://www.nber.org/papers/w31097. Adjudicating these claims is beyond the scope of this Article. But there is reason to be skeptical of the extent that these other cash pools can fulfill the function of bank lending: much carbon-intensive activity is undertaken by small- and medium-sized enterprises with limited access to bond markets, and the highly volatile cash flows associated with fossil fuel production may prove a poor match for the securitization model. Cf. Gelzinis, *supra* note at 11, at 30 (noting these
administrable. Scholars arguing that climate-risk weighting is *unlawful* contend that many designs for such risk-weights would amount to “credit guidance”—steering the direction of bank lending—that cannot be justified under bank regulators’ mandate to ensure the safety and soundness of the financial system.\(^{29}\) Those arguing that climate-risk weighting is *un-administrable* point to the complexity of climate-related financial risks, and the dearth of reliable micro-level data on the subject.\(^ {30}\) These two arguments are often intertwined, with the implication that even if there are hypothetical climate-informed risk-weights that are acceptable, regulators cannot develop them in a way that is consistent with their legal authority.

This Article argues that these two arguments against climate-informed risk-weighting are wrong. It does so by unpacking their mistaken implicit assumptions about the way that risk-weights are supposed to function. In the process, this Article aims to redefine our conception of a crucial, but little-understood mechanism for regulation of the economy. Risk-weights are often thought of as dry—even mechanical—technocratic calculations; I show that they are actually highly-flexible, and necessarily discretionary policy tools. I highlight how they have been used for alternative funding sources “would come at a higher cost to the borrower relative to current bank funding sources”). Moreover, capital requirements’ effects on bank lending decisions affect not only their own portfolio composition but credit spreads across the economy. See IRANI ET AL., supra note 24, at 2184, 2220 (finding that higher capital requirements that reduce bank lending leads to non-banks filling part—but not all—of the gap).


30. See, e.g., Campiglio et al., supra note 7, at 465 (“Climate-aligned prudential policy could be too blunt a tool if applied to banks’ exposures to entire productive sectors or companies, as it would not be able to discriminate within carbon-intensive sectors [e.g., utilities] those companies that engage in low-carbon investments. However, estimating banks’ capital requirements based on the ‘greenness’ of specific investment projects might overburden banks with assessment exercises they are not familiar with.”); RODRIGO COELHO & FERNANDO RESTOY, FSI BRIEFS NO. 16: THE REGULATORY RESPONSE TO CLIMATE RISKS: SOME CHALLENGES, BANK FOR INT’L SETTLEMENTS (2022), https://www.bis.org/fsi/fsibriefs16.pdf (“Adjusting standard Pillar 1 instruments such as capital requirements to address climate-related financial risks . . . could be warranted from a conceptual point of view, [however] making this adjustment would entail some non-negligible operational challenges.”); Lauren Anderson & Francisco Covas, Climate Risk and Bank Capital Requirements, BANK POL’Y INST. (May 13, 2021), https://bpi.com/climate-risk-and-bank-capital-requirements/.
economic problem-solving beyond a narrow conception of prudential risk-management, contending that imposing climate-informed risk-weights is consistent with this historic usage. Finally, I demonstrate that this usage is consistent with Congress’ delegation of authority to the bank regulators to set risk-weights, by detailing inter-branch dialogue in the setting of risk-weights which other scholars have not addressed. Accordingly, this Article offers a framework for understanding the normative legitimacy of these enormously powerful policy tools, and points to what oversight and contestation over their proper usage can look like.

The argument that climate-informed risk-weighting is unlawful generally rests on the implicit assumption that risk-weights must only be constructed with respect to quantifiable financial risks to banks. But from their initial creation in the 1980s, the risk-weights applied to a given type of lending have always reflected a trade-off between ensuring bank solvency and enabling bank credit diffusion to the sector in question. Congress delegated the bank regulators wide latitude to negotiate this trade-off, both with respect to international negotiations to harmonize regulations with other countries’ regulators, and to implementing them domestically. This discretion is so all-encompassing that its exercise is generally exempt from judicial review. But where Congress has disagreed with the regulators’ balancing of this trade-off, it has overruled their decisions without limiting the broader delegation of authority. This crucial fact has been essentially ignored in existing scholarship. The structure of Congress’ delegation to set risk-weights enables regulatory experimentation and the development of administrative expertise, while ensuring that the buck ultimately stops with Congress. In light of this structure, it is not only lawful for regulators to respond to exigent circumstances by developing climate-informed risk-weights, but arguably necessary in order to enable effective inter-branch dialogue.

The argument that climate risk-weighting is not administrable rests on a related assumption: that there exists an empirically “correct” risk-weight for a given asset which regulators must apply. But both conceptually, and practically, risk-

31. See infra Part II.B.
32. See infra Part III.A.
33. See infra Part III.A.ii.
34. See infra Part III.B.
35. Scholars have discussed Congress’ general influence in the negotiation and implementation of the Basel capital accords. See, e.g., Michael S. Barr & Geoffrey P. Miller, Global Administrative Law: The View from Basel, 17 Eur. J. Int’l L. 15 (2006). But to my knowledge, no law journal publication has ever analyzed the explicit Congressional reversal of certain features of these rules after their promulgation, such as the risk-weights regulators set for high volatility commercial real estate exposures (HVCREs), or the treatment of municipal bonds under liquidity rules. These examples are discussed infra in Part III.B.
weights can never pinpoint the precise credit risk of any exposure on a bank’s balance sheet.\textsuperscript{36} In recognition of this fact—and of their substantial legal discretion—regulators have assigned risk-weights using relatively blunt instruments and high-level heuristics.\textsuperscript{37} They have also effectively shifted decision-making externally through the use of third-party assessments.\textsuperscript{38} Given that other countries’ regulators are already developing climate-informed risk-weights, it is clear that imposing them in the United States must therefore be administrable.\textsuperscript{39}

While this Article aims to dismantle the arguments against imposing climate-informed risk-weighting, the proper design of such a regulatory regime is beyond its scope. It elides the question of what the practical impact of imposing climate-informed risk-weights would be.\textsuperscript{40} And it remains agnostic about the question about whether it is sensible to weight certain ‘green’ exposures as less risky. Such a decision requires a trade-off between the positive externalities of enabling greater lending to carbon-reducing activities and the increased risks to the financial system that such lending might produce. This is a discretionary question about which reasonable people can disagree. The current academic debate pushes this question out of sight, suggesting that it is a perversion of the regulators’ statutory mandates to consider it in the setting of bank capital requirements.\textsuperscript{41} But answering it—even if only implicitly—is an unavoidable feature of the exercise of regulatory discretion in the context of this regime. To ignore the question is thus to conceal the stakes of a hugely powerful governmental tool for regulation of the economy. It is time to take off the blinders.

The Article proceeds as follows. Part I provides a technical and historical overview of risk-weighted capital-requirements, describing the particular incentives risk-weights create for banks. Part II unpacks the two implicit assumptions about how risk-weights are supposed to work. It shows how risk-weights are necessarily discretionary instruments, which (A) can never be empirically “correct,” and (B) always reflect a trade-off between risk management and enabling (or curtailing) credit diffusion. The exercise of this discretion has deep

\textsuperscript{36} See infra Part II.A.
\textsuperscript{37} See infra Part IV.A.
\textsuperscript{38} See infra Part IV.A.iii.
\textsuperscript{39} See infra Part IV.B.
\textsuperscript{40} But see discussion supra note 28.
\textsuperscript{41} See, e.g., ALEXANDER & LASTRA, supra note 5, at 28 (arguing, “[w]hilst it may seem attractive to encourage green lending through capital requirements, it is important that the prudential regime be risk-based, not based on other objectives. Otherwise, the whole regime could be undermined, causing risks to financial stability that would undermine the longer-term agenda.”).
consequences for the allocation of credit across the economy. Part III argues that climate-informed risk-weighting is lawful by explaining the nature of Congress' delegation of the authority to the banking regulators to set risk-weights. In particular, it highlights examples—totally absent from the existing scholarship—of inter-branch dialogue with respect to the trade-off embedded in risk-weights. Part IV considers the administrability of climate risk-weighting, demonstrating how regulators have navigated similarly thorny data and prognostication issues in the recent past.

II. HOW CAPITAL REGULATION WORKS

To understand the nature and stakes of the debate over incorporating climate considerations into risk-weights, it is crucial to understand the underlying purpose and mechanics of bank capital regulation. Section A describes the origins of bank capital requirements, and the emergence of the risk-weighting as part of this regulatory scheme. This brief history highlights how capital regulation has always entailed subjective, discretionary decisions about how to manage prudential risks to banks. Section B explains the mechanics of how risk-weighting works, and the particular incentives it creates for banks.

A. The Origins of Capital Requirements

Banking is a unique enterprise, and capital regulation is a unique regime tailored to its specific business model. Banks act as “instrumentalities of the federal government,” expanding the money supply by extending credit into the real economy. Because banks are publicly subsidized through deposit insurance, access to the Federal Reserve’s discount window, and the implicit subsidy of bailouts, banks are able to borrow more cheaply than other firms. A customer’s checking account is a form of short-term debt: it is a liability claim against the bank which can be redeemed on demand. In the classical conception, banks are in the business of “maturity transformation”: they sell their own short-term debt, make long-term loans to other entities, and make money on the interest rate differential

42. See Barr & Miller, supra note 35.
(or the “spread”) between these two activities. In this sense, one core business of banking is generating safe debt to sell to others, enabling the bank to cheaply fund its lending activities.

By their nature, banks are thus more leveraged than most firms in the economy: a greater share of banks’ liabilities are debt, rather than equity. This makes banks vulnerable to insolvency since a bank’s equity shareholders can absorb losses in its lending portfolio, but its more numerous creditors—like depositors—must be repaid regardless. And if a bank becomes insolvent, U.S. taxpayers must ultimately absorb the cost of fully compensating its depositors through the FDIC’s Deposit Insurance Fund. Accordingly, taxpayers have a strong interest in ensuring that banks have sufficient equity capital to absorb losses, so that the FDIC does not have to bail them out. Capital regulation is the primary mechanism for ensuring this public interest.

U.S. bank capital regulation falls into three broad “pillars.” Pillar 1 sets numerical standards for calculating the minimum amount of capital which a bank must hold; Pillar 2 concerns best practices for risk-management beyond these minimum requirements, including requiring “stress tests” for evaluating banks’ resiliency; and Pillar 3 imposes disclosure requirements related to banks’ capital adequacy. This Article focuses on Pillar 1 requirements. As we will see, even the rules for defining what constitutes “capital” for bank regulatory purposes are complex. But for ease of comprehension, it is helpful to think about capital


47. See Gary Gorton & George Pennacchi, Financial Intermediaries and Liquidity Creation, 45 J. Fin. 49, 50–51 (1990) (arguing that banks exist to produce information-insensitive debt).


49. See id.

50. See 12 U.S.C. § 1821(a)(4). While the Deposit Insurance Fund is recapitalized through assessments on banks, the cost of these assessments is ultimately passed onto taxpayers through higher fees for banking services and lower levels of lending. See Peter P. Swire, Bank Insolvency Law Now that it Matters Again, 42 DUKE L.J. 469, 497 n.126 (1992).


52. See infra Part I.B.
requirements as a mechanical calculator: regulators insert information about a bank’s activities and balance sheet, and out pops a minimum dollar-amount that the bank’s shareholders (new or existing) must have invested in the company.

These requirements are nothing new—though they have not always looked as they have today. From the eighteenth century onwards, state and federal authorities have required U.S. banks to be sufficiently capitalized as a condition of receiving a charter. For example, the National Banking Act of 1864 required federally-chartered banks in cities with less than 6,000 people to have at least $50,000 in equity investment. Over time, minimum capital requirements shifted from this type of absolute requirement to relative requirements: in 1939, the FDIC defined a bank’s “capital adequacy” for purposes of evaluating its deposit insurance eligibility as having capital worth at least one-tenth of the assets on the bank’s balance sheet. But until the 1970s, the federal banking regulators largely rejected assessing capital adequacy through standardized formulas. Instead, they considered capital adequacy to be a subjective matter, encompassing only one component of a broader determination of a bank’s “safety and soundness” under the regulators’ supervisory authority. The FDIC’s Manual of Examination Policies noted that “a low capital ratio by itself is no more conclusive of a bank’s weakness than a high ratio is of its invulnerability.”

As the banking system began to come under stress in the 1970s, regulators moved to impose rule-based formulas for calculating minimum capital requirements similar to those now in place. Banks were squeezed on both sides of their balance sheet. On their asset side, sluggish economic growth reduced demand for lending. On their liability side, banks lost depositors as inflation exceeded the


54. Id.

55. See Eric A. Posner, How Do Bank Regulators Determine Capital Adequacy Requirements?, 82 UNIV. CHI. L. REV. 1853, 1865 (2015) (arguing that “regulators considered the riskiness of assets, the quality of management, earnings, and the size of the bank, among other things, and they then made an all-things-considered judgment as to whether a bank was in regulatory compliance”). For a broader discussion of the nature of the supervisory relationship, see Lev Menand, Why Supervise Banks? The Foundations of the American Monetary Settlement, 74 VAND. L. REV. 951 (2021).

56. Lev Menand, Too Big to Supervise: The Rise of Financial Conglomerates and the Decline of Discretionary Oversight in Banking, 103 CORNELL L. REV. 1527, 1559 (2018). Note that both of the prior examples refer to assessing minimum capital adequacy at the outset of a bank’s activities—either as a condition of its chartering or as eligibility for insurance—not as an ongoing concern.

57. See Posner, supra note 55, at 1866.
maximum level at which banks were allowed to pay interest, and alternative institutions like money market mutual funds (MMMFs) offered checking account-like instruments that were more attractive to customers.\footnote{See Charles W. Calomiris \& Stephen H. Haber, Fragile by Design: The Political Origins of Banking Crises and Scarce Credit 194–96 (2014) (describing the role of Regulation Q in limiting the interest banks could offer on demand deposits); see also Daniel K. Tarullo, Banking on Basel: The Future of International Financial Regulation 33–34 (2010).} As a result, capital-to-asset ratios at banks across the country plummeted, and Continental Illinois—at that point the seventh-largest bank in the country—failed.\footnote{See Menand, supra note 56, at 1560.} Concurrently, the Fifth Circuit curtailed the OCC’s ability to impose capital requirements on banks through individualized directives.\footnote{First Nat’l Bank of Bellaire v. Comptroller of Currency, 697 F.2d 674, 685–87 (5th Cir. 1983).} In light of these challenges, the banking agencies sought, and received, authority from Congress to set generally-applicable capital requirements for all banks through regulation.\footnote{See Menand, supra note 56, at 1561 (describing the passage of the International Lending Supervision Act of 1983). For a discussion of regulatory authorities under the ILSA, see infra Part IV.} Armed with this new power, the regulators moved to implement capital requirements through standardized formulas.

The first such formulaic capital requirements were developed in 1988, through negotiations between the United States and the financial regulators of other “Group of Ten” countries, at the Basel Committee for Bank Supervision (BCBS).\footnote{See Basel Comm. on Banking Supervision, International Convergence of Capital Measurement and Capital Standards (1988) [hereinafter Basel I]; see also Maximillian L. Feldman, The Domestic Implementation of International Regulations, 88 NYU L. Rev. 401, 412 (2013) (describing the role of the G-10 countries).} While the United States could have imposed formula-based capital requirements on its own banks through domestic regulations, it wished to do so in tandem with the supervisors of the other largest banks in the world, for two main reasons. First, U.S. regulators were concerned about the possibility of cross-border arbitrage that would provide a competitive advantage to banks in jurisdictions with more lenient capital requirements.\footnote{See Roberta Romano, For Diversity in the International Regulation of Financial Institutions: Critiquing and Recalibrating the Basel Architecture, 31 Yale J. on Regul. 1, 8 (2014).} Second, and relatedly, they were concerned about the potential spillover effects of failures of undercapitalized foreign banks in


\footnote{59. See Menand, supra note 56, at 1560.}

\footnote{60. First Nat’l Bank of Bellaire v. Comptroller of Currency, 697 F.2d 674, 685–87 (5th Cir. 1983).}

\footnote{61. See Menand, supra note 56, at 1561 (describing the passage of the International Lending Supervision Act of 1983). For a discussion of regulatory authorities under the ILSA, see infra Part IV. Menand argues that the move to impose capital requirements through standardized formulas—as opposed to ongoing monitoring on a contextual basis—was part of a larger effort to deregulate the banking system and attempt to ensure “safety and soundness” through market mechanisms.}


\footnote{63. See Roberta Romano, For Diversity in the International Regulation of Financial Institutions: Critiquing and Recalibrating the Basel Architecture, 31 Yale J. on Regul. 1, 8 (2014).}
The deregulation of global capital markets and growth of “Eurodollar” accounts—dollar-denominated money claims generated by banks outside the United States—meant that foreign banks were becoming ever-more interconnected. And regulators perceived Japanese banks to be particularly over-leveraged, and thus a potential source of financial contagion if they were to become insolvent. In order to force Japan and the other rich countries into agreement, the United States and the United Kingdom negotiated a bilateral agreement on minimum bank capital requirements, then intimated that they would close their financial markets to counterparties from countries that had not adopted such standards.

The result of these negotiations was the “Basel I” agreement. The Basel I signatories agreed to implement minimum domestic capital regulations via a standardized formula. This formula introduced the notion of risk-weighting: Banks required to fund at least 8% of their risk-weighted asset exposures through equity capital. The Basel I accord was neither a formal treaty nor executive agreement, and there is no mechanism in international law requiring its domestic adoption. Still, Basel I and its successor agreements have been widely implemented: the BCBS produces regular reports on its members’ harmonization with the international framework, and there is diplomatic pressure within the Group of 20 countries to adopt the accord. Other multilateral institutions like the International Monetary Fund and World Bank sometimes require developing countries to implement the Basel framework in the context of accession or loan assistance. While non-binding, the BCBS recommendations have thus become ubiquitous in international financial regulation.

From the Basel I agreement onward, the formulas used to set minimum capital requirements for banks have incorporated “risk-weights” that arithmetically adjust the importance of the assets on the banks’ balance sheet. Basel I assigned all exposures one of four risk-weights: 0%, 25%, 50%, and 100%.

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70. See Barr & Miller, supra note 69, at 20; Barr, supra note 68, at 985.
framework has become more complex as it has been revised over time, but the use of risk-weights in calculating minimum capital requirement has remained a central feature of the regime. The “Basel II” framework, adopted in 2004, made these categorizations more granular and introduced an “advanced internal ratings-based (IRB) approach,” allowing some banks to apply risk-weights to the assets on their balance sheet based on their own credit risk models (within certain parameters set by the regulators). 72 “Basel III,” completed in 2010, introduced new capital requirements that are also keyed to risk-weighted assets. 73 Basel III also refined somewhat the typology for assigning different assets risk-weights, but for the standard, non-IRB approach applicable to most U.S. banks, the risk-weights applied still look relatively similar to the four buckets created by Basel I. 74 While capital requirements will continue to evolve as regulators negotiate and implement “Basel IV,” risk-weighting seems certain to be here to stay. 75

B. The Role of Risk-Weights

72. BASEL COMM. ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS (2004) [hereinafter BASEL II]; see also TARULLO, supra note 58 (describing and critiquing Basel II). The United States only proposed to implement the “advanced approaches” model in Basel II for a small number of large banks, omitting the new guidelines for the standardized approach. See Risk-Based Capital Standards: Advanced Capital Adequacy Framework — Basel II, 72 Fed. Reg. 69,288, 69,291 (Dec. 7, 2007) [hereinafter U.S. Basel II Rules] (requiring large banks to use the advanced IRB approach). Because of the delay in implementation, the Basel II rules were not in place at the time of the 2007–08 financial crisis. See Romano, supra note 63, at 15. For discussions of how these internal ratings-based models work, see Erin Lockwood, Predicting the Unpredictable: Value-at-Risk, Performativity, and the Politics of Financial Uncertainty, 22 REV. INT’L POL. ECON. 719, 720 (2015) (noting that “the IRB approach for assessing credit risk capital requirements is based on a 99.9 percent nominal confidence level, a one-year horizon, and a supervisory model of credit losses embodying particular assumptions about the underlying drivers of portfolio credit risk, including loss correlations among different asset types”); ANN GRAHAM ET AL., 3 BANKING LAW § 80.12 (2022) (describing the IRB approach for assessing credit risk). Note that IRB approaches are not currently binding on most U.S. banks; see infra note 283 and accompanying text.

73. BASEL III, supra note 51. These requirements are summarized infra note 95.

74. See infra text accompanying notes 281–284.

Today, U.S. banks must have capital worth at least 8% of the risk-weighted value of their assets.\(^\text{76}\) Because different kinds of bank loans and purchases ("exposures") are assigned different risk-weights, two exposures that are nominally identical in value can result in different regulatory calculations of how well-capitalized the bank is. To understand how risk-weights work, suppose that a bank buys a bond worth $100. The associated capital requirement for the bank varies based on the risk-weight assigned to that bond. Assuming an 8% risk-weighted capital requirement (and ignoring the rest of the bank’s balance sheet), a risk-weight of 100% applied to the bond means the bank must fund at least $8 of the bond purchase through equity capital. In contrast, a risk-weight of 200% means the bank must fund $16 of the bond purchase through equity capital. A risk-weight of 0% drops the bond out of the numerator of the regulatory formula, so the bank need not fund any of the purchase through equity for purposes of risk-weighted requirements; it can fund the purchase entirely through borrowing. This exercise is done for all of the assets on a bank’s balance sheet in tandem: the sum of all the bank’s assets multiplied by their respective risk-weights, divided by the total amount of capital on the bank’s balance sheet, must be a percentage greater than or equal to the minimum requirement. Note that banks are not required to “hold” this capital in a separate fund; it is fungible with the banks’ other liabilities.\(^\text{77}\) Some proportion of a bank’s loans are funded through depositors’ money, while another part is accounted for on its balance sheet through the value of the bank’s equity capital.

Simultaneously, banks are subject to a “leverage ratio” requiring them to fund at least 3% of their exposures through equity capital—regardless of their risk-weighted capital requirements.\(^\text{78}\) While seemingly duplicative, the leverage ratio

\(^{76}\) 12 C.F.R. § 3.10(a)(1)(iii) (2023) (national banks and savings associations); 12 C.F.R. § 217.10(a)(1)(iii) (2023) (Fed-supervised institutions); 12 C.F.R. § 324.10(a)(1)(iii) (2023) (FDIC-supervised institutions). Note that other risk-weighted requirements beyond the “core” capital requirements raise this threshold higher. See infra note 95.

\(^{77}\) See ANAT ADMATI & MARTIN HELWIG, THE BANKERS’ NEW CLOTHES: WHAT’S WRONG WITH BANKING AND WHAT TO DO ABOUT IT 5 (2014) (arguing that the claim that banks are required to “hold” capital is “nonsensical and false”).

\(^{78}\) 12 C.F.R. § 3.10(a)(1)(v) (2023) (national banks and savings associations); 12 C.F.R. § 217.10(a)(1)(v) (2023) (Fed-supervised institutions); 12 C.F.R. § 324.10(a)(1)(v) (2023) (FDIC-supervised institutions). The leverage ratio is calculated as a proportion of the bank’s total Tier 1 capital, defined infra note 94. The Basel III framework also imposes a distinct “supplementary leverage ratio” (SLR); while the ordinary leverage ratio only considers on-balance sheet exposures, the SLR also incorporates many
and risk-weighted capital requirements are symbiotic. Without a leverage ratio, a bank could theoretically infinitely balloon the size of its balance sheet, purchasing 0%-weighted securities through debt alone. And by requiring banks to fund more of the specific exposures likely to lose value with equity, regulators can prevent banks from loading up on the riskiest assets and impose a lower overall leverage ratio than they might otherwise.

The design of risk-weighted capital requirements—and the incentives it creates—both stem from the fact that banks generally wish to reduce the amount of their activities they fund through equity capital. Banks face a continuous obligation to meet their minimum capital requirements. Conventional wisdom (and bankers' lobbyists) argue it is costlier for banks to finance themselves through equity than debt, such that capital requirements constrain how much lending a bank can do on the asset-side of its balance sheet. This claim is hotly contested in the finance literature. But regardless of the answer to this theoretical question, it off-balance sheet exposures. The minimum SLR ranges from 3% for certain banks that use the advanced internal ratings-based approach to 6% for insured depository institutions affiliated with globally-systemically important banks. See DAVIS POLK & WARDWELL LLP, SUPPLEMENTARY LEVERAGE RATIO (SLR) VISUAL MEMORANDUM (2014), https://www.davispolk.com/sites/default/files/09.12.14.Supplementary_Leverage_Ratio.pdf.


80. See Prasad Krishnamurthy, Rules, Standards, and Complexity in Capital Regulation, 43 J. LEGAL STUD. S273, S286 (2014); see also Aaron Klein, Risk Weights or Leverage Ratio? We Need Both, BROOKINGS (Dec. 22, 2016), https://www.brookings.edu/opinions/risk-weights-or-leverage-ratio-we-need-both/.

81. Failure to meet minimum capital requirements can be grounds for a cease-and-desist order, activities restrictions, and forced disposition of the bank's assets. See 12 U.S.C. § 1831(o).

82. For a standard textbook explanation, see FREDERIC S. MISHKIN, THE ECONOMICS OF MONEY, BANKING AND FINANCIAL MARKETS 227 (10th ed. 2013) ("Because of the high costs of holding capital . . . bank managers often want to hold less bank capital than is required by the regulatory authorities. In this case, the amount of bank capital is determined by the bank capital requirements.").

83. See Franco Modigliani & Merton H. Miller, The Cost of Capital, Corporation Finance and the Theory of Investment, 48 Am. Econ. Rev. 261 (1958) (a foundational proof that firms are indifferent between debt and equity financing in a hypothetical perfectly efficient market); Anat R. Admati et al., Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is Not
is undisputed that banks have chosen to be highly leveraged, operating near the minimums required by risk-based capital requirements. This is in part due to the favorable tax treatment afforded to interest paid on debt. Since banks generally wish to reduce their relative level of capital—funding a greater share of lending through debt rather than equity—banks are incentivized to engage in transactions that reduce the regulatory calculation of how much capital they need.

Since banks can earn a higher rate of return on riskier loans than safe ones, risk-weighted capital requirements aim to limit banks’ profit-seeking motive to fill their balance sheet with the highest-risk loans. But risk-weighted requirements also create a parallel incentive: for banks to make the highest-risk loans they can among the possibilities assigned a given risk-weight. This phenomenon is called “reaching for yield.” Banks frequently evaluate potential transactions based on the risk-weight that regulators will apply to the activity: if two otherwise-identical loans are assigned different risk-weights, the bank will choose to make the lower-weighted loan in order to reduce the share of its balance sheet it must fund through equity. Accordingly, banks are incentivized to allocate investment to those


84. U.S. bank capital ratios have steadily fallen since the early 1800s, increasing in recent decades only with the introduction of higher regulatory requirements. Compare GARY B. GORTON, MISUNDERSTANDING FINANCIAL CRISSES: WHY WE DON’T SEE THEM COMING 161 (2012), with Benjamin H. Cohen, How Have Banks Adjusted To Higher Capital Requirements?, BIS QUART. REV. 25 (2013), https://www.bis.org/publ/qtrpdf/r_qt1309e.pdf.

85. See Admati et al., supra note 83, at 19 (discussing the tax distortion); id. at 41–42 (arguing that once a bank is highly leveraged, there are strong incentives for it to remain leveraged, and that managerial compensation packages incentivize bank leverage).

86. See Romano, supra note 63, at 14 n.35.

87. See Klein, supra note 80.


exposures with the greatest delta between the assigned risk-weight and the bank’s risk-adjusted rate of return. A high-yielding loan with high associated capital charges may ultimately be less desirable from the bank’s perspective than one with lower rate of return—but a significantly lower risk-weight.

Regulatory decisions about how to assign risk-weights to assets affect individual bank lending decisions. By extension, they are partially determinative of the composition of lending across the financial system. This theoretical proposition can be observed empirically. In general, lower (higher) risk-weights for a given type of exposure are associated with more (less) bank lending to that sector. Natural experiments have shown that raising the risk-weight for a given kind of asset decreases future bank lending to that area. And banks have flooded capital into areas where the regulators’ assigned risk-weights seemed to underweight actual default risk.

The risk-weighted capital requirements negotiated through the Basel III accord have made the bank capital regime significantly more complex, without altering the core incentive to ‘reach for yield.’ First, there are multiple different kinds of “capital” recognized in addition to common equity stock, and different risk-weighted capital requirements keyed to each of these categories of capital.

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90. See infra notes 130–138 (mortgages); infra note 298 (analogous liquidity treatment of municipal bonds); infra note 381 (SME support factor); see also Romano, supra note 63, at 19 (sovereign debt). For discussion of the hypothetical effects of climate risk-weighting, see supra note 25.

91. See infra text accompanying notes 133–136.

92. See, e.g., Romano, supra note 63, at 20 (highlighting the flood of European bank investment in Detroit municipal bonds prior to the city’s bankruptcy).


94. See 12 C.F.R. § 217.20 (2023). There are three different types of “regulatory capital” for purposes of capital requirements, with three additive (and overlapping) requirements. First, common equity Tier 1 capital generally consists of common stock and retained earnings. Common equity Tier 1 capital must equal at least 4.5% of risk-weighted assets. This is expressed by the formula: 

\[ \frac{\text{common equity Tier 1 capital}}{\text{risk weighted bank assets}} \geq 4.5\% . \]

Second, Basel III created a category of “additional Tier 1 capital,” generally defined as other instruments that are paid-in, unsecured, and subordinated to other creditors. Along with common equity Tier 1 capital, these instruments must collectively equal at least 6% of risk-weighted assets, or:

\[ \frac{\text{total Tier 1 capital}}{\text{risk weighted bank assets}} \geq 6\% . \]

Finally, Tier 2 capital generally encompasses liabilities that are difficult to liquidate at the bank’s going-concern value, but may be able to shield other creditors from losses in the event that the bank is insolvent. This includes liabilities such as unrealized gains on
Second, there are additional obligations for many banks which are distinct from the basic risk-weighted capital requirements, but are also calculated in reference to the same risk-weights assigned to the assets on banks’ balance sheets. Some have argued that these increasingly complex capital requirements have done more harm than good, in part because these interconnected rules create significant opportunities for regulatory arbitrage. It is beyond the scope of this Article to answer whether regulators should keep risk-weighted capital requirements in the first place. But so long as they do, the risk-weights assigned to given exposures remain of paramount importance to banks’ decisions about how to allocate credit.

III. WHY RISK-WEIGHTING IS NECESSARILY DISCRETIONARY

Part I explained the role of risk-weights in ensuring that banks are well-capitalized, as well as banks’ incentive to allocate credit to lower-weighted exposures. This Part shows that the criteria used to set risk-weights necessarily involve the exercise of regulatory discretion. This insight is crucial to understanding why arguments that climate risk-weighting is unfeasible, or unlawful, are

certain equity securities, hybrid capital-debt instruments, and subordinated debt of a minimum five-year duration. Incorporating this broader understanding of regulatory capital, banks must have minimum capital of 8% of risk-weighted assets, or: $\frac{\text{Tier 1+Tier 2 capital}}{\text{risk weighted bank assets}} \geq 8\%$. Note that certain community banks are exempt from risk-weighted capital requirements if they choose to be bound by a maximum overall leverage ratio of 9% (which was lowered to 8% for much of the COVID-19 pandemic). See 12 C.F.R. §§ 324.10, 324.12 (2023).

95. There are three other capital requirements that also vary based on asset risk-weights. First, U.S. regulators require banks to have a “stress-capital buffer” as a variable proportion of risk-weighted assets to absorb losses during periods of financial stress without dipping into other minimal capital requirements. (The Basel III framework calls for regulators to impose a fixed 2.5% requirement, which the U.S. regulators initially implemented but altered through rulemaking in 2020). Second, regulators impose a surcharge for globally systemically important banks (G-SIBs) of 1 to 4.5% risk-weighted assets. Third, the Basel framework calls for regulators to create a “countercyclical capital buffer” (CCyB) as a proportion of risk-weighted assets: the required capital would be built up during growth periods of the business cycle and eliminated during downturns to enable banks to increase lending. While the CCyB is formally part of the U.S. regime, it has never actually been used. For all three of these requirements, only common equity Tier 1 capital, discussed supra note 94, can be used in the numerator of the formula. See BARR ET AL., supra note 12, at 332–35; BASEL III, supra note 51.

misguided. These arguments generally rest on two interrelated assumptions; this Part shows why both are incorrect.

First, the argument that climate risk-weighting is unfeasible presumes that regulators do not have sufficient data or technical tools to assign climate-affected exposures the ‘correct’ risk-weight. But there is no such thing as an empirically ‘correct’ risk-weight. Bank capital requirements are not meant to protect banks against quantifiable market risks, but unquantifiable uncertainty.97 Risk-weights must be designed in service of this goal; while they can incorporate empirical data about the frequency of past events, they must also incorporate subjective determinations about the likelihood of future, unforeseeable events. And definitionally, risk-weights serve a different function than market expectations about credit risk—so a gap between the regulatory risk-weight and the market risk premium is not evidence that any particular risk-weight is incorrect. There may be better or worse guesses, but regardless of the quality of the data, the risk-weights that regulators apply are necessarily judgement calls.

Second, the argument that climate risk-weighting is unlawful presumes that risk-weights can only reflect regulatory judgements about the likelihood of future losses on exposures. If regulators set risk-weights that may also reflect other goals—such as the desire to make it more difficult for carbon-emitting industries to get access to capital—so the argument goes, they hamper the intended function of risk-weights in ensuring bank solvency. But from their inception, risk-weights have always reflected a tradeoff between ensuring bank solvency on the one hand, and enabling credit diffusion to favored activities on the other hand. Part III discusses the specific statutory delegation to U.S. banking regulators to set individual risk-weights; this Part is limited to explaining why the assumption that risk-weights cannot reflect non-prudential goals belies reality.

This Part discusses cases are where there is clear documentary evidence of preferential—or punitive—treatment for a particular lending activity. But even when such treatment is not an explicit goal, this trade-off between ensuring a buffer to absorb possible losses and enabling credit diffusion must influence regulatory decision-making under conditions of Knightian uncertainty. Regulators are only human. In exercising the policy judgement necessary to make judgements about uncertain future events, such considerations must also linger somewhere in the background. A regulator’s subjective views about the risks to the financial system posed by carbon-intensive lending is surely informed in part by how dangerous they think such activities are to planetary well-being. Critics of climate

97. For the classic exposition of the difference between risk and uncertainty, see Frank Knight, Risk, Uncertainty, and Profit (1921).
risk-weighting argue that these considerations must not be comlinged. But risk-weighting cannot avoid doing so. If climate risk-weighting is impermissible, so are bank capital requirements writ large.

A. There Are No Empirically “Correct” Risk-Weights

Bank capital regulation, as former Federal Reserve governor Daniel Tarullo has written, “necessarily requires the exercise of policy discretion.”98 While there is substantial scholarly debate about whether the risk-weights used in capital requirements are sensible, it would be a mistake to draw an inference from these debates that risk-weights are either ‘correct’ or ‘incorrect.’ Rather, any particular risk-weight must reflect a regulatory judgement call that is, definitionally, unfalsifiable. In contrast to loan loss reserves—which are meant to create a buffer for absorbing potential losses on loans that are known to be risky—bank capital is meant to create a buffer for absorbing unexpected losses.99 Risk-weights modulate overall capital requirements based on the composition of banks’ balance sheet, but they too must be designed to account for uncertainty about the probability of future losses on each individual bank exposure. While there are better and worse ways to make judgements about risk-weights under conditions of uncertainty, risk-weights can never be definitively “correct.” This is true for at least three reasons.

First, on a practical level, regulators lack the ability to precisely deduce the probability of future losses on a given exposure. Even as they have moved to evermore granular approaches to calculating risk-weights, regulators have made clear that these developments are meant “to improve the risk sensitivity . . . rather than as an effort to produce a statistically precise measurement of risk.”100 For example, the advanced internal ratings-based (IRB) approach introduced by Basel II stood up a “value at risk” (VaR) model for assigning risk-weights based on banks’ probabilistic models: risk-weights were keyed to calculations of the highest possible loss on a given exposure within a 99.9% confidence interval over a one-year horizon.101

98. TARULLO, supra note 58, at 8; see also RICKS, supra note 45, at 179 (noting the inherent imperfection of regulatory capital regimes, in which “a measure of imperfection and arbitrariness has to be tolerated”).
100. U.S. Basel II Rules, supra note 72, at 69,291 (emphasis added).
101. Id. (“the IRB approach for assessing credit risk capital requirements is based on a 99.9 percent nominal confidence level, a one-year horizon, and a supervisory model of credit losses
because these efforts rely on data about past market behavior, they are ill-equipped to assess the risk of prospective events which do not have obvious precedents, such as climate-related losses. For the sake of simplicity, the VaR model also assumes that losses are governed by a normal distribution. But this is not a realistic assumption about the nature of catastrophic tail-end events, whose probabilities may be unknowable ex ante. These problems are not ones that can be solved by further fine-tuning the model, but are inherent to the task of estimating the likelihood and magnitude of future events.

Developing highly precise risk-weights would also require regulators to ascertain the relationship between the performance of any given exposure and its effects on another one. But this, too, is not a practicable possibility. The Basel II regime was designed in part to respond to the criticism that the earlier risk-weight “buckets” did not capture correlations between assets. The VaR model that resulted evaluates the possible correlation between losses on different exposures through a single “systemic risk factor” coefficient applied to all exposures. Clearly, this is an oversimplification: in the event of a housing downturn, losses on home mortgages may be highly correlated with losses on a loan to a residential construction company, but not with losses on a loan to an agricultural one. Yet estimating the pair-specific correlations between all of the exposures on a bank’s balance sheet would be mechanically impossible: a balance sheet of only 500 exposures would require calculating 124,750 correlation calculations. Without

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103. Id.; see also Charles K. Whitehead, *Destructive Coordination*, 96 CORNELL L. REV. 323, 342, 364 (“VaR’s ability to distill risk into a single number requires several simplifying assumptions that can significantly distort results. Nevertheless, VaR is a cornerstone of global financial regulation.”).
104. See TARULLO, supra note 58, at 156 (describing and critiquing the Basel II conceptual scheme for correlation factors).
105. See Krishnamurthy, supra note 102, at 39.
such pair-specific correlations, risk-weights cannot capture the true ‘value at risk’ on a bank’s balance sheet within a given statistical confidence interval.

Second, on a theoretical level, even if regulators had the capacity to develop perfectly accurate risk-weights for every asset on a bank’s balance sheet, doing so would defeat the rationale for imposing risk-weighted capital requirements in the first place. As I have noted, the purpose of capital requirements is to create a buffer for banks to absorb unexpected losses. If risk-weights are to exist, they must therefore account for some degree of uncertainty. One core argument for imposing rule-based capital requirements by formula—as opposed to applying standards on a bank-by-bank basis—is that it is less costly for regulators to make an aggregated assessment of financial sector risk than make individual determination for every regulated institution.\(^\text{107}\) Making all of the calculations discussed in the preceding section would defeat this logic. If regulators knew the exact probability of losses for every asset on a bank’s balance sheet, they could set capital requirements on a bank-by-bank basis more effectively than through a generally applicable formula. Another justification for the development of capital requirements is the precautionary principle: if regulators are unable to predict risks to the banking system with perfect foresight, imposing minimum capital requirements acts as a kind of insurance policy.\(^\text{108}\) By the same token, if regulators could accurately assess tail risk \emph{ex ante}, there would be no need for such insurance: we would not need capital requirements at all, much less risk-weighted ones.

Third, market risk premia cannot be a substitute for risk-weights—nor used to evaluate their “accuracy.” The market risk premium for an asset is the difference between its expected rate of return and the risk-free rate of return.\(^\text{109}\) Importantly, not all exposures are publicly traded, and because capital markets suffer from externalities and other distortions, risk premia cannot reflect all known information about the credit risk of a given exposure.\(^\text{110}\) The history of financial markets includes countless examples of asset bubbles and other empirical instances of asset mispricing—indeed, many argue such credit cycles are constitutive features of

\begin{itemize}
\item \(^\text{107}\) See Krishnamurthy, supra note 80, at S277.
\item \(^\text{108}\) See id. at S280.
\item \(^\text{110}\) The literature on capital market distortions is vast. For a discussion that the higher historic rate of return on equities relative to fixed-income securities, which may not be explainable based on the underlying risk differential between the asset classes, see Jeremy J. Siegel & Richard H. Thaler, Anomalies: The Equity Premium Puzzle, 11 J. ECON. PERSP. 191 (1997).
\end{itemize}
financial markets themselves. Still, it might be tempting to resort to market premia as a second-best solution for assigning risk-weights in order to eliminate the need for regulatory discretion. But this would have perverse consequences: since market risk premia update in real-time, using them to assign risk-weights would be procyclical. Banks’ balance sheets would be judged as riskier during financial downturns when risk spreads go up, requiring them to sell more equity at the same time that the cost of capital is going up. Conversely, banks would be judged to have safer balance sheets at the height of a credit boom—the very point at which it is especially critical that banks have a sufficiently large capital buffer to withstand a financial shock. Risk-weighting must therefore reflect regulatory judgements and entail the exercise of regulatory discretion. No less a free marketeer than Alan Greenspan acknowledged this, noting at the end of his tenure: “[w]e have increasingly tried to make supervision and regulation more like the discipline the market would impose if there were no safety net, but human beings cannot duplicate the market, or adjust as adroitly, and hence we turn to rules and to insistence on prudential policies and procedures.”

B. Risk-Weights Have Always Reflected a Trade-Off Between Minimizing Risk and Ensuring Credit Diffusion

As I have shown, risk-weights can never reflect an empirically “correct” evaluation of risk; instead, they must reflect a regulatory judgement about the uncertain probability of a bank incurring future losses on a given exposure. But regulatory judgements are not limited to considering the probability of loss alone. Rather, from their inception, risk-weights have frequently reflected judgements about the substantive significance of particular exposures, and the importance of enabling (or restricting) credit diffusion to that sector of the economy. As Daniel Tarullo has argued, “setting bank capital requirements requires tradeoff between financial stability and moving capital to productive uses throughout the economy.”

112. All risk-weighted capital requirements are, to some extent, procyclical—but directly pegging risk-weights to market risk premia would make this feature even more acute. See TARULLO, supra note 58, at 117.
113. See id. at 78.
This tradeoff occurs at the macro-level: minimum capitalization levels determine the extent of credit growth, and regulators have explicit tools to regulate the business cycle by modulating capital requirements. But it also takes place at the micro-level: in setting individual risk-weights, regulators evaluate the risk posed by an exposure in the context of how productive they think investments in that sector are. Such determinations have not been limited to “productivity” in a narrow sense: that is, how much investments contribute to aggregate growth in economic output. They have also reflected considerations of the social and political value of different kinds of bank lending activity.

Opponents of climate risk-weighting often argue that consideration of factors other than prudential risk management in setting risk-weights would be impermissible. But in this section, I demonstrate that from the outset of risk-weighting in the 1988 Basel I Accords, risk-weights have plainly reflected considerations other than credit risk to banks. Later iterations of the Basel agreements, and different countries’ implementation of them, are likewise peppered with examples of tradeoffs between financial risk and credit diffusion.

The point of recounting this history is to highlight that such non-actuarial considerations are not deviations from the true intentions of risk-weighted capital requirements; rather, they are constitutive of how this regime came into being and operates today.

There are strong policy arguments that regulators should seek to minimize such considerations in their exercise of regulatory discretion. But this can only ever be an aspiration of risk-weighting, never fully realized. Risk-weighting requires regulators to make judgement calls about the likelihood and severity of unknown future events. In exercising this judgement—whether with respect to climate-related risks, or otherwise—the line between positive estimate and subjective viewpoint is an inescapably blurry one.

115. TARULLO, supra note 58, at 8.


117. See BARR ET AL., supra note 12, at 334–35. The countercyclical capital buffer (CCyB) introduced by Basel III created a capital buffer of up to 2.5% of risk-weighted which regulators could impose—at their option, on a country-by-country basis—at the height of the business cycle to temper credit growth. The reasoning behind this is that regulators can remove the buffer at the trough of the business cycle in order to expand lending; however, the United States has never imposed such a buffer in the first place. 

Id. There is some empirical evidence that having such a buffer in place could have reduced the need for the public liquidity injections during the 2008 financial crisis. See David Aikman et al., Would Macroprudential Regulation Have Prevented the Last Crisis?, 33 J. ECON. PERSP. 107, 116–17 (2019).
i. Tilting Toward Credit

a. Mortgages and Mortgage-Backed Securities (MBS)

Basel I was designed in part to complement national housing policies. In the United States, policymakers have long subsidized homeownership through down-payment assistance, buying and securitizing eligible mortgages, and allowing home mortgage interest to be deducted from taxes.\(^{118}\) Because American banks were the handmaidens of this policy—issuing, securitizing, and holding mortgage debt—U.S. negotiators pushed to give a relatively low-risk weight to residential mortgages, ensuring that American banks could continue holding mortgages on their balance sheets without facing a competitive disadvantage to foreign banks.\(^{119}\) Under Basel I regime, properly underwritten residential mortgages not guaranteed by the government were subject to a 50% risk weight—lower than that applied to corporate debt.\(^{120}\)

The Federal Reserve Board later proposed to apply a 100% risk-weight to residential mortgages in order to “to avoid the appearance or reality of regulatory credit allocation among private sector borrowers,” but reversed course following significant public pressure, reverting to the 50% weight in the Basel I framework.\(^{121}\) For mortgage-backed securities (MBS) assembled by Fannie Mae or Freddie Mac,

\(^{118}\) See generally ALEX F. SCHWARTZ, HOUSING POLICY IN THE UNITED STATES (4th ed. 2010).

\(^{119}\) See RICHARD J. HERRING & ROBERT E. LITAN, FINANCIAL REGULATION IN THE GLOBAL ECONOMY 109 (1995) (“The 50 percent risk weight assigned to mortgages in the Accord . . . reflects a strong preference by several of the Basel signatories to tilt bank finance toward housing.”); BARR ET AL., supra note 12, at 337 (“50% risk-weighting for mortgages has always been understood to also embed a social policy in favor of home ownership”); Romano, supra note 63, at 9; ZARING, supra note 66, at 53.

\(^{120}\) See U.S. GOV’T ACCOUNTABILITY OFF., GAO-17-93, MORTGAGE-RELATED ASSETS: CAPITAL REQUIREMENTS VARY DEPENDING ON TYPE OF ASSET 7 (2016), www.gao.gov/assets/gao-17-93.pdf [hereinafter MORTGAGE-RELATED ASSETS]. To qualify for the 50% risk-weight under the U.S. implementation of the Accord, the mortgage had to be (1) a first-lien mortgage, (2) secured by an owner-occupied or rented property, (3) made in accordance with prudent underwriting standards, (4) not more than 90 days past due, and (5) not restructured except as allowed by certain regulations. Id.

\(^{121}\) See Feldman, supra note 62, at 419.
the risk-weight was 20%; banks only had to include one-fifth of the value of the asset in the denominator in calculating their minimum capital requirements.122

These rules went beyond leveling the playing field for U.S. banks: they made it so attractive for banks to hold mortgage-backed securities on their balance sheets that they ultimately served as another form of regulatory subsidy for the housing industry.

As the Basel regime has been renegotiated over time, the preferential treatment of mortgages and MBS (relative to similarly situated corporate lending) has remained a central feature.123 Under the advanced internal ratings-based (IRB) approaches created after Basel II, banks could apply a risk-weight as low as 7% to highly-rated MBS.124 And the models that banks used to calculate their own capital requirements under the IRB enabled particular discretion to evaluate the risk of tradeable securities such as MBS. Such models dramatically underestimated the price volatility of MBS during the 2007–08 financial crisis.125 In response to the catastrophic consequences of banks’ MBS positions, the Basel III regime from 2013 onward tightened the risk-weights for banks holding loan securitizations.126 Banks are required to apply a supervisory formula that accounts for the tranche’s position

122. See RISK-BASED CAPITAL, supra note 88, at 7. A mortgage-backed security is an instrument backed by a pool of home loans generating cash flows in the form of mortgage payments. The issuer of the security buys the underlying loans, creates a special-purpose vehicle to hold them, and sells the rights to cash flows from the pool in a series of “tranches,” or levels. Id. at 17. Any losses on a given home loan in the pool are first absorbed by the lowest-level tranches, then the “mezzanine” tranches, then the senior secured tranches. Id. Lower tranches bear the risk of losses, and thus trade at a premium relative to the senior tranches. Id.

123. See Romano, supra note 63, at 14 n.34.

124. See MORTGAGE-RELATED ASSETS, supra note 120, at 16. Note that the application of these rules in the United States was long-delayed and limited to the largest banks. See 12 U.S.C. § 5371.

125. See Admati et al., supra note 83, at 51 (“The scope for ‘risk weight management’, i.e. management of models with a view to ‘economizing on equity’ is larger for tradable securities than for loans. This situation creates a regulation-induced bias in favor of securities and against lending. This bias has contributed to the bubble in U.S. mortgage securitization before the crisis, directing funds into real-estate loans that could be easily securitized, rather than business loans that were less easy to securitize.”).

126. See BASEL III, supra note 51, at 3. The belief that senior tranches in MBS—even those with a substantial amount of “subprime” home loans in the underlying pools—were nearly risk-free led to them being used as collateral in “repo” transactions: where one party sells an asset to another with an agreement to repurchase it with interest in a short period of time. Such repos were and are a major way that financial institutions fund themselves. When the housing bubble burst, loss of confidence in MBS froze this core piece of the “money market,” resulting in financial contagion across other spheres of the economy. See generally GARY B. GORTON, SLAPPED BY THE INVISIBLE HAND: THE PANIC OF 2007 (2010).
in the securitization structure, the amount of underlying losses in the mortgage pool, and other related factors. But the core of the preference remains: most residential mortgages still receive a 50% risk-weight in the standardized approach, and GSE-backed MBS a risk-weight of 20%.

Some have argued that the preferential risk-weight treatment of MBS contributed to the emergence of the pre-2006 housing bubble, since banks were eager to purchase and securitize newly-issued home mortgages. And indeed, the results of this preferential treatment can be plainly observed on banks’ balance sheets. Of the $10.75 trillion in outstanding agency- and GSE-backed mortgage securities in the last quarter of 2021, $3.51 trillion, or 33%, were held by U.S. banks (and more in foreign banks). Banks hold these securities in part because they are frequently used as collateral in interbank lending—but this regime would not be possible in the first place were the assets not entitled to a 20% risk-weight (even 0% if guaranteed by Ginnie Mae). For comparison, of the $15.54 trillion in corporate and foreign bonds held in the United States over same period—most of which U.S.

127. See BARR ET AL., supra note 12, at 331. Mortgage lending standards were also tightened during this period. See generally Zachary B. Marquand, Ability to Repay: Mortgage Lending Standards After Dodd-Frank, 15 N.C. BANKING INST. 291 (2011).


129. See MORTGAGE-RELATED ASSETS, supra note 120, at 7.

130. See, e.g., Admati et al., supra note 83, at 51.

banks face a 100% risk-weight to hold—only $710 billion, or 4.6%, were held by U.S. banks.\footnote{132}

Most importantly, there is substantial empirical evidence that the risk-weights assigned to mortgages and MBS affects the cost of mortgage borrowing for homeowners. When Basel II was implemented in the U.K. in 2008, many banks could apply their own internal ratings-based risk (IRB) assessments to mortgage loans, lowering the applied risk-weight from 50% to an average as low as 10%.\footnote{133} Using data on individual banks’ lending patterns before and after the application of the IRB risk-weights, Benetton and coauthors find that each 1% decline in risk-weighted capital requirements for a mortgage reduced the interest rate banks charged by 0.1\textendash}0.16%.\footnote{134} The result is not just lower rates, but more lending to the housing sector.\footnote{135} Conversely, a European Central Bank research paper found that a 1% increase in overall capital requirements for U.K. banks led to a 5.4% decline in the size of individual mortgage loans.\footnote{136} And consistent with the notion that banks arbitrage capital requirements to “reach for yield,” mortgage lending also shifted to higher-risk lending within the housing sector after capital requirements were increased.\footnote{137} Favorable risk-weight treatment of residential mortgages thus acts as a form of regulatory subsidy, balancing prudential risk regulation against the simultaneous goal of ensuring lending to homeowners.\footnote{138}

b. CRA-Eligible Lending

Next, the banking regulators have also deviated from actuarial science to apply lower risk-weights to loans that banks are encouraged to make under the


\footnote{134}Id. at 1.

\footnote{135}Id. at 4.


\footnote{137}Id.

\footnote{138}In a notable inversion of the Basel framework’s preference for home mortgage lending, the Swiss banking authorities have increased the risk-weights for mortgage loans in order to try to dampen demand in the housing sector. \textit{See Pierre Monnin, Council Econ. Pol’y’s, Central Banks and the Transition to a Low-Carbon Economy} 6 (2018), https://www.cepweb.org/wp-content/uploads/2018/03/CEP-DN-Central-Banks-and-the-Transition-to-a-Low-Carbon-Economy.pdf.
This favorable treatment is also evident in the rules around certain real estate exposures. In implementing Basel III, U.S. bank regulators initially sought to curb what they saw as excessive speculation in lending to “high-volatility commercial real estate,” or HVCRE. In the final rules published in 2013, the regulators applied a 150% “goldplating” weight to HVCRE exposures—defined to encompass nearly all commercial real estate loans that did not meet certain underwriting criteria. This exceeded the risk-weight required under the transnational Basel III framework.

Rejecting a barrage of criticism on this proposal from real estate developers and community banks (described in detail in Part IV), the regulators refused to weaken this higher risk-weight for HVCREs. Yet the regulators were sensitive to their arguments that the HVCRE rule could undermine the federal policy goal of subsidizing community development lending. To escape this bind, the regulators carved out an exception for lending under the Community Reinvestment Act. While the initial proposed rule made no mention of the CRA, the final rule exempted exposures that qualified as community development investments under that

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140. U.S. Basel III Rules, supra note 128, at 62,165. The rule defined an HVCRE as any real estate loan except those that (1) finance one- to four-family residential mortgages, (2) would qualify as community development loans under the Community Reinvestment Act, (3) financed agriculture, or (4) met certain prudential standards, such as a low loan-to-value ratio and minimum 15% down-payment.

141. Id. at 62,089. Under the Basel III Accord, banks using the standard approach are to apply a risk-weight of between 70-110% to commercial real estate exposures, depending on the loan’s loan-to-value ratio. An even lower risk-weight can apply if repayment of the loan is not materially dependent on the cashflows from the property. See Basel Comm. on Banking Supervision, Calculation of Risk-Weighted Assets for Credit Risk (CRE) § 20.85-20.87 (2019) [hereinafter Basel CRE].

142. See infra text accompanying notes 264–269.

143. Id.

statute from the higher risk-weight. It is clear that regulators did so because of the political imperative of enabling banks to service and hold such loans on their balance sheets, rather than a reassessment of the underlying risk of such exposures. Regulators justified their rejection of other proposed modifications to the rule using risk-management logic: imposing "an arbitrary threshold [of a minimum 80% debt service coverage ratio to exclude loans from HVCRE treatment] would likely not capture certain . . . loans with elevated risks." But they made no claim that they had reevaluated the underlying risk of loans subsidized by the Community Reinvestment Act. The choice reflected the need to balance prudential risk management against another policy goal: supporting lending to low-income communities.

c. Sovereign Debt

From their inception, the risk-weights in the Basel regime have also been designed to make it less expensive for banks to hold wealthy countries’ sovereign debt securities. Governments have strong incentives to deepen bank demand for their debt securities, both to lower the cost of government financing and to serve other monetary policy and financial stability policy objectives. In recognition of


146. Id. at 62,089.

147. There are many reasons why states seek to subsidize banks’ holdings of their sovereign debt. Most obviously, greater demand for government bonds lowers government borrowing costs, giving greater space for fiscal policy interventions. When lending to banks through the "lender of last resort" function, central banks like to accept their own debt securities as loan collateral, and thus benefit from banks having deep reserves of sovereign debt. See PERRY MEHLING, THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT 24 (2011). Government securities also serve as key "safe assets" for use as collateral—and as a benchmark for pricing risk—in interbank lending, so deep markets for those assets are crucial for ensuring financial stability. See Hockett & Omarova, supra note 46, at 1145–50. Finally, assigning a low risk-weight to government debt also enables the effective implementation of monetary policy. In the United States, many of the “primary dealers” who serve as market makers for U.S. Treasuries (and who the Federal Reserve Bank of New York trades with in order to set interest rates) are federally-chartered banks that must meet capital requirements at the holding company level; placing a cost on holding government securities would hinder their ability to serve as market-makers. See Federal Reserve Bank of New York Policy on Counterparties for Market Operations, FED. RESERVE BANK N.Y. (Apr. 2023), https://www.newyorkfed.org/markets/counterparties/policy-on-counterparties-for-market-operations.
this fact, the Basel I Accord set highly favorable risk-weights for sovereign debt issuances of the agreements’ negotiators, and their allies. These risk-weights did not exclusively reflect a collective judgement about the underlying credit risk of sovereign debt. They also reflected a determination about the social value—and diplomatic necessity—of facilitating lending to particular sovereign governments. The relative preference for sovereign debt continues to be a feature of bank capital requirements to this day.

In the initial 1988 Basel I accord, all sovereign debt and central bank obligations issued by the negotiating states and OECD countries was given a 0% risk-weight, while non-OECD countries’ sovereign debt was assessed at a 100% risk-weight. This increased the attractiveness to banks of holding rich countries’ sovereign debt relative to before the Basel accord. The Basel Committee chose these risk-weights because of political and diplomatic considerations. Countries in the European Community had committed to establishing a single bank regulatory authority that did not discriminate between claims on sovereigns and banks based on country of origin; they could not implement a rule giving a different risk-weights to British and Portuguese government debt. And smaller countries like Canada and Switzerland protested that a rule giving favorable treatment only to the very largest advanced economies (G-10) would unfairly penalize them. As a result, the negotiators decided to use OECD membership status (which all members of the European Community shared) to cleave sovereign issuance risk-weights.

Basel Committee members acknowledged at the time that this method of setting risk-weights diverged from a best-approximation of actual credit risk. The Committee noted that the OECD membership-threshold excluded several important countries with “a good record of meeting their international payment

148. See Romano, supra note 63, at 18 n.46 (“Basel’s preferencing of sovereign debt, as with its preferencing of residential mortgages, is a politically-informed decision”).
149. See TARULLO, supra note 58, at 58.
152. See id. Importantly, Basel I used OECD status not just to determine the risk-weights on sovereign debt, but of the risk-weights applied to exposures to banks and other assets in a given country. This magnified the effects of the in-group/out-group distinction on banks’ balance sheets.
153. See id. at 166 (quoting a BISA deliberative document: “the use of OECD membership as an objective criterion for membership of the club was partly designed to limit the political embarrassment as a result of the Committee itself.”).
obligations,” among them China, India, and South Korea.\footnote{154} And it justified the threshold not in terms of sovereign default risk, but of compatibility with the Washington Consensus regulatory architecture: OECD membership required a “competitive market economy and adherence to certain codes of behavior concerning the freedom of capital movements.”\footnote{155} The only exception to the strict OECD in-group/out-group distinction was made for the “special position” of Saudi Arabia.\footnote{156} Judged too geopolitically important to be left out of the Accord, the Basel Committee also applied a 0% risk-weight to signatories of the International Monetary Fund’s (IMF) General Arrangements to Borrow (GAB) agreement—which included only OECD countries plus Saudi Arabia—“solely as a means to include Saudi Arabia short of just naming the country itself.”\footnote{157}

While Basel I established a preference for banks to hold negotiator countries’ sovereign debt, later iterations of the accords codified and strengthened the preference. This can be observed in three ways. First, later iterations of the Basel framework gave national regulators substantial discretion to lower risk-weights for their own sovereign debt and created diplomatic incentives for other national regulators to accord them reciprocity. Second, the current U.S. regime still plainly reflects these diplomatic dynamics. And third, European regulators have explicitly given lower risk-weights to certain sovereign exposures that relate to EU integration objectives.

First, the political necessity of allowing countries to apply a low risk-weight to their sovereign debt remained decisive even as the Basel Committee abandoned the initial framework. After a number of new (and credit-riskier) countries joined the OECD club, and non-club members complained that the risk-weights were blocking capital flows to developing countries, the Basel Committee dropped the OECD distinction and instead set up a system of sovereign risk-weights based on private credit ratings agency assessments.\footnote{158} But it preserved a carveout allowing countries to weight sovereign debt issued in their own currencies at 0%, and

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154. Id. at 164 (quoting BISA deliberative documents).
155. Id.; See generally Abdelal, supra note 150 (discussing the role of the OECD in liberalization of global capital flows).
156. Bruneau, supra note 151, at 166–67.
157. Id.
permitting other countries’ regulators to apply the same risk-weights. All of the Basel Committee members currently exercise this discretion: accordingly, while sovereign risk weights under the standard approach can range from 0 to 150% under current rules, the average risk weight for sovereign debt applied by banks across the world is just 3%. This exception incentivizes sovereign debt holdings relative to other fixed-income assets. And because only rich countries generally enjoy the privilege of issuing sovereign debt in their own currency, it continues to tilt bank holdings away from developing countries.

Second, while the Basel Committee has abandoned the use of OECD membership as a basis for risk-weighting sovereign debt, the United States still effectively does so. Federal regulators apply risk-weights to foreign assets based on their origin countries’ OECD “Country Risk Classification;” since OECD members are automatically assigned the lowest possible score, their sovereign debt likewise receives the lowest possible risk-weight. The original Basel I rule designed based on diplomatic considerations is thus still binding on U.S. banks: all OECD member states get a 0% sovereign debt risk-weight.

Third, the European Union has further reduced the risk-weights applied to its member states’ sovereign debt—in violation of the Basel framework—in order to ease the challenges of European monetary integration. This is apparent in the EU capital regulations’ authorization of “permanent partial use” of the advanced internal ratings-based approaches in Basel II and III. Under this scheme, the European Banking Authority directs large banks to use their internal models to determine the risk-weights for corporate, mortgage, and other private exposures, but default to the standard risk-weight of 0% for EU nations’ sovereign debt. This discrepancy was particularly significant during the European debt crisis where private credit ratings for Greece and other southern European countries plummeted. The EU likewise allows the use of the lower standard approach for weighting “equity exposures incurred under legislative programmes to promote

159. BASEL CRE, supra note 141, § 20.8 (2019).
161. See id.; see also infra Part IV.A.iii.
162. See infra text accompanying notes 356–358.
164. European Banking Authority, Capital Requirements Regulation (CRR) art. 150(1)(h) (EU) [hereinafter CRR].
specified sectors of the economy.” The Basel Committee has castigated the EU for these deviations from the multinational framework. But since the alternative—making it dramatically costlier for European banks to hold their own sovereigns’ obligations—is politically unpalatable, preferential treatment for sovereign exposures appears to be here to stay.

d. Other Public Sector Debt

Similarly, the Basel accords have always enabled risk-weights that give preferential treatment to subnational and other public sector entity (PSE) debt, deepening bank demand for those government securities. Basel I declined to set risk-weights for sub-sovereign public sector entities “in view of the special character and varying creditworthiness of these entities,” delegating the decision to domestic regulators implementing the accord. The current Basel framework retains this preference, setting standardized risk-weights for PSEs but giving regulators discretion to treat certain PSEs as identical to its sovereign debt. Because the framework only gives examples of when exercising such discretion may be appropriate, regulators have significant latitude to lower risk-weights for provincial and local government exposures. The European Union has used this discretion to treat local governments and regional authorities in Austria, Denmark, Lithuania, Luxembourg, the Netherlands, and

166. CRR, supra note 164, art. 150(1)(h).


169. See BASEL CRE, supra note 141, § 20.9 n.6.

170. Id. The framework gives three specific examples of how revenue-raising powers might counsel in favor of exercising the discretion, while also noting “there may be other ways of determining the different treatments applicable to different types of PSEs, for instance by focusing on the extent of guarantees provided by the central government.” BASEL COMM. ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS 322 n.260 (2006), https://www.bis.org/publ/bcbs128.htm. The European Union has used this discretion to treat local governments and regional authorities in Austria, Denmark, Lithuania, Luxembourg, the Netherlands,
to apply a uniform 20% risk-weight to all PSE exposures with a maturity of three months or less. While the Basel Committee has asserted that this policy is not permitted by the Basel framework, the EU does not appear to have plans to change course.

The impact of this preference is magnified by the fact that the Basel framework allows regulators to defer to other countries’ assessments of the proper risk-weight to apply to public sector entities in their countries. The United States, Europe, and Canada all grant such reciprocity. Since this treatment is granted uniformly to all countries’ regulatory determinations, it strains credulity to imagine that the reciprocity policy reflects a considered judgement that each national regulator has accurately keyed the risk-weights it assigns to domestic PSEs to credit risk. Nor can be it justified on the grounds that it prevents cross-border arbitrage, since it would otherwise be costlier for foreign banks to hold favored PSE obligations if other countries applied the non-reciprocal risk-weights. In the United States, this regime has the perverse effect of American banks sometimes applying a lower risk-weight to foreign-issued subnational government debt than less risky...

Sweden, and Finland as identical to sovereign debt. See CRR, supra note 164, art. 115(2); List of EU Regional Governments and Local Authorities Treated as Exposures to Central Governments under Article 115(2) of Regulation (EU) 575/2013, EUR. BANKING AUTH., https://www.eba.europa.eu/sites/default/documents/files/document_library/1027720/2022.03.07%20Updated%20list%20of%20RGLA%20treated%20as%20exposures%20to%20CG%20%28Article%20115%20%29%20CRR%20.xlsx (last updated Mar. 7, 2022).

171. CRR, supra note 164, art. 115(5) (EU); RCAP, supra note 167, at 33.

172. See BASEL COMM. ON BANKING SUPERVISION, supra note 170, at para. 38. Note that the BCBS stated that its data suggested that the EU’s deviation from the framework was not material. Id. The EU has not proposed any revision to that section of the Capital Requirements Regulation.

173. BASEL CRE, supra note 141, § 20.9. Basel I did not grant such discretion, stating that foreign PSEs originating from OECD countries should receive a 20% risk-weight. See BASEL COMM. ON BANKING SUPERVISION, supra note 170, at para. 38.

174. 12 C.F.R. § 3.32(e)(3) (2023); CRR, supra note 164, art. 115(4); Canadian Office of the Superintendent of Financial Institutions, Capital Adequacy Requirements 4.1.2 para.19 (2023) [hereinafter CAR]. For all OECD members (i.e., most of the E.U. states) this minimum risk-weight is 0%. Id. at 4.1.2. The United States allows banks to apply the home country supervisor’s risk-weight so long as it is “not lower than the risk weight that corresponds to the PSE’s home [country’s sovereign debt].” 12 C.F.R. § 3.32(e)(3)(ii) (2023). If the foreign regulator does not apply a lower risk-weight, the United States can differentiate between general obligation and revenue obligation exposures for foreign public sector enterprises. Id. § 3.32(e)(2) (2023).
U.S. municipal debt. The favorable treatment of subnational debt thus plainly reflects considerations other than an assessment of underlying credit risk: namely, the desire for diplomatic comity, and to ease funding constraints for local governments.

ii. Tilting Away from Credit

The Basel Committee and U.S. banking regulators have facilitated bank lending to certain favored sectors by applying risk-weights that arguably undervalue the underlying credit risk of those loan exposures. By the same token, they have also sought to discourage certain kinds of lending by applying punitively high risk-weights. This is most apparent where regulators have applied the highest possible risk-weight of 1,250% to particular exposures; assuming an 8% overall capital requirement, this risk-weight requires banks to fund 100% of those activities, dollar-for-dollar, through common equity and other Tier 1 capital. This section details several such examples. The examples presented here are surely not the only such cases where the applied risk-weights over-estimate underlying credit risk. But

175. The U.S. regulators apply a 20% risk-weight to general obligation American municipal bonds and a 50% risk-weight to revenue obligation bonds. 12 C.F.R. § 3.32(e)(1) (2023). Ordinarily, U.S. regulators apply a similar differential to general versus revenue obligation PSE exposures but will defer to the home country regulators if they apply a lower risk-weight to the exposure. Id. § 3.32(e)(3) (2023). Since many countries do not distinguish between revenue and general obligation bonds in this manner, this incentivizes holding foreign exposures. See generally GAIL RADFORD, THE RISE OF THE PUBLIC AUTHORITY: STATE BUILDING AND ECONOMIC DEVELOPMENT IN TWENTIETH-CENTURY AMERICA 5, 141–43 (2013) (describing the uniquely American origins of revenue bonds).

176. Regulations Q and Y; Risk-Based Capital and Other Regulatory Requirements for Activities of Financial Holding Companies Related to Physical Commodities and Risk-Based Capital Requirements for Merchant Banking Investments, 81 Fed. Reg. 67,220, 67227 (Sept. 30, 2016) [hereinafter Physical Commodities Proposed Rule].

177. For certain global systemically important banks with risk-weighted capital requirements above 8% of Tier 1 capital, a 1,250% risk-weight can actually impose capital requirements greater than dollar-for-dollar treatment unless otherwise capped. See supra text accompanying note 95.

178. Nor are they the only examples of exposures assigned 1,250% risk-weights. For example, the standardized approach sets forth multiple formulae for determining the risk-weight applied to securitization exposures; the riskiest “equity” tranches in such exposures are assigned the highest risk-weight. See U.S. Basel III Rules, supra note at 128, at 62,233. A bank’s failure to meet a due diligence standard demonstrating a “comprehensive understanding of the features of [the] securitization

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they highlight instances where the regulators—skeptical of a given type of lending—were willing to trade-off the goal of credit-diffusion *entirely* in favor of minimizing risk.

a. Physical Commodity Brokerage

First, the regulators have used punitively high risk-weights to try to discourage activity which they could not lawfully prevent banks from engaging in. Perhaps the clearest example is the capital treatment of certain bank exposures to physical commodity trading. The separation between banking and commerce is a cornerstone of American financial regulation: its purpose is to prevent banks from funding their own commercial enterprises on more favorable terms than they do other firms. But a wave of deregulatory efforts in the 1980s and 90s, culminating in the partial repeal of the Glass-Steagall Act in 1999, created a variety of ways for banks to supply and trade physical commodities like oil, coal, aluminum, and copper. Market manipulation and other malfeasance sometimes followed. Some of these commodity-trading activities were explicitly permitted by the bank

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181. *Id. at 331.*
regulators,^{182} but others were allowed only under a grandfather provision of the Gramm-Leach-Bliley Act (the law that partially repealed Glass-Steagall).^{183}

In 2016, the regulators urged that this grandfather section be repealed.^{184} When Congress did not act, the regulators used risk-weights to take matters into their own hands.^{185} Later that same year, the Federal Reserve Board proposed to increase risk-weight requirements for financial holding companies’ (FHC) physical commodities exposures.^{186} If a physical commodity brokerage activity fit into one of several categories deemed “complementary to financial activity” in Board adjudications, the agency proposed to assign in a 300% risk weight.^{187} But for those

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^{182} Section 4(k) of the Bank Holding Company (BHC) Act, as amended by Gramm-Leach-Bliley, allows financial holding companies (FHCs) to engage in activities which the Board determines “(A) to be financial in nature or incidental to such financial activity; or (B) is complementary to a financial activity and does not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally.” Gramm-Leach-Bliley Act, Pub. L. No. 106–102, 113 Stat. 1342 (1999) (codified as amended at 12 U.S.C. § 1843(k)(1)). While FHCs have generally been given relatively free reign to trade commodity derivatives, the Board has been more reticent to allow them to engage in actual trading of physical commodities. See Omarova, supra note 180, at 299–310. Nonetheless, it has granted such permission to engage in a variety of such “complementary” activities, including selling physical metals that are not authorized for trade in futures exchanges, hiring third parties to refine commodities, and entering into long-term electricity supply contracts with commercial customers. See id.


^{185} Some in Congress urged the Board to act on its own accord through a narrow interpretation of 4(o) of the BHC Act, limiting the grandfather provision to only those specific commodity activities it engaged in prior to September 30, 1997 (not the practice as a whole). See Letter from Senator Sherrod Brown et al., to Janet L. Yellen, Chair, Bd. of Governors of the Fed. Rsvr. Sys. 7 (Feb. 9, 2017), https://www.brown.senate.gov/imo/media/doc/02.09.17%20NPRM%20Comment%20-%20Physical%20Commodities%20and%20Merchant%20Banking.pdf.

^{186} Physical Commodities Proposed Rule, supra note 176. Notably, the Board never released a final rule implementing this proposal.

^{187} Id. at 67,227.
activities only allowed under the statutory grandfather provision, the Board proposed to assign a 1,250% risk-weight.\textsuperscript{188} The Board maintained that because the grandfathered activities included direct ownership and operation of facilities processing dangerous commodities, banks engaging in such activities could potentially be subject to substantial environmental tort liabilities.\textsuperscript{189} While this is no doubt the case, it does not logically follow that the expected return on such investments is zero or negative, counseling in favor of dollar-for-dollar capital treatment.

Instead, the purpose of the 1,250% risk-weight for grandfathered activities was to nudge the banks out of the business of financing physical commodity trading. And indeed, this is what the proposal partially achieved.\textsuperscript{190} In comments to the Board, the Chamber of Commerce and a number of energy utilities argued that no activities conducted under the grandfather provision had ever resulted in a severe loss.\textsuperscript{191} And the banks, of course, seem to think that such activities are on net quite profitable.\textsuperscript{192} Goldman Sachs’ comments on the proposed regulation maintained that the category distinction between the 300% and 1,250% groupings was arbitrary, since it triggered different risk-weights for the same activity depending on what bank was engaging in it.\textsuperscript{193} Yet if the goal was to pressure banks to cease any activity not deemed by the regulators themselves to be “complementary” to banking, the action does not seem so arbitrary. Nor was this the only time that the bank regulators used risk-weights to cement their own jurisdictional authority to define what activities were worthy of credit.

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\textbf{b. Derivatives Clearinghouses}
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\textsuperscript{188} Id.
\textsuperscript{189} Id.
\textsuperscript{190} See John Ayers-Mann, The U.S. Chamber Opposes the Federal Reserve Board’s New Commodity Rule, 36 REV. BANKING & FIN. L. 621, 622 (2017) (“[L]arge FHCs like Goldman Sachs, Morgan Stanley, and JPMorgan reacted to the proposed rule by selling off portions of their physical commodities business over the course of the past three years.”).
\textsuperscript{191} See id. at 629.
\textsuperscript{192} Cf. Omarova, supra note 180, at 317–318.
\end{flushleft}
Next, the banking regulators used punitively high risk-weights to prevent banks from relying on undesired institutions to clear derivatives transactions—and to preserve their own authority over defining such undesirable institutions. The Basel III rules imposed a 1,250% risk-weight on any default fund contributions or trade exposures (like posted collateral) to any clearinghouse that did not meet the definition of a “qualified central counterparty.” Clearinghouses designated as “financial market utilities” under Dodd-Frank, or regulated in an equivalent manner in another country, automatically qualified. Otherwise, the bank in question had to prove to the satisfaction of its regulator that its counterparty met a host of requirements, else face the 1,250% risk-weight. The American Banking Association and banks like Morgan Stanley argued that the regulators should simply predesignate a list of qualifying central counterparties and automatically designate entities registered with the SEC or CFTC as “Securities-Based Swap Clearing Agencies.” But the regulators demurred, preserving their own ability to decide what entities qualified for favorable treatment on a case-by-case basis. The 1,250% risk-weight applied to such contributions was clearly designed in service of this goal—not to estimate the actual counterparty risk of exposures to these institutions.

c. Crypto-Assets

194. A derivate is a contract whose value fluctuates based on the value of an asset or cashflow; a clearinghouse is an intermediary between the contracting parties that will guarantee the contract’s value in the event one party defaults. Clearinghouses require those trading derivatives contracts to post collateral to cover this risk, and net out the proceeds of the many contracts a market participant is party to. Dodd-Frank substantially increased regulation of such clearinghouses, including by imposing capital requirements on them. See Arthur W.S. Duff & David Zaring, New Paradigms and Familiar Tools in the New Derivatives Regulation, 81 GEO. WASH. L. REV. 677, 695 (2013).


196. Id. at 62,166–67.

197. Id.

198. See American Bankers Association et al., supra note 178, at B-46 (arguing that a “top-down” pre-designation approach would be more consistent, efficient, and consistent with the Basel Committee’s framework); Morgan Stanley, Comment re: Regulatory Capital 18 (Oct. 22, 2012), https://www.regulations.gov/comment/OCC-2012-0008-1116 (arguing that “Congress created a comprehensive regulatory regime for [these SEC- and CFTC-regulated entities] in the Dodd-Frank Act, including rigorous capital requirements . . . .”).

199. U.S. Basel III Rules, supra note 128, at 62,097 (noting, “the agencies believe that a static list of QCCPs would not reflect the potentially dynamic nature of a CCP, and that banking organizations are situated to make this determination on an ongoing basis.”).
Finally, international banking regulators have used punitive risk-weights to try to discourage banks from exposing themselves to risks from “cryptocurrencies” and other digital assets. Banks could trigger regulatory capital requirements by investing in digital assets outright, and potentially by providing custody services or accepting such assets as loan collateral. While it is uncertain whether U.S. banks have the legal authority to engage in such activities in the first place, regulators in other jurisdictions have attempted to clamp down on them through risk-weighted capital requirements.

In June 2021, the Basel Committee on Bank Supervision proposed a consultative document proposing to apply a 1,250% risk-weight to all “crypto-asset” exposures, except certain so-called “stablecoins” that are fully backed by reserve assets exceeding the value of all crypto-asset claims; it later watered the proposal down to apply a lower risk-weight to certain hedged exposures. The European Union has moved to implement these rules before the BCBS’ deadline. In a joint statement, the U.S. bank regulators echoed these transnational concerns, stating that they “believe that [banks] issuing or holding as

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201. The OCC issued a series of interpretive letters before November 2021 allowing banks to provide crypto-asset custody services and hold “stablecoins” to facilitate payments. See OCC, Interpretive Letter No. 1170 (July 22, 2020); OCC, Interpretive Letter No. 1174 (Jan. 4, 2021); OCC, Interpretive Letter No. 1179 (Nov. 18, 2021). Since then, however, the banking regulators have looked increasingly disfavorably on such activity, and the Board of Governors of the Federal Reserve issued a policy statement stating that it would presumptively prohibit any Fed-regulated bank from holding of crypto-assets as a principal beyond those activities already authorized by the OCC. See Policy Statement on Section 9(13) of the Federal Reserve Act, 88 Fed. Reg. 7,848, 7,850 (Feb. 7, 2023).


203. See BASEL COMMITTEE ON BANKING SUPERVISION, CONSULTATIVE DOCUMENT: SECOND CONSULTATION ON THE PRUDENTIAL TREATMENT OF CRYPTOASSET EXPOSURES 2 (2022), https://www.bis.org/bcbs/publ/d533.pdf. In this second consultation, the BCBS also proposed to limit a bank’s total exposures to non-stablecoin cryptoassets to 1% of Tier 1 capital. Id.

principal crypto-assets . . . is highly likely to be inconsistent with safe and sound banking practices.”

Having prohibited most banks from engaging in such activity outright, the U.S. regulators have not had to propose what risk-weights they would apply to banks holding crypto-assets on their balance sheets. But in the event of a judicial or Congressional intervention allowing banks to engage in such activity, it seems quite likely that the regulators would likewise apply a punitively high risk-weight to the activity.

These rules are clearly meant to limit banks’ exposures to crypto-assets. Even a bearish view on crypto-assets would not necessarily predict 100% losses on all of these exposures. For example, while Bitcoin has no intrinsic value, many analysts think that it will continue to be traded well into the future, even if at a fraction of its current value. The fact that the BCBS moved to require dollar-for-dollar capital treatment for exposures like Bitcoin clearly reflects its view that crypto-assets “raise financial stability concerns.” And rather than attempting to quantify and price in the externality of these concerns, the BCBS sought to head off such activity entirely.

*   *   *

I have shown that the exercise of regulatory discretion is an unavoidable feature of setting bank capital risk-weights. Such determinations require judgments about the probability of inherently uncertain events about which there can be no empirical data. Enabling credit growth to a particular sector by assigning it a lower risk-weight will tend to generate more financial instability (e.g., creating


206. The American Bankers Association argued that the “punitive high” risk-weight applied to most crypto-assets in the BCBS framework, along with the uncertainty about the classification for more favorable risk-weight treatment, “would seriously inhibit banks from accommodating their customers’ desire for cryptoasset exposure, even if managed conservatively and prudently.” Jeff Williams, ABA Sees Need To Refine Basel Committee’s Bank Cryptoasset Exposure Risk Recommendations, BANKING & FIN. L. DAILY (Sep. 13, 2021), https://www.vitallaw.com/news/financial-technology-aba-sees-need-to-refine-basel-committee-s-bank-cryptoasset-exposure-risk-recommendations/blw010a43bb6b7d9100082a4000d3a8b5a8e0a.


208. PRUDENTIAL TREATMENT OF CRYPTOASSET EXPOSURES, supra note 202, at 1.
a housing bubble) while at the same time enabling economic growth (increasing household wealth). The trade-off to consider is whether the likely pay-off justifies the risk. And in grappling with this inherent uncertainty, regulators’ perceptions about the likelihood and magnitude of risks must rest upon unfalsifiable judgements about the significance of particular kinds of economic activities. As I have shown, normative preferences have at times been explicit motivators for assigning particular risk-weights—but they always must be implicit in the exercise of regulatory discretion. Developing climate-informed capital requirements would require subjective judgement calls about the extent of the threat that carbon-intensive activities pose to the financial system. But these judgement calls must be permissible under the regulators’ delegated authority. They sit at the core of risk-weighting itself.

IV. THE LEGALITY OF CLIMATE RISK-WEIGHTING

Opponents of introducing climate considerations into capital requirements have argued that applying a higher risk-weight to “dirty” lending would “smack of activism.”\(^{209}\) According to this argument, climate-informed risk-weighting would not only exceed the regulators’ statutory authority but imperil their normative legitimacy.\(^{210}\) But as Part II has shown, the act of setting risk-weights is a necessarily discretionary one that requires an implicit trade-off between the goals of ensuring bank solvency and enabling credit diffusion. And at times, serving this latter goal has been an explicit function of the risk-weights that regulators have set. Accordingly, arguments that climate-informed capital requirements may not lawfully consider factors other than financial risk are off-base.\(^{211}\) It may be sensible to minimize such factors as a matter of policy, but they are always present to some degree.

In this Part, I argue that this exercise of regulatory discretion in setting risk-weights is consistent with Congress’s delegation of authority to the banking regulators. Congress gave the regulators wide authority to negotiate international agreements for setting capital requirements and to implement them domestically. The regulators have statutory authority to set risk-weights both through generally applicable regulations and bank-specific directives. And they can consider both risks posed to banks themselves and risks posed to “other public and private

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210. Id. at 313–15.
211. See ALEXANDER & LASTRA, supra note 5, at 28.
stakeholders” and the financial system as a whole.\textsuperscript{212} In each of these contexts, regulators are forced to consider the trade-off inherent to setting risk-weights. But where Congress has disagreed with how the regulators have negotiated this trade-off in specific cases, it has overruled them by statutory enactment—without restricting the broader delegation of authority. At the same time, Congress has restricted courts from adjudicating the validity of any capital requirements. The reasonableness—and lawfulness—of any particular risk-weight is solely determined by dialogue between regulators and the political branches.

The best way to understand this state of affairs is as a delegation for regulatory experimentation. Congress gives the regulators a long leash to set risk-weights in light of their assessment of particular or novel circumstances. The development of an asset bubble may counsel up-weighting an exposure, leaning further in the direction of financial stability, while an overlap with another statutory regime may counsel down-weighting an exposure, enabling credit diffusion. When Congress disagrees with the regulators’ analysis, it pulls back the leash. This dynamic enables the kind of “learning and adaptation” that apostles of regulatory experimentalism have advocated.\textsuperscript{213} It is likewise consistent with the idea that banking regulators should exercise “technocratic pragmatism” to solve complex policy problems.\textsuperscript{214} Bank supervision presents problems where Congress has broad, ill-defined goals—among them, balancing the trade-off between risk management and credit diffusion in assigning risk-weights. As such, Congress delegates authority to administrative agencies to develop the expertise to solve this problem, but does not abandon its ability to intervene when it disagrees with the resulting decisions.\textsuperscript{215}

The history of this delegation is persuasive in evaluating the meaning of the regulators’ legal authority. If climate-informed risk-weighting exceeds the limits of the regulators’ delegated powers, risk-based bank capital requirements, on the whole, could also be unlawful by the same logic, since they plainly also reflect non-prudential goals. Importantly, Congress itself does not seem to think that the way in which regulators have exercised their discretion is unlawful. In the half-dozen


\textsuperscript{215} Compare Jerry L. Mashaw, \textit{Prodelegation: Why Administrators Should Make Political Decisions}, 1 J.L. ECON. & ORG. 81 (1985) (arguing that it is incumbent on regulators to develop expertise in such circumstances), with TUCKER, supra note 6, at 569 (arguing that delegations to central bankers should be limited to areas where the legislature has resolved the core political issue).
statutes, Congress has passed modifying capital requirements since the development of the Basel I rules, it has done nothing to disturb (for example) the explicitly preferential risk-weight treatment given to mortgage lending. In the current judicial moment, it is difficult to predict whether any Congressional delegation to regulatory agencies is safe from judicial scrutiny. But so long as the delegation to set risk-weights remains intact, there is likewise authority to implement climate-informed risk-weights.

A. Congress Delegated Regulators Broad Authority to Set Risk-Weights

In setting capital requirements, U.S. bank regulators have enormous discretion to assign risk-weights as they see fit. Congress delegated the regulators’ authority both to negotiate the terms of capital requirements at the international level and to implement the results through domestic rulemakings and enforcement orders. These regulatory decisions are generally unreviewable by courts—and this, too, is consistent with Congressional intentions. The legality of climate-risk-weighting must be understood in light of these significant authorities.

i. Authority to Negotiate International Standards

As we have seen, the basic architecture of capital regulation—and its attendant risk-weights—are set through international negotiations at the Basel Committee for Banking Supervision. While domestic regulators do sometimes deviate from this framework, they broadly adhere to its structure. The Basel negotiations are thus crucial inputs for the regulatory outputs enforced in the United States: the BCBS is, effectively, a quasi-lawmaking body. Importantly,

216. For a discussion of the current state of the evolving “non-delegation” doctrine, see Cary Coglianese, Dimensions of Delegation, 167 U. Pa. L. Rev. 1849 (2019). The applicability of this doctrine—or the sometimes-overlapping “major questions doctrine”—to bank capital requirements is difficult to speculate on and beyond the scope of this Article.

217. See Feldman, supra note 62, at 427 n.150 (describing how regulators broadly implemented the Basel II accord, but with important deviations).

Congress has assented to this mode of lawmaking.\textsuperscript{219} The International Lending Supervision Act of 1983 (ILSA) makes three specific delegations to regulators to set capital requirements through international negotiations. First, its preambular declaration of policy says that "[t]he federal banking agencies shall consult with the banking supervisory authorities of other countries to reach understandings aimed at achieving the adoption of effective and consistent supervisory policies and practices with respect to international lending."\textsuperscript{220} It further calls for "enhancing international coordination."\textsuperscript{221} Second, the statute calls for the Board and Treasury to use their bargaining power to get other countries to maintain and strengthen capital requirements.\textsuperscript{222} Third, the statute acknowledges the existence of the Basel Committee—the only specific international body mentioned—and specifies that the Federal Reserve Board, OCC, and FDIC shall have equal representation on the Committee.\textsuperscript{223}

Collectively, these provisions authorize regulators to make decisions through negotiations with other foreign banking supervisors at the Basel Committee. Those foreign counterparties’ interests are thus valid inputs to the domestic regulatory outputs. It would be incongruous to specifically authorize consultations aimed at ensuring cross-border consistency, but to presume that these consultations would have no bearing on the shape of domestic regulations; that would be demand-making, not “international coordination.”\textsuperscript{224} In recognition of the ultimate domestic importance of the agreement, Congressional leaders have been in contact with U.S. regulators and held concurrent public hearings during Basel Committee negotiations, attempting to influence their direction.\textsuperscript{225} Some members of Congress have introduced legislation that would restrict U.S. regulators from engaging in the

\textsuperscript{219} See Barr & Miller, supra note 35, at 34 ("The banking agencies have the authority to translate international understandings into minimum capital requirements."). \textit{But see id.} at 35 (arguing that the BCBS is making steps towards transparency, but that there is “room for greater accountability and legitimacy” in the Basel rulemaking process); Feldman, supra note 62, at 403 (arguing that “in some cases, [Basel’s] influence is illegitimate”).

\textsuperscript{220} 12 U.S.C. § 3901(b).

\textsuperscript{221} Id. § 3901(a)(2).

\textsuperscript{222} Id. § 3907(b)(3)(C).

\textsuperscript{223} Id. § 3911(a). Since the Federal Reserve has historically been more favorable to risk-weighted capital requirements than the FDIC, Congress likely aimed to counterbalance these approaches in requiring that both agencies be represented. See Barr & Miller, supra note 35, at 32–33. The Office of Thrift Supervision was likewise granted equal representation by statute, but that agency was eliminated by Dodd-Frank. \textit{Id.} at 32; 12 U.S.C. § 5413. The Federal Reserve Bank of New York also sits on the Basel Committee. See Zaring, supra note 66, at 48.

\textsuperscript{224} 12 U.S.C. § 3901(a)(2).

\textsuperscript{225} See Barr & Miller, supra note 35, at 34.
Basel process. But as it stands, it is clear that regulators have delegated authority to negotiate with foreign counterparties in setting capital requirements and to implement the results through domestic regulations.

ii. Authorities to Implement Domestic Regulations

Next, federal banking regulators have substantial authority to implement the risk-weights in these negotiated agreements—and any deviations from them—as they see fit. Multiple statutory delegations to set and enforce capital requirements are scattered across the banking title of the United States Code. Among these, four distinct sources of authority merit particular attention.

First, the same statute that authorized Basel negotiations, the ILSA, gave regulators wide discretion to “establish[] minimum levels of capital . . . as the appropriate Federal banking agency deems appropriate.” In addition to granting rulemaking authority to set capital requirements, Congress specified that a bank’s failure to meet such requirements could be deemed an “unsafe and unsound practice” resulting in enforcement or closure of the bank.

Second, the Dodd-Frank legislation clarified that the authority to set capital requirements extended to the power to set risk-weights. While the ILSA made no mention of risk-weighting, Dodd-Frank granted an additional delegation to set “minimum risk-based capital requirements,” explicitly specifying that such requirements included “risk-weighted assets in the denominator of those capital

226. See ZARING, supra note 66, at 46–47.
229. Id. § 3907(b)(1).
requirements. Dodd-Frank also set a floor for capital requirements, mandating that they never fall lower than the level prior to the bill’s passage.

Third—and most crucially for present purposes—bank regulators’ authority to set minimum capital requirements extends beyond the capital needed to ensure the safety and soundness of individual banks. The regulators can also set capital requirements as needed to limit macroprudential risks to society writ large. Dodd-Frank stipulates that the regulators shall set capital requirements that address the risks that the activities of such institutions pose, not only to the institution engaging in the activity, but to other public and private stakeholders in the event of adverse performance, disruption, or failure of the institution or the activity.

While the regulators have never invoked this provision, this authority gives them the power to use risk-weighted requirements to internalize some of the externalities of specific kinds of bank lending. The expansiveness of this authority is noteworthy. The statute does not define “public and private stakeholders,” but


232. Id. § 5371(b)(2). Dodd-Frank set two floors for risk-based capital requirements: first, that bank capital be no lower under any advanced internal ratings-based approach than required under the standardized approach; and second, that capital requirements be no lower than they were on July 21, 2010. Capital requirements for large banks are now substantially higher than they were in 2010, so a hypothetical rule change to reduce the capital that must be held against certain “green” exposures would almost certainly not violate the second floor. For further discussion of this requirement, see infra Part III.B.2.

233. Id. § 5371(b)(7)(A).

234. Id. (emphasis added). Such requirements are to be “subject to the recommendations of the [Financial Stability Oversight Council];” see infra note 239. The banking agencies are specifically directed to impose capital requirements relating to the macroprudential risks of derivatives activities, securities lending, and repurchase agreements—“shadow banking” instruments that were seen as partially culpable for the 2008 financial crisis. 12 U.S.C. § 5371(b)(7)(B)(i); see generally FIN. CRISIS INQUIRY COMM’N, THE FINANCIAL CRISIS INQUIRY REPORT 31 (2011), https://www.govinfo.gov/content/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf.

235. Not only have the regulators never invoked this section of Dodd-Frank, but it is also scarcely mentioned in existing legal scholarship—and the specific interpretive questions raised here have never been addressed. For the few mentions of the section, see Jonathan S. Masur & Eric A. Posner, Toward A Pigouvian State, 164 U. PA. L. REV. 93, 100 (2015) (noting in passing that “[Dodd-Frank] also increased capital requirements for financial institutions that pose systemic risk”); Duff & Zaring, supra note 194, at 698 (discussing § 171(b)(7) in the context of derivatives regulation); Cheryl D. Block, A Continuum Approach to Systemic Risk and Too-Big-to-Fail, 6 BROOK. J. CORP. FIN. & COM. L. 289, 318 (2012) (noting that in Dodd-Frank “Congress also responded to the demand for greater macro-prudential regulation” by directing federal banking agencies to implement § 171(b)(7)).
the capaciousness of the language indicates that capital requirements can address risks to institutions other than other banks—and potentially beyond even those institutions traditionally considered to be part of the financial system.\textsuperscript{236} Next, the specification that capital requirements can address risks to other stakeholders in the event of “disruption” of an “activity” means that the activity in question need not even pose a risk of losses to the bank in order to be subject to heightened capital requirements.\textsuperscript{237} And Congress’ examples of how this authority can be utilized make clear that it is intended to adjust capital requirements for specific activities (not simply overall levels).\textsuperscript{238} The statute’s reference to the recommendations of the Financial Stability Oversight Council creates an ambiguity as to what steps would need to be taken to exercise this authority. This unutilized delegation creates a clear legal foothold for addressing macroprudential risks by adjusting bank capital risk-weights.\textsuperscript{239}

\textsuperscript{236} Elsewhere in the United States Code, in a section relating to sharing of information relating to transportation security, the term “public and private stakeholders” is defined as “Federal, State, and local agencies, tribal governments, and appropriate private entities . . . .” 49 U.S.C. § 114(t)(1)(C). While this section does not govern the interpretation of what “stakeholders” means in this context, it does provide persuasive evidence for a broad reading of the phrase.


\textsuperscript{238} For example, Congress specified that this authority should be used to address risks associated with particular lending activities for which a bank has a large market share, or for risks associated with “concentrations in assets for which the values presented in financial reports are based on models.” Id. § 5371(b)(7)(B).

\textsuperscript{239} The language of § 171(b)(7) creates some ambiguity as to the proper role of the Financial Stability Oversight Council in promulgating such regulations, but it is likely that the primary banking regulators (the Board, OCC, and FDIC) have plenary power to implement such rules. Id. § 5371(b)(7)(A).

The section states that “Subject to the recommendations of the [Financial Stability Oversight Council] [FSOC], in accordance with section 120 [12 U.S.C. § 5330], the Federal banking agencies shall develop capital requirements . . . .” as described above. Id. The cross-referenced section grants FSOC the authority to provide for more stringent regulation of financial activity undertaken by regulated institutions that could create or increase financial risks by issuing recommendations to those institutions’ primary regulators to promulgate regulations. 12 U.S.C. § 5330(a). The regulators may either accept those recommendations by imposing the recommended (or similar) standards or explain in writing why they have chosen not to follow the recommendations. Id. § 5330(c)(2). There is no reference to the topic of macroprudential capital requirements in this section—nor any explicit requirement that FSOC issue
Finally, in addition to these rulemaking powers, the federal regulators also have authority to set risk-weighted requirements for regulated banks on an individualized basis.\textsuperscript{240} Federal regulators have long set capital requirements through bank-specific directives; prior to the development of minimum capital formulas, this was a primary modality of bank supervision.\textsuperscript{241} In the regulations establishing such formulas, regulators have repeatedly maintained their recommendations on the matter. \textit{id}. The language that the regulators \textit{shall} issue regulations \textit{subject to recommendations} which FSOC thus leaves uncertain whether the regulators have plenary power to impose such requirements if FSOC is silent or issues or a recommendation against action.

The reading of § 171 that is least disruptive to the rest of the statutory scheme is to read the phrase “subject to the recommendations of [FSOC] . . . in accordance with section 120” as a reference to the general applicability of that section, rather than a necessary temporal trigger for action. This would give the primary regulators plenary authority to promulgate macro-prudential capital regulations whether or not FSOC speaks and preserve the requirement that the regulators either implement FSOC’s recommendations or explain why they have not done so in writing. This reading makes the most sense in light of the rest of the statutory scheme. It does not serve Congress’ ends for the primary banking regulators to have to wait for FSOC to make a recommendation to act on their statutory authority if FSOC is not obliged to do so in the first place. See United Savings Ass’n of Tex. v. Timbers of Inwood Forest Assocs., 484 U.S. 365, 371 (1988) (noting that “a provision that may seem ambiguous in isolation is often clarified by the remainder of the statutory scheme”); see also Yates v. United States, 574 U.S. 528, 537 (2015). And it seems unlikely that Congress would alter the fundamental powers of FSOC—allowing it to impose its will on other independent agencies—in such a vague provision. See Whitman v. American Trucking Ass’ns, 531 U.S. 457, 468 (2001) (noting that Congress “does not . . . hide elephants in mouseholes”).

A textualist interpretation of § 171 probably also supports this reading. Scalia and Garner argue that “subject to” is a subordinating clause which “merely shows which provision prevails in the event of a clash—but does not necessarily denote a clash of provisions.” ANTONIN SCALIA & BRYAN A. GARNER, \textit{READING LAW: THE INTERPRETATION OF LEGAL TEXTS} 126 (2012). The modifying provision simply contradicts some applications of the main clause: here, the Board could not issue a regulation imposing macroprudential capital requirements without responding in writing to any relevant FSOC recommendations. \textit{id}. On the other hand, the rule against surplusage contradicts this reading, since the primary regulators would be required to implement or respond to any FSOC recommendations for macroprudential regulations regardless of whether the “subject to” language appeared in § 171. See Duncan v. Walker, 533 U.S. 167, 174 (2001); \textit{But see} Rimini St., Inc. v. Oracle USA, Inc., 139 S. Ct. 873, 881 (2019) (noting that “[s]ometimes the better overall reading of the statute contains some redundancy.”).

\textsuperscript{240} See 12 U.S.C. § 3907(a)(2).

\textsuperscript{241} See Julie Anderson Hill, \textit{Bank Capital Regulation by Enforcement: An Empirical Study}, 87 IND. L.J. 645 (2012) (describing how capital directives are often enforced informally). For a discussion of the historical evolution of capital requirements, see supra Part I.A.
discretionary authority to set capital individualized requirements “based on the institution’s particular risk profile.” Scholars have noted that the statutory delegation to set capital regulations through prudential “standards”—rather than “regulations”—implies substantial discretion to apply such standards in an individualized way. And Dodd-Frank’s delegation of authority to set capital requirements for large bank holding companies specifically enables the Board to “differentiate among companies on an individual basis or by category, taking into consideration...any other risk-related factors that the Board...deems appropriate.” Accordingly, the other delegations of authority to set capital requirements—including to address the macroprudential risks of certain kinds of lending—can be effectuated through both rules and bank-specific directives.

iii. Codification of Agency Discretion

In the limited cases they have considered on the scope of these powers, courts have interpreted minimum capital requirement determinations to be exempt from judicial review. The ILSA was enacted shortly after a Fifth Circuit decision holding

242. Id. at 656 (quoting 12 C.F.R. § 325.3(a) [FDIC]); see also 12 C.F.R. pt. 208, app. A (2015) [Federal Reserve] (“The final supervisory judgment on a bank’s capital adequacy may differ significantly from conclusions that might be drawn solely from the level of its risk-based capital ratio.”) (cited in Hill, supra note 241, at 656); 12 C.F.R. § 3.11 (2023) [OCC] (“The appropriate minimum capital ratios for an individual bank cannot be determined solely through the application of a rigid mathematical formula or wholly objective criteria. The decision is necessarily based in part on subjective judgment grounded in agency expertise.”) (cited id.).


244. 12 U.S.C. § 5365(a)(2)(A). Note that the Board also has statutory discretion to set capital requirements in response to the findings of individualized stress tests. See Tarullo, supra note 243, at 338.

245. No court has ever considered the extent of regulators’ authority to set capital requirements under the delegations in Dodd-Frank. The paucity of cases on this subject stems from the fact that banks have extremely strong incentives not to challenge their regulatory supervisors in court. See Menand, supra note 55, at 954–55 (describing how the supervisory relationship creates incentives for banks to work closely with regulators); Hill, supra note 241, at 662–63 (noting the role of informal agreements in capital enforcement actions); Gillian E. Metzger, Through the Looking Glass to a Shared Reflection: The
that OCC-imposed bank capital requirements were not supported by substantial evidence.\textsuperscript{246} In a subsequent case, \textit{FDIC v. Bank of Coushatta}, the Fifth Circuit reversed course, holding that Congress’ delegation to set capital directives under the ILSA was committed to agency discretion as a matter of law.\textsuperscript{247} The court held that the delegation to set capital requirements based on what the regulator “deems appropriate” matched the text and structure of the delegation in \textit{Webster v. Doe}—the precedential case for determining whether a given action is committed to agency discretion.\textsuperscript{248} Accordingly, the agency’s capital requirements order was held to be unreviewable under the Administrative Procedure Act, and could only be challenged for an alleged constitutional violation.\textsuperscript{249} The Fifth Circuit further found that Congress had \textit{consciously intended} to shield capital requirements from judicial

\textit{Evolving Relationship between Administrative Law and Financial Regulation}, 78 L. \textsc{Contemp. Prosbs.} 129, 141 (2015) (describing the relative infrequency of judicial challenge to Federal Reserve rulemakings); \textsc{Richard Scott Carnell, Jonathan R. Macey & Geoffrey P. Miller, The Law Of Banking And Financial Institutions} 644 (4th ed. 2009) (noting regulators’ power to coerce banks). \textit{But see} Steffi Ostrowski, \textit{Note, Judging the Fed}, 131 \textsc{Yale L.J.} 370 (2021) (describing areas where the Federal Reserve has been subject to judicial review). While a potential debtor disfavored by a particular risk-weight regime might have incentive to sue the regulators, it would be difficult to imagine such a party having standing. The traceability requirement for constitutional standing would likely pose a significant obstacle to such a plaintiff: they would have to show that the risk-adjusted capital requirements for lending to the plaintiff were a but-for cause of the bank failing to lend to them (or doing so on less favorable terms). \textit{Lujan v. Defenders of Wildlife}, 504 U.S. 555, 560–561 (1992) (holding that a causal connection between the challenged activity and the injury is required for constitutional standing). Since there are manifold other decisions that go into banks’ lending decisions, a court might well hold that the hypothetical line of causation between the regulators’ conduct and the injury in question was too attenuated.

246. \textit{First Nat’l Bank of Bellaire v. Comptroller of Currency}, 697 F.2d 674, 684–85, 687 (5th Cir. 1983); \textit{see also} \textsc{Menand, supra note 56}, at 1013 (describing the history of the ILSA).


249. In both \textit{Coushatta} and \textit{Webster}, the courts held that APA review was unavailable because the language of the statutes “do not leave a court with a meaningful standard against which to judge the agency’s exercise of its discretion.” \textit{Coushatta}, 930 F.2d at 1129; \textit{see also} \textit{Webster}, 486 U.S. at 601.
review, enabling maximum regulatory discretion. Since the passage of the ILSA forty years ago, courts have never struck down a bank capital regulation or enforcement action, repeatedly affirming that such decisions are exempt from judicial review under the APA.

This commitment to agency discretion likely extends to the authority to set risk-weights, as well. Courts do not appear to have ever heard a challenge to a particular risk-weight decision. Yet while Coushatta was about a capital directive to an individual bank, the same discretionary language at issue appears in the statutory section granting regulators rulemaking power to set general capital standards. And the court in Coushatta specifically pointed to the repeated use of the phrase “[as the regulator] deems appropriate” across the statutory scheme as evidence that Congress wished to commit the ability to impose capital

250. In making this conclusion, the court reproduced the text of the ILSA Senate committee report:

The Committee [on Banking, Housing, and Urban Development] believes that establishing adequate levels of capital is properly left to the expertise and discretion of the agencies. Therefore, in order to clarify the authority of the banking agencies to establish adequate levels of capital requirements, to require the maintenance of those levels, and to prevent the courts from disturbing such capital, the Committee has provided a specific grant of authority to the banking agencies to establish levels of capital . . . .


251. See Frontier State Bank Okla. City, Okla. v. FDIC, 702 F.3d 588 (10th Cir. 2012) (reaffirming the commitment to agency discretion in upholding a cease-and-desist order premised on inadequate capital); Builders Bank v. FDIC, 846 F.3d 272 (7th Cir. 2017) (assuming that capital requirements are exempt from APA review but remanding question of whether the presence of capital in six-part “CAMELS” score for prudential evaluation precludes judicial review of the CAMELS score); see also Sunshine State Bank v. FDIC, 783 F.2d 1580, 1582–84 (11th Cir.1986) (deferring to FDIC discretion “within a zone of reasonableness” in classifying loan exposures).

252. See 12 U.S.C. § 3907(a)(1). Note that the ILSA does not specifically reference the authority to set risk-weighted requirements, since it was passed six years prior to their development in Basel I. But the delegation specifically allows regulators to use “such other methods as the appropriate Federal banking agency deems appropriate”—a category which presumably includes the ability to impose risk-weighted requirements. See id. And other statutory delegations to set capital requirements do reference risk-weights. See 12 U.S.C. § 5371(b)(2); 12 U.S.C. § 1831o(c)(1)(A)(ii).
requirements to agency discretion. In a similar case upholding a cease-and-desist order, the 10th Circuit held that the ILSA “commits the setting of capital levels to the FDIC’s discretion without giving us any standard to determine the correctness of the FDIC’s decision”: implying that no matter what instrument was used to determine capital adequacy, the commitment to agency discretion is applicable.

That decision further held that determining how much capital is required to weather risks to banks “is a subjective judgment...[upon which] reasonable minds will differ.” If these risk determinations across a bank’s entire portfolio, they must also be subjective for the individual exposures in that portfolio. By this reasoning, a finding of agency discretion to evaluate portfolio risk in individual adjudications should likewise apply to regulators’ ability to do so through generally-applicable risk-weights.

In light of this commitment to agency discretion, regulators’ decisions about how to set risk-weights are exempt from the “reason-giving” requirements of the Administrative Procedure Act. They are likewise exempt from the obligation to justify their decisions through cost-benefit analysis (CBA). The Federal Reserve Board, OCC, and FDIC are exempt from presidentially-imposed CBA requirements for rulemakings, as well as executive branch review of their rulemakings by the

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254. Frontier State Bank, 702 F.3d at 596 (emphasis added).
255. Id. at 596–97.
256. The only statutory language I have located that appears to bear on the regulators’ general authority to set risk-weights for particular assets is a requirement in the FDIC Improvement Act of 1991 that Federal banking agencies revise risk-based capital standards to ensure that they “(A) take adequate account of (i) interest-rate risk; (ii) concentration of credit risk; and (iii) the risks of nontraditional activities . . . and (C) take into account the size and activities of the institutions and do not cause undue reporting burdens.” Act of Dec. 19, 1991, Pub. L. No. 102–242, § 305(b), 105 Stat. 2355 (codified at 12 U.S.C. § 1828 (note)). But this requirement for revising risk-based capital standards was a one-time directive to promulgate new regulations within 18 months and has since been superseded by legislation giving regulators general authority to impose risk-based capital requirements that must be above those in place on July 21, 2010. 12 U.S.C. § 5371. Note that Congress has also limited the bank regulators’ general ability to set capital requirements for banks with less than $10 billion in assets so long as they meet a minimum leverage requirement. Economic Growth, Regulatory Relief, and Consumer Protection Act, Pub. L. No. 115–174, § 201, 132 Stat. 1306 (2018) (codified at 12 U.S.C. § 5371 (note)).
OMB Office of Information and Regulatory Affairs. Scholarly proponents of CBA have argued that when banking regulators do conduct a cost-benefit analysis, it is often inadequate, failing to quantify many significant anticipated effects of regulation. For example, in 1985, the FDIC issued a regulation raising the minimum capital/asset ratio to 6%, relying on descriptive arguments about increasing risk to the banking system due to economic shocks, banking sector deregulation, and increased competition, without specifically showing whether the 6% ratio was well-targeted in light of these banking sector risks. As I argue below, regulators would enjoy the same flexibility in developing, and justifying, climate-informed risk-weights.

B. Congress Has Intervened in Risk-Weight Implementation Without Restricting this Delegation

Congress gave the federal banking regulators substantial latitude to implement risk-weighted capital requirements as they see fit, without the prospect of judicial review. But they have not shielded regulatory decisions from congressional review. Rather, Congress has repeatedly intervened in the implementation of bank capital requirements—including decisions about what risk-weights to apply to particular exposures. As I will show, these interventions can be understood to reflect congressional disagreement about how regulators have balanced the inherent trade-off between financial stability and enabling credit


259. See Eric A. Posner & E. Glen Weyl, Benefit-Cost Paradigms in Financial Regulation, 43 J. LEGAL STUD. S1, S7 (2014); Posner, supra note 55, at 1855; Revesz, supra note 258, at 561; see also Krishnamurthy, supra note 80, at S281 (arguing that imposing a cost-benefit requirement on the OCC "may have forced the agency to better articulate the reasons and evidence for its concerns with bank risk").


261. In addition to the three examples discussed in this section, Congress has required the banking regulators to assign a 50% risk-weight to single or multifamily housing construction loans meeting statutorily-specified underwriting criteria. They must assign a 100% risk-weight to single family housing construction loans for which the purchase contract is cancelled. See Pub. L. No. 102–233, tit. VI, § 618, 105 Stat. 1789 (codified at 12 U.S.C. 1831n (note)). Congress also directed the regulators to ensure that risk-weights “reflect the actual performance and expected risk of loss of multifamily mortgages.” Pub. L. No. 102–242, § 305(b)(1)(B), 105 Stat. 2355 (codified at 12 U.S.C. § 1828 (note)).
diffusion that risk-weights must reflect.\textsuperscript{262} Indeed, members of Congress have been quite explicit that this is the primary reason for their actions. Yet notably, while Congress has overruled specific regulatory decisions, it has not acted to restrict the broad delegation of authority to set risk-weights described above. Regulators remain free to up-weight or down-weight particular exposures as they see fit—they simply face the prospect that Congress will intervene to rebalance the scales.

In this section, I describe three recent episodes where Congress has overruled regulatory decisions about how to set risk-weights, without limiting the broader scope of the delegation to engage in regulatory experimentation. The cases do not follow a singular pattern. In two instances, Congress moved to make risk-weights looser, but in the other, it moved to make them more restrictive. Regulators’ authority to set risk-weights in light of the threats posed by climate change should be understood in light of this delegation for regulatory experimentation.

i. High-Volatility Commercial Real Estate (HVCRE)

In the last decade, Congress and the banking regulators have sparred over the risk-weights applied to commercial real estate lending. As described in Part II, U.S. regulators felt that the weights in the supranational Basel rules were insufficiently sensitive to risk, implementing a higher risk-weight to try to limit speculation in a potential real estate bubble, and to blunt the impact on banks’ balance sheets of a potential downturn.\textsuperscript{263} In response to pressure from the public that applying this risk-weight would contravene other policy goals, the regulators softened their position—only for Congress to override their actions entirely. This episode highlights that inter-branch dialogue about the tradeoff between risk management and credit diffusion is a core feature of the congressional delegation to regulators to set risk-weights.

Real estate developers and community banks strongly protested the regulators’ proposed HVCRE regulation, arguing that the higher risk-weight would threaten both community development lending and their own bottom lines. Realtors urged that most developers would be unable to comply with the prudential requirements, raising the cost of commercial real estate projects.\textsuperscript{264} Community banks argued that because they originate a disproportionate share of commercial real estate lending, the HVCRE risk-weight would put them at a competitive disadvantage, requiring them to hold more capital than larger depository

\textsuperscript{262} See supra Part II.B.
\textsuperscript{263} See supra Part II.B.1.ii.
institutions. The Council of Community Bank Associations claimed that the rule would limit its members’ willingness to make such loans in the first place.

Notably, in seeking to limit or reverse the HVCRE goldplating, both real estate interests and community banks appealed to credit allocation goals embodied in other regulatory regimes. Real estate associations urged that housing projects subsidized by the Low-Income Housing Tax Credit be exempt from the higher risk-weight, less “the punitive risk weight would directly undermine longstanding public policy in favor of such projects.” The Community Development Bankers Association urged that Community Development Financial Institutions (CDFIs) be exempt from the rule in order to finance lending to low-and-moderate-income communities. The community bankers were explicit in pointing to allocative consequences of the proposed rulemaking:

[R]isk weighting, as proposed, will create new systemic barriers to access to credit within distressed communities and among low income consumers. Over the long run, the proposed risk weightings will result in already underserved communities becoming more economically disenfranchised.

With the exception of the change to exempt CRA-eligible lending, the regulators largely rejected these requests to reverse the HVCRE goldplating. Unsatisfied with this change, industry advocates successfully took their fight to Congress. In 2017, the president of the Independent Community Bankers Association testified before the House Financial Services Committee, advocating that all commercial real estate exposures be risk-weighted at 100%.

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267. See National Ass’n. of Realtors et al., supra note 264, at 11.
268. See CDBA, supra note 265, at 14.
269. Id. at 15.
Consumer Protection Act [S. 2155]—Congress grandfathered in all loans made before 2015 at the lower risk-weight; codified the community development exception into statute; and significantly loosened the prudential-standards exceptions by allowing sponsors to count real property contributions (not just cash) to the 15% down-payment minimum. The change was the result of a bipartisan amendment proposed by Senators Tom Cotton (R-AR) and Doug Jones (D-AL). And it earned support for the bill from the National Association of Realtors and the Real Estate Roundtable. After President Trump signed the regulatory rollback into law, the bank regulators implemented these statutory changes in a new rule the following year.

Just as regulators’ choice to exempt community development lending from higher risk-weight treatment was not motivated by prudential risk management, neither was Congress’ decision to roll back other parts of the HVCRE rule. In particular, the decision to apply a lower risk-weight to loans originated before 2015 regardless of underwriting practices cannot be justified on narrow economic grounds. Rather, Congress intervened to support a particular sector of the economy, making it relatively cheaper for banks to extend credit to it.

272. Economic Growth, Regulatory Relief, And Consumer Protection Act of 2018, Pub. L. No. 115-174, 132 Stat. 1296. This legislation is more commonly known as “S. 2155.” The biggest changes in the statute were to rollback significant features of Dodd-Frank, lowering the thresholds at which banks could be designated “systemically important” and thus subject to heightened regulation and greater supervisory scrutiny. See Graham S. Steele, The Tailors of Wall Street, 93 U. COLO. L. REV. 993, 1013-23 (2022). This legislation has come into greater scrutiny in recent months as a likely antecedent cause of the failure of Silicon Valley Bank. See Todd Phillips, How 2018 Regulatory Rollbacks Set the Stage for the Silicon Valley Bank Collapse, and How to Change Course, ROOSEVELT INST. (Mar. 15, 2023), https://rooseveltinstitute.org/2023/03/15/how-2018-regulatory-rollbacks-set-the-stage-for-the-silicon-valley-bank-collapse-and-how-to-change-course/.


ii. Banks’ Internal Models

While Congress has intervened to loosen the risk-weights applied to sectors where it wants to enable credit diffusion, Congress has likewise tightened risk-weights when it has felt that regulators were not sufficiently responsive to financial risks. As described above, the Basel II agreement introduced an “internal ratings-based” approach for setting risk-weights based on banks’ own market risk models. This regime has been criticized on the grounds that it gives too much discretion to banks to construct these models, enabling them to engage in regulatory arbitrage to reduce their capital requirements. Indeed, some members of Congress criticized the IRB approach concurrently with its negotiation. They argued that even if the resulting risk-weights from the IRB models were more reflective of the underlying credit risk of exposures, the fact that these models might enable banks to lower their overall capital requirements was of concern nonetheless.

In the Dodd-Frank legislation, Congress moved to roll back regulators’ implementation of these IRB models for setting risk-weights. Through an amendment introduced by Senators Collins (R-ME) and Shaheen (D-NH), Congress required banks to meet the minimum capital requirements under the “standardized” approach for setting risk-weights if it would be higher than that.

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277. See supra text accompanying note 72.
279. See Review of the New Basel Capital Accord Hearing Before the S. Comm. on Banking, Housing, & Urban Affairs, 108th Cong. 29 (2003) (Statement of Sen. Paul S. Sarbanes) (“My question to you is whether you have the necessary expertise and resources to implement Basel II and effectively supervise the banks’ internal risk measurements. Everyone says right from the beginning, this is extremely complicated and complex . . . That obviously raises a concern about whether the system can be gamed.”).
280. See Basel II: Capital Changes in the U.S. Banking System and the Results of the Impact Study: Hearing Before the H. Comm. on Financial Services, 109th Cong. 4 (2005) (Statement of Rep. Carolyn B. Maloney) (“[T]he amount by which a bank might be able to reduce its regulatory capital varied widely among banks that appeared to be very similar, to have similar portfolios, and should, in theory, be treated equally under the new standards . . . I am concerned that they also suggest that the complexity of the new standards makes them more prone to widely differing interpretation and results.”).
under the IRB approach. In introducing this amendment, Senator Collins argued that the IRB approach for setting risk-weights was “more lenient than [the standard approach] that apply to small depository banks, when the failure of larger institutions is much more likely to have a broad economic impact.” The implication was that banks regulators swung too far in the direction of enabling credit diffusion in setting up the IRB risk-weight regime.

As a result of the Collins Amendment, six of the eight largest U.S. banks are now bound by the standard approach for setting risk-weights; for much of the past decade, all eight have been. Congress has effectively limited the use of the IRB model for setting risk-weights in the most important cases. Yet notably, Congress did not remove regulators’ discretion to set risk-weights through banks’ internal models: it merely specified that the capital requirements imposed through such models cannot be lower than they would be under the alternative approach. This intervention is consistent with the idea that Congress has delegated the banking regulators the authority to engage in regulatory experimentation—but ultimately, under the supervision of their legislative overseers.

iii. Municipal Bonds as High-Quality Liquid Assets

Finally, in a parallel area of capital regulation, lawmakers overruled regulators’ decisions about whether to classify municipal debt securities as ‘liquid’ in order to deepen the market for those securities. While liquidity requirements are distinct from capital requirements, regulatory classifications of particular exposures as either ‘liquid’ or not have a similar political economy to decisions about how to set risk-weights, entailing a tradeoff between ensuring that banks are sufficiently liquid


283. See Alessandro Aimone, Citi, BNY Mellon escape Collins floor, RISK.NET (July 19, 2022), https://www.risk.net/node/7952111. While two of the eight designated globally systemically important banks (G-SIBs) are currently above the Collins floor, the trend in bank portfolios over the last decade has resulted in the floor being increasingly operative. As of July 2022, all eight of the G-SIBs were bound by the capital requirements in the standard approach. See Joasia E. Popowicz, All top US banks below Collins floor, RISK.NET (Jan. 27, 2022), https://www.risk.net/node/7922981.

284. Kress, supra note 5, at 710–11 (arguing that the Collins Amendment has made the risk-weighting regime insensitive to climate risk).

285. Id.
and enabling lending to a range of potential counterparties. This episode is thus also instructive for understanding the delegation to set risk-weights.

In a 2014 rulemaking implementing the Basel III framework, the bank regulators excluded municipal bonds from the category of “high-quality liquid assets” (HQLAs), which may be used to meet minimum liquidity requirements. The regulators spoke to prudential risk-management criteria in justifying these criteria, arguing that market illiquidity, price volatility, and lack of widespread acceptance as collateral for repurchase agreements limited banks’ ability to rapidly sell munis in the event of a severe stress scenario. In comments on the proposed regulation, cities, municipal bond dealers, and large banks disputed the regulators’ assessment of liquidity in the muni market on technical grounds—and pointed to the consequences of their decision for cities’ access to bank credit. Wells Fargo claimed that if the rule were enacted, “[b]anks, an active and important investor of

286. The Basel III accord introduced the liquidity coverage ratio requirement into the capital regulation framework. See BASEL III, supra note 51, at 9. Liquidity requirements and risk-weighted requirements are complementary: while the former concerns the underlying default risk of a bank’s assets, the latter addresses its ability to exchange such assets for cash quickly in order to survive periods of financial distress. See Andrew W. Hartlage, Note, The Basel III Liquidity Coverage Ratio and Financial Stability, 111 MICH. L. REV. 453, 462-470 (2012). Because both regulatory schemes address what banks can hold on the asset side of their balance sheets, liquidity requirements likewise incentivize banks to “reach for yield,” holding the most profitable exposures are allowed to be consistent with meeting the regulatory standard. Id. at 474. Banks’ demand for such assets to meet such requirements also has an analogous effect on their price.

287. Liquidity Coverage Ratio: Liquidity Risk Measurement Standards, 79 Fed. Reg. 61,440 (Oct. 10, 2014). Under the liquidity coverage ratio requirement, large banks must hold HQLA greater or equal to their total net cash outflows over a thirty-day period of financial stress. There are three kinds of assets that can be used meet the requirement: Level 1 Assets (which can be used at face-value), Level 2A assets (which are subject to a 15% haircut in meeting the minimum coverage ratio), and Level 2B assets (which are subject to a 50% haircut). Level 1 assets include reserves held at central banks, U.S. Treasuries, and other 0% risk weight sovereign debt; Level 2A assets include GSE-sponsored securities and sovereign debt assigned a 20% risk-weight; Level 2B assets include very commonly-traded corporate equities and debt securities. The liquidity coverage ratio requirement applies to banks with at least $700 billion in assets at the holding company level. Medium-sized banks must have HQLA worth at least 70–85% of their net cash outflows, and small banks with less than $50 billion in weighted short-term wholesale funding are exempt entirely. Id. at 61,144–45.

288. Id. at 61,463. Note that the liquidity coverage ratio rule’s treatment of munis was stricter than the Basel III multinational framework, which allowed for exposures to public sector entities to be treated as Level 1 or 2A HQLAs. See DAVIS POLK & WARDWELL LLP, supra note 78, at 15.
long dated municipal debt, will have less demand for municipal securities, creating negative ripple effects for the entire municipal market.”

Because banks do not have to pay taxes on income from smaller municipalities’ bonds, smaller cities, in particular, argued that they would be disadvantaged if banks were not allowed to use their debt to meet liquidity requirements. And larger cities and states argued that the rule acted against public policy by “penalizing U.S. banks for servicing domestic public sector clients” relative to foreign countries, whose sovereign debt was given HQLA status.

These arguments about enabling credit diffusion ultimately won the day with Congress. Just as for the treatment of commercial real estate exposures, the Federal Reserve Board partially reversed course on its own, allowing some municipal bonds to be treated as “[L]evel 2B” HQLA. But city and state governments vigorously lobbied Congress to overrule the other bank regulators and


292. See Liquidity Coverage Ratio: Treatment of U.S. Municipal Securities as High-Quality Liquid Assets, 81 Fed. Reg. 21,223, 21,225, 21,227–21,229, 21,232 (Apr. 11, 2016). To qualify for HQLA treatment, the munis had to be (1) general obligation debt, i.e., not project revenue-supported, (2) investment grade under 12 CFR pt. 1, (3) be issued by a public sector entity (PSE) with a “whose obligations have a proven record as a reliable source of liquidity in repurchase or sales markets during a period of significant stress,” and (4) not be an obligation of a financial sector entity. Id. Munis could serve as no more than 5% of a bank’s total HQLA. This regulation only applied to Board-regulated institutions. Id.
loosen the further Board’s rule. They found overwhelming bipartisan support. In S. 2155—the same 2018 legislation loosening the risk-weights for HVCRE—Congress required the regulators to classify all liquid, readily-marketable, and investment-grade munis as HQLA. Bank regulators implemented the new statutory requirement the following year.

Congress’ intervention reflected the desire to increase banks’ demand for municipal bonds, rather than any empirical disagreement about the actual liquidity of those munis. Remarking on the bill text, Members of Congress explicitly acknowledged that they were making a “compromise... balancing concerns for the long term stability of our financial system” against “continued and reliable access to capital markets for our local governments.” The compromise had its intended effect. A study of the resulting Federal Reserve rule change found a yield-spread between bonds that could and could not be counted as HQLA under the new rules,


295. Economic Growth, Regulatory Relief, And Consumer Protection Act of 2018, supra note 272, § 403, 132 Stat. 1360 (codified at 12 U.S.C. 1828); see also 12 C.F.R. § 249.3 (2023) (defining “liquid and readily-marketable”); 12 C.F.R. § 1.2(d) (2023) (defining “investment-grade”). The legislation defined these munis as Level 2B HQLA. The statute also loosened the Federal Reserve Board’s requirements, eliminating the general obligation debt requirement, 5% ceiling on munis serving as HQLA, and other prudential standards.


which could not be explained based on underlying risk.\textsuperscript{298} Just as with commercial real estate loans, Congress sought to rebalance regulators’ initial tradeoff between ensuring bank solvency and enabling credit diffusion. Not only is balancing such a tradeoff an inevitable feature of setting risk-weighted capital requirements, but the balancing act is one that is done through dialogue between the regulators and Congress \textit{via} the initial delegation of authority. This dynamic is key to understanding the legality of climate-informed risk-weighting.

C. Climate Risk-Weighting is Consistent with the Delegation

In light of the foregoing analysis, it is clear that the federal bank regulators have the legal authority to consider climate-related risks in the context of setting bank capital risk-weights. As Part IV will show, the regulators also have significant flexibility to implement such considerations in whatever manner is most practicable.

To start, the statutory directive to harmonize capital regulations through international negotiations gives regulators the power to make diplomatic concessions in the context of designing and implementing \textit{domestic} capital requirements.\textsuperscript{299} If foreign counterparties wish to implement climate-informed risk-weights—as they appear to do—it is lawful for U.S. regulators to go along with such efforts in the interest of preventing cross-border regulatory arbitrage.\textsuperscript{300} Notably, this delegation for international harmonization makes no inquiry into the motives of foreign counterparties. In other words, whether Basel Committee members believe that climate risks pose a genuine threat to the financial system or not has no bearing on the lawfulness of U.S. regulators agreeing to implement climate-informed risk-weights through international negotiations.

Next, decisions about how to design capital requirements are committed to agency discretion under the law, and thus likely judicially unreviewable save for a finding of a constitutional violation. Regulators could effectively impose climate

\textsuperscript{298} See Jacob Ott, Regulatory Spillover: Evidence from Classifying Municipal Bonds as High-Quality Liquid Assets 17 (Hutchins Ctr. Of Fiscal & Monetary Pol’y at Brookings, Working Paper No. 68 2020), https://www.brookings.edu/wp-content/uploads/2020/09/WP68-Ott.pdf. While the change in yield spread was small—only 5 basis points—it was economically significant relative to the average yield spread between general revenue- and project-supported muni bonds in the experiment’s sample. More strikingly, Ott found that relative to the “change in revenue bond issuance, [HQLA-designated] general obligation bond issuance [increased] by about 30%” following the Fed’s announcement. \textit{Id.} at 3.

\textsuperscript{299} See \textit{Tarullo}, supra note 58, at 8, 117; Greenspan, supra note 114; \textit{Schwartz}, supra note 118; \textit{Herring & Litan}, supra note 118; \textit{Barr & Miller}, supra note 35; \textit{Zaring}, supra note 66, at 53; Risk-Based Capital, supra note 88, at 7; see also supra text accompanying note 88.

\textsuperscript{300} See infra Part IV.B.
risk-weights through individualized determinations of capital adequacy, which courts have explicitly held are committed to agency discretion. 301 Contrary to Professor Christina Skinner’s argument, a generally-applicable rulemaking to change risk-weights would also not be subject to “arbitrary and capricious” review under the Administrative Procedure Act. 302 And even if such a regulation was reviewable, it would likely meet the test for reasonableness under the APA. Professor Skinner makes three arguments for why climate-informed risk-weighting might fall under APA review; all are misdirected.

First, Professor Skinner states that changing risk-weights would have to rest on “firm data evidencing the increased relative riskiness of climate-related assets . . . [and] that evidence could not be abstract or subjectively interpreted.” 303 But as we have seen, the banking regulators are not subject to a requirement to conduct a cost-benefit analysis on rulemakings; they have justified decisions about how to set bank capital requirements without firm data, or even empirical analysis in the first place. 304 For instance, regulators did not cite any data about the particular risks associated with high volatility commercial real estate in justifying their decision to apply a higher risk-weight to such exposures. 305 As discussed in detail in Part IV, regulators have also defined risk-weight categories for evident reasons of administrability, rather than firm data about the differing riskiness of assets inside and outside their boundaries. 306

Second, Professor Skinner argues that “altering risk weights vis-à-vis some corporate loans would appear in tension with other legislation that indicates Congress’s desire to prevent distinctions among corporate exposures.” 307 But the legislation in question—Section 939A of Dodd-Frank, which prohibited federal regulators from relying on credit-rating agencies in any rulemakings—was not born out of a desire to “prevent distinctions among corporate exposures,” but to reduce reliance on institutional actors which were seen as playing a central role in the lead-up to the global financial crisis. 308 Moreover, federal bank regulators have already

302. See discussion supra text accompanying notes 245–257; contra Skinner, supra note 5, at 1336.
303. Skinner, supra note 5, at 1336.
305. Business Roundtable, 647 F.3d at 1149–50.
306. See discussion infra Part IV.
308. Id.; see generally Kress, supra note 5, at 692–97.
differentiated between different kinds of corporate exposures, including after the passage of Dodd-Frank.309

Third, Professor Skinner asserts that adding a climate risk-weight surcharge could be capriciously duplicative since risk-based capital requirements are sensitive to the loan-to-value (LTV) ratio of an exposure.310 If the value of borrower collateral declines as a result of climate-related stranded assets, so the argument goes, the capital charges associated with the exposure would increase on its own. But since the standard approach for calculating capital requirements does not consider the LTV ratio for corporate exposures, and most banks are bound by the standard approach, the change in counterparty risk would have no effect on associated capital charges.311 More fundamentally, risk-weights are intended to capture tail risks which would not be captured by an exposure’s loan-to-value ratio prior to a collapse in value. Relying on an LTV calculation to protect against such tail risks would be counterproductive since the bank’s capital requirements would increase at the same time as they are facing losses on the asset side of their balance sheet. Bank capital is only useful if it is available to absorb potential losses before an unexpected economic shock.

D. Is Climate Risk-Weighting A “Major Question?”

Finally, it is worth briefly considering whether exercising this regulatory discretion to incorporate climate risk into bank capital requirements would fall afoul of the incipient “major questions doctrine.”312 Particularly from 2021 onwards, this doctrine has been used to invalidate regulations that are perceived as highly-novel or addressing topics of “vast economic and political significance” in the absence of a clear Congressional statement of intent. As the Supreme Court has not itself given a clear statement of what this doctrine requires for agencies to lawfully exercise delegated powers, it is challenging to apply it

309. See infra Part IV.A.2.
310. Skinner, supra note 5, at 1336.
311. See 12 C.F.R. § 217.31 (2023); see also supra note 283 and accompanying text (discussing the effective inapplicability of the advanced IRB approach that uses the LTV ratio).
prospectively to a hypothetical climate risk-weighting regulation. But there are several reasons to think that the doctrine is inapposite in this case.

First, the broader statutory framework for bank supervision which capital requirements sit within cannot function under either of the major tentpoles of the major questions doctrine. The purported anti-novelty goal of the major questions doctrine is directly at odds with Congress’ intentional delegations to the banking regulators. In a series of delegations culminating in the Dodd-Frank Act, Congress asked the banking regulators to identify and prophylactically address financial risks before they pose a threat to the economy. These tools must be flexible to be effective checks on highly sophisticated financial institutions searching for regulatory arbitrage opportunities. The core regulatory mandates to regulate “unsafe” and “unsound” practices “have no definite or fixed meaning:” a fact Congress has recognized in the instances where it has restricted use of remedial measures. Likewise, the test of “economic significance” has little coherence when it comes to regulation of globally systemically important banks: any major generally applicable rulemaking will nominally affect financial institutions with trillions of dollars of in assets. If proactively addressing climate-related financial risks is out of bounds, so too is the entire bank regulatory architecture.

Second, while courts have sometimes applied the major questions doctrine to require a “clear statement” from Congress for novel or economically significant regulatory delegations, Congress made such a clear statement for promulgating capital regulations. As I have already described, Congress intentionally gave the bank{218}{222} regulators free rein to design capital requirements as they “deem appropriate,” making whatever risk assessments needed to ensure bank capital adequacy. The accompanying committee report emphasized that “establishing

318. S. REP. NO. 89-1482, at 8 (1966); see also 12 U.S.C. § 1818(e)(1)(C) (limiting the unsafe and unsound activities that can result in removal and debarment of a banker).
319. See Steele, supra note 315.
321. See supra text accompanying note 247.
adequate levels of capital is properly left to the expertise and discretion of the agencies.” 322 A court could well rule that this capacious grant of authority for setting capital requirements is itself unconstitutional under the so-called “non-delegation doctrine.” 323 But if the delegation is constitutional, its application to address climate-related risks is well within Congress’ intended remit.

Finally, the interbranch dialogue between Congress and the banking regulators supports the notion that developing climate-informed risk-weights would be consistent with the regulators’ lawfully delegated authority. It likewise counsels against the application of the “non-delegation doctrine.” As Peter Conti-Brown and David Wishnick have argued, developing the expertise to determine climate change’s threat to the safety and soundness of the financial system—and acting upon that expertise, if necessary—is inescapable if the banking regulators are to fulfill their broad legal mandates. 324 Congress’ repeated post-hoc interventions in regulators’ decisions about how to set risk-weights—amidst an unchanging delegation allowing regulators to set capital requirements through any methods “[deemed] appropriate” 325—affirms that Congress wishes for the regulators to proactively experiment with that authority to respond to exigent circumstances.

It may be difficult to design risk-weights that disentangle genuine financial risks from an imputed desire to steer capital investment away from fossil fuel production. But this is no legal obstacle to the development of climate-informed risk-weights. If Congress disagrees with how the regulators have approached this challenge, it can intervene after the fact. The structure of the delegation to set risk-weights is one that not only allows for regulators to experiment in responding to newly perceived risks, but indeed requires it.

V. THE ADMINISTRABILITY OF CLIMATE RISK-WEIGHTING

As I have shown, applying climate-informed risk-weights to capital requirements is squarely within the banking regulators’ legal authority. It is also practicable for them to so consistent with this legal authority. This is not to say that developing climate-informed risk-weights is easy. Scholars have pointed out the paucity of micro-level data that can be used to assess climate-related financial

324. See Conti-Brown & Wishnick, supra note 5, at 699.
related risks. Yet there are many examples of banking regulators developing risk-weights without reference to such micro-level data. Indeed, the banking regulators have taken significant liberties for the sake of administrability in assigning risk-weights. They have used relatively rough heuristics for grouping and differentiating categories of exposures, and outsourced decision-making to third-party data providers. Section A describes recent examples of such methods of setting risk-weights. While these methods may be inexact, their reasonableness under the regulators’ significant discretionary authority to set capital requirements is self-evident. None of the examples discussed in this section have ever been subject to judicial challenge.

Section B describes the efforts of other international banking regulators to develop climate-informed risk-weights. In and of themselves, these efforts affirm the notion that such a regime is administrable domestically: if others have climbed the mountain, surely the U.S. can, as well. But even more functionally, international efforts give domestic regulators a bird-in-hand for implementing climate-informed risk-weights domestically. Regulators have long deferred to third-party evaluations in setting risk-weights. They formerly relied on private credit ratings agency scores, and currently rely on evaluations made by the OECD. Regulators could use data on climate-related risks from third-party vendors to design a risk-weighting regime; they could also lawfully defer to other countries’ regulatory schemes.

All of the risk-weighting decisions described here should be understood in light of the fact that risk-weights can never be empirically “correct.” Banking regulators are limited by both conceptual barriers to developing precise estimations of credit risk and lack of data and administrative capacity for doing so. Strengthening regulators’ capability to develop more fine-grained risk-weights is a worthwhile policy goal. But it is not a precondition to developing climate-informed


327. See Karl Mathiesen, Rating Climate Risks to Credit Worthiness, 8 NATURE CLIMATE CHANGE 454 (2018) (describing such efforts).
risk-weights. Their existing quiver of policy tools already gives regulators the legal and practical ability to do so.

A. U.S. Regulators Have Sufficient Tools to Develop Climate Risk-Weighting

Even absent reliable data about what particular exposures threatened by climate change are likely to pose heightened risks to banks, regulators have the tools to implement climate-informed risk-weights. Imagine developing a rough heuristic for deciding what assets are uniquely threatened by climate change. One might identify real estate on land less than five feet above sea-level, or whose property insurance premium has increased by more than one standard deviation in recent years. Exposures to firms that cannot diversify away from the use of petroleum inputs, or who face environmental tort liabilities above a certain percentage of their annual net income, might also be deemed particularly risky. These examples will likely strike the reader as too cut-and-dry: surely, the topographic level of a house cannot alone predict the risk that the associated mortgage loan will be underwater. But these are exactly the kinds of heuristics that regulators have used in assigning risk-weights in the past. In an ideal world, one might want regulators to design risk-weights using micro-level data highly tailored to the individual exposures in question. Indeed, this is a core conceptual goal of the advanced internal ratings-based approach to setting capital requirements. But we do not live in an ideal world, and half-measures are sometimes needed.

For the sake of administrability, bank regulators have frequently relied upon such rough heuristics in assigning risk-weights. In recent rulemakings, they have differentiated between exposures in ways that are not clearly linked to underlying credit risk—and explicitly noted lack of administrative capacity as a justification for these decisions. This can be observed in at least three ways. First, in some cases, regulatory decisions have resulted in economically-identical exposures being assigned different risk-weights. Second, regulators have grouped large categories of exposures together for purposes of administrability, even when there is plainly dramatic heterogeneity of credit risk among the exposures in question. Third, regulators have deferred to third parties to determine counterparty creditworthiness in setting risk-weights, even when those parties’ determinations may be unsuitable for the task at hand.

i. Differentiating Exposures

328. For a proposal to create a federal “green” ratings agency, see Anusar Farooqui & Tim Sahay, Investment and Decarbonization: Rating Green Finance, PHENOMENAL WORLD (May 13, 2021), https://www.phenomenalworld.org/analysis/rating-green-finance/.
First, the regulators have used rough heuristics to assess the riskiness of banks’ equity positions. Under the standard approach, regulators apply a 300% risk-weight to banks’ equity positions in companies that are publicly traded, and a 400% risk-weight to equity positions in those that are not. There is no intrinsic economic reason why a privately-held company’s stock is more likely to decline in value than a publicly held one, but the regulators argued that “[e]quities that are not publicly traded are subject to considerable valuation uncertainty due to a lack of transparency and are generally far less liquid than publicly traded equities.”

The regulators did not conduct any cost-benefit analysis for whether a 100% risk-weight upcharge was justified in light of this valuation uncertainty, instead relying on their substantial statutory discretion to set risk-weights.

Second, as discussed above, bank regulators proposed to cleave the treatment of commercial real estate exposures based on a binary distinction as to whether the exposure was “high volatility” or not. While the regulators stated that this latter type of exposures posed higher risks to banks, they did not cite any empirical evidence supporting this claim. Notably, the regulators considered linking risk-weights for commercial real estate to a continual variable such as the exposure’s loan-to-value ratio, which would eliminate the binary distinction. But they declined to do so, explicitly citing the “undue complexity” of such an approach.

Finally, the regulators have set dramatically different risk-weights for physical commodity exposures based on what legal authority the exposure is authorized under. As I describe in Part III, the regulators assigned a higher risk-weight for

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329. 12 C.F.R. § 217.52(b)(5)–(6) (2023). Note that in general, banks are allowed to apply a 100% risk-weight to equity exposures totaling up to 10% of the institution’s minimum capital requirements; these risk-weights only apply to marginal equity exposures in excess of this threshold. Id. § 217.52(b)(3)(iii). There are also higher risk-weights applied to equity exposures to investment firms, and lower risk-weights applied to hedged exposures. Id. §§ 217.52(b)(7), 217.53.


332. See supra notes 139–146, 263–276 and accompanying text.

333. U.S. Basel III Rules, supra note 128, at 62,089 (“Commenters criticized the proposed HVCRE definition as overly broad . . . The agencies have considered the comments and have decided to retain the 150 percent risk weight for HVCRE exposures [modified as described below], given the increased risk of these activities when compared to other commercial real estate loans. The agencies believe that segmenting HVCRE by LTV ratio would introduce undue complexity without providing a sufficient improvement in risk sensitivity.”).

exposures allowed only under statutory grandfather authority; this move appears partially motivated by a desire to discourage such activities, rather than a simple best-guess estimation of underlying risk. The actuarial artificiality of this distinction is reinforced by the fact that all physical commodity exposures allowed because of Board approval received the same risk-weight.

ii. Grouping Exposures

Banking regulators have also used their statutory discretion to group broad categories of exposure together for purposes of administrability. The clearest example of this is the uniform 100% risk-weight regulators apply to all corporate exposures—that is, both business loans and debt securities—under the current standard approach. This regime stems from the statutory prohibition on the reliance on external credit assessment institutions (ECAI) in federal regulations. After the financial crisis, credit ratings agencies such as Moody’s and S&P were seen as giving excessively favorable ratings to subprime mortgage-backed securities, contributing to both the housing market bubble and later runs on wholesale funding markets that spread contagion across the financial system. In response, section 939A of Dodd-Frank prohibited bank regulators from referencing or relying on those organizations in federal rules. This upended the status quo ante for assigning risk-weights to a variety of exposures, including corporate lending.

335. See infra Part III.B.2.i.
While a great variety of federal regulations made reference to credit ratings agencies,\(^{341}\) a top Federal Reserve lawyer testified that dealing with their role in bank capital requirements was the “greatest challenge” of implementing section 939A.\(^{342}\)

In response to this challenge, the bank regulators significantly deviated from the Basel framework to assign a uniform risk-weight to all corporate exposures. In the standard approach under the Basel III agreement, banks are to apply “base weights” to corporate exposures ranging from 20% (for the most high-quality issuances, according to credit ratings agencies) to 150% (for the lowest quality), and are subject to additional due diligence by the bank.\(^{343}\) In the United States, in contrast, a uniform 100% risk-weight means that the bank must fund non-financial commercial paper exposures (highly safe corporate debt) with the same amount of equity as for junk bonds.\(^{344}\) This scheme arguably contravenes the goal of prudential risk management: if a bank needs to hold the same amount of regulatory capital to finance a business loan, it will choose the counterparty it can charge the highest interest to (i.e., the riskiest potential counterparty) that meets its internal underwriting standards.\(^{345}\)

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include the use of ECAI at the time of the 2007–08 financial crisis. See Romano, supra note 63, at 15 n.38. However, the post-crisis Basel III framework continued its reliance on external credit ratings agencies, and Section 939A prohibited the U.S. banking regulators from implementing Basel III framework as planned. See Basel III, supra note 51.

341. The bank regulators also had to revise the regulations to remove references to ratings agencies for assigning risk-weights to banks and securities; to all forms of exposures under the advanced approaches; and for determining eligible collateral for credit risk mitigation rules. See Alternatives to the Use of Credit Ratings, supra note 340, at 52,285.

342. Oversight of the Credit Rating Agencies Post-Dodd-Frank: Hearing Before the Subcomm. on Oversight & Investigations of the H. Comm. on Fin. Servs., 112th Cong. 9 (2011) (statement of Mark E. Van Der Weide, Senior Associate Director, Division of Banking Supervision and Regulation, Board of Governors of the Federal Reserve System).

343. See Basel CRE, supra note 141, § 20.17-19.

344. 12 C.F.R. § 217.31(f) (2023).

345. Accordingly, U.S. banks will have a competitive advantage relative to their foreign counterparts in financing the riskiest forms of corporate lending. As Jeremy Kress has written, this policy has particularly perverse consequences with respect to climate-related risks. A firm whose credit rating has been downgraded in light of climate risks will enjoy more favorable lending terms from U.S. banks than their foreign counterparties, resulting in both more lending to dirty industries and greater accumulation of risk on U.S. banks’ balance sheets. Kress, supra note 5, at 700.
Notwithstanding its obvious downsides, regulators chose this approach of risk-weighting corporate exposures for reasons of administrability. In an advanced notice of proposed rulemaking, the regulators specifically considered more granular alternatives for evaluating creditworthiness. They considered using other objective market-based criteria, allowing banks to assign their own risk-weights based on balance sheet calculations or other objective criteria, or employing a third-party financial assessor to assist the regulators in setting risk-weights. The regulators also received a variety of comment letters suggesting further alternative approaches. All were rejected, in part because of “operational complexity, or insufficient development.” Accordingly, while assessing what particular bank exposures face climate-related risks may be a significant operational challenge, precedent highlights that this is no object to developing such risk-weights in the first instance. In particular, regulators need not differentiate between gradations of climate risk exposure: just as for corporate exposures, they could treat them all on equal footing.

### iii. Using Third-Party Assessments

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346. See Alternatives to the Use of Credit Ratings, supra note 340, at 52,286.

347. The regulators pointed to credit spreads; debt-to-equity ratios; equity-price implied default probability; other sound underwriting criteria; and general measures of capital adequacy and liquidity as examples of such market-based criteria. Id.

348. The regulators suggested they could allow banks “to assign risk weights based on balance sheet or cash flow ratios, such as current assets to current liabilities, debt to equity, or some form of debt service to cash flow ratio (for example, current interest and maturities to current cash flow from operations).” Id. at 52,288.

349. The regulators pointed to the model adopted by the National Association of Insurance Commissioners, suggesting they could appoint a (non-ratings agency) third party financial assessor to make risk determinations for individual securities upon which they would set risk-weights. Id. at 52,286. The NAIC hired two large asset management companies—Pacific Investment Management Company, LLC (PIMCO) and BlackRock, LLC—to model cash flows for mortgage-backed securities in 2009 and 2010, respectively. See SOROUSHIAN, supra note 339, at 4.


351. Id.
Finally, regulators have side-stepped thorny questions about how to set risk-weights by relying on third-party assessments. 352 Until the passage of Dodd-Frank, regulators planned to assign risk-weights to exposures based on credit ratings given by external ratings agencies. 353 After Dodd-Frank, they considered hiring asset management companies or other private firms to replace the role of ratings agencies in providing data for setting risk-weights. 354 Scholars have extensively debated the appropriateness of this kind of deference to private actors in setting regulatory standards. 355 But it is clear that banking regulators do rely on external assessments in setting risk-weights—just as they could for developing climate-informed risk-weights.

The clearest example of this reliance on third-party assessments is in the risk-weights regulators apply to overseas lending. Under the current standard approach for capital requirements, the United States assigns risk-weights according to the Organization for Economic Cooperation and Development (OECD)’s “Country Risk Classification” (CRC) methodology. 356 All OECD members—38 rich states—are automatically given the highest rating (0), while the OECD evaluates other countries on a score from 0-7. 357 U.S. bank regulators, in turn, rely on the OECD’s Country Risk

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353. See U.S. Basel II Rules, supra note 72; see also supra note 340 and accompanying text.

354. See Alternatives to the Use of Credit Ratings, supra note 340, at 52,286.

355. See Paul J. Larkin Jr., The Private Delegation Doctrine, 73 Fla. L. Rev. 31, 42 nn.45–46 (2021). The non-delegation doctrine prohibits the assignment of lawmaking power to non-governmental entities. While the doctrine had long fallen into desuetude, some members of the Supreme Court has signaled that it may wish to revive it—including with respect to private delegations. See id. at 43; Dep’t of Transp. v. Ass’n of Am. R.R., 575 U.S. 43, 61 [2015] (Alito, J., concurring) (arguing that Congress “cannot delegate regulatory power to a private entity.”).


scores in assigning risk-weights for sovereign debt, foreign public sector entities, and foreign banks.

While banking regulators rely on CRC scores to evaluate credit risk for foreign exposures, it is doubtful that these third-party assessments are good proxies for how regulators would choose to assign risk-weights themselves. The regulators did not contract for the OECD to develop such classifications; the CRC scores are assigned in accordance with an unrelated agreement on establishing premium fees for official export credits. The classifications are meant to address investors’ ability to withdraw currency from a given country at par, and its government’s ability to deal with force majeure risks like natural disasters, war, and civil unrest. The OECD specifically states that it neither “endorse[s] nor encourage[s] their use for any other purpose.” And it specifically disclaims reliance on CRC scores to evaluate credit risk for sovereign debt, saying they “should not be compared with the sovereign risk classifications of private credit rating agencies.”

Further, there

358. See 12 C.F.R. § 3.32(a)(2) (2023). The risk-weights applied range from 0% (for a CRC score of 0 or 1) to 150% (for a CRC score of 7, or for a country that has recently defaulted).

359. See 12 C.F.R. § 3.32(e)(2) (2023). The risk-weights applied range from 20% (for a PSE in a country with a CRC score of 0 or 1) to 150% (for one in a country with a CRC score of 7, or in a country that has recently defaulted).

360. See 12 C.F.R. § 3.32(d)(2) (2023). The risk-weights applied are the same as those for foreign PSEs. Exposures to all foreign corporations which do not fall into one of these three categories—with the exception of certain regional development banks and other multilateral institutions—are given the same risk-weight that applies to U.S.-based corporations. See supra Part IV.A.2.

361. Kathryn Judge, Investor-Driven Financial Innovation, 8 HARV. BUS. L. REV. 291, 318 (2017) (arguing that regulators’ replacement of credit ratings with other metrics may be less effective at capturing risks).

362. While the CRC classifications are released to the public, I am not aware of any memorandum of understanding or other document authorizing the bank regulators’ use of the classifications.


364. Id.

365. Id.
are clear cases where the CRC scores both underweight\textsuperscript{366} and overweight\textsuperscript{367} actual credit risk. Notwithstanding the practical limitations of using these scores to assign risk-weights, the banking regulators' reliance on them is codified in federal law.\textsuperscript{368}

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In assigning risk-weights, regulators have grouped or differentiated bank exposures based on easily-tractable heuristics for the sake of administrability. They have likewise relied on third parties to provide data on and assess credit risk in assigning risk-weights, even when such assessments may well be inapposite for the task at hand. None of these decisions have been subject to judicial challenge—and as I have discussed, even if they were, regulators' decisions would be committed to agency discretion under law. Since regulators can lawfully defer to third party assessments, the answer to the question of whether climate-informed risk-weighting is administrable is the same as that of: “is anyone else developing the capacity to do climate-informed risk-weighting?” In both cases, the answer is “yes.”

B. Other Countries’ Bank Regulators Are Considering Climate Risk-Weighting

\textsuperscript{366}. For example, Greek sovereign debt is entitled to a 0% risk weight because it is a high-income OECD member, even though during the Eurozone crisis, the credit ratings agencies rated it as low as CCC-/Caa3 (signifying imminent default). Had the Basel III framework been in place in the United States at the time, regulators would have applied a 150% risk-weight to Greek sovereign debt. See \textit{Basel CRE, supra} note 159, § 20.4; Kress, \textit{supra} note 5, at 699 n.111.

\textsuperscript{367}. For example, as of May 2022, both India and Hungary's 10-year bonds had nearly-identical yields (7.368% and 7.350%, respectively), reflecting investors' sense that the countries faced similar default risk. But because Hungary is an OECD member, banks do not have to fund any Hungarian sovereign debt exposures through equity, while they must fund at least 4 cents on the dollar through equity for Indian sovereign debt. The uniform treatment of public sector enterprises and banks within a given country according to its CRC score compounds the problem. A hypothetical municipality in Hungary which has repeatedly defaulted on its debt will still receive a risk-weight of 20% for its general revenue obligations, while that of New Delhi or another large Indian city would receive a risk-weight of 100%. See \texttt{Hungary 10 Year Government Bond, Marketwatch}, https://www.marketwatch.com/investing/bond/embmkhu-10y?countrycode=bx; \texttt{India 10 Year Government Bond, Marketwatch}, https://www.marketwatch.com/investing/bond/lbmkxin-10y?countrycode=bx.

\textsuperscript{368}. See \textit{supra} text accompanying note 358.
In recognition of the risks posed to the financial system posed by climate change, bank regulators in other countries have already considered incorporating climate risk-adjustments into risk-weighted capital requirements. The Network for Greening the Financial System, a collection of 114 central banks and financial regulators, endorsed increasing regulatory capital requirements for “dirty” assets in the event that an observable risk differential between green and dirty assets can be empirically established.369 The Swedish Riksbank has published research proposing the same.370 And the Basel Committee itself reports that at least one (anonymous) member is considering incorporating climate-related risks that may impact financial stability into capital requirements.371

The European Union has taken the farthest steps toward implementing climate-informed risk-weights. The European Parliament has expressly required the European Banking Authority (EBA, the Union-wide regulator) to analyze methodologies for dedicated prudential treatment of exposures substantially related to environmental or social objectives.372 And the European Commission’s Executive Vice President stated that the Commission was “looking positively” at the idea of reducing capital requirements for certain environmentally-friendly lending.373 The fact that the trade association of European banks has endorsed this proposal will no doubt generate additional momentum to implement it in the EU.374 The EBA itself has reacted more tepidly to such proposals, specifically disclaiming that risk-weights “should reflect the risk profiles of exposures and should not be


370. Conny Olovsson, IS CLIMATE CHANGE RELEVANT FOR CENTRAL BANKS, 13 SVER. RIKSBANK 1, 6 (2018) (“For the institution that takes care of banking supervision, it is therefore valuable to investigate whether capital requirements should be increased for loans to companies that are heavily exposed to climate risks.”).


373. See Guarascio, supra note 22. Note that this would not technically adjust the risk-weight for such exposures (instead multiplying the entire capital requirement calculation by a “supportive factor,”) but it would be functionally identical to doing so.

used for other policy purposes." In a lengthy discussion paper in response to the Parliamentary mandate, it considered specific risk-weighted adjustment factors, but argued that other prudential management tools—like the use of “internal models, external credit ratings and valuations of collateral and financial instruments”—could be better targeted to capturing environmental risks. But in 2020, the EBA and the European Commission held a joint workshop where they evaluated a detailed proposal by a Bank of Italy representative for “environmental risk-weighted assets,” considering in particular how they might apply differential risk-weighted to residential mortgages based on the linkage between building energy efficiency and mortgage default rates.

Notwithstanding the EBA’s reticence to impose specific climate-informed risk-weights, the European Parliament may specifically require them to do so—just as Congress has required U.S. banking regulators to impose specific risk-weights.

Indeed, EU leaders have pointed to one such intervention—the “SME support factor”—as a model for how they might implement climate-informed capital requirements. In response to the heightened requirements imposed by Basel III (which effectively raised capital requirements from 8% to 10.5% of risk-weighted assets for most banks), the EU required its banking regulators to apply a “support factor” equal to the ratio between the two requirements (0.7619) to capital requirements solely for exposures to small- and medium-sized firms (SMEs).


376. Id.


378. See supra Part III.B.


380. Regulation 575/2013, art. 501, 2013 O.J. (L 176/1) (EU). On heightened Basel III requirements, see supra Part I. While the SME support factor did not adjust the risk-weights applied to SMEs themselves, it was mathematically equivalent to reducing the risk-weight for SMEs by around one-quarter.
There is empirical evidence that the support factor has had substantial effects on banks' lending to such businesses. As they considered this deviation from the Basel framework, European politicians specifically pointed to tight credit conditions for small businesses, and the desire to make SMEs more desirable targets for lending. One can easily imagine a similar situation playing out in

381. See, e.g., Jose Felix Izquierdo et al., Impact of Capital Regulation on SMEs Credit, 12 (BBVA Bank Econ. Rsch. Dep't, Working Paper No. 17/01, 2017), https://ideas.repec.org/p/bbv/wpaper/1701.html (last visited Apr. 21, 2023) (finding that that 13% of all lending to Spanish SMEs after the SME support factor was put into place could be attributed to the regulatory change). Some research suggests that the SME support factor had the greatest impact on lending to medium-sized firms. See Sergio Mayordomo & María Rodriguez-Moreno, Did the Bank Capital Relief Induced by the Supporting Factor Enhance SME Lending?, 36 J. FIN. INTERMEDIATION 45 (2018). The European Banking Authority—limiting its analysis to the largest European banks—has argued that the regulatory change had little impact on lending to SMEs at all. See also EUROPEAN BANKING ASSOC., EBA REPORT ON SMES AND SME SUPPORTING FACTOR, 10 (Mar. 23, 2016), https://www.eba.europa.eu/sites/default/documents/files/documents/10180/1359456/602d5c61-b501-4df9-8c89-71e32ab1bf84/EBA-Op-2016-04%20Report%20on%20SME%20and%20SME%20Supporting%20Factor.pdf?retry=1. But others have found substantial portfolio effects for smaller banks in particular. See Pietro Vozzella & Giampaolo Gabbi, What is Good and Bad with the Regulation Supporting the SME’s Credit Access, 28 J. FIN. REGUL. COMPLIANCE 569 (2020).

382. The Basel Committee has chastised the EU for implementing the SME support factor. See Basel Comm. on Banking Supervision, Regulatory Consistency Assessment Programme (Rcap) Assessment Of Basel III Regulations – European Union 4 (2014), https://www.bis.org/bcbs/publ/d300.htm (“concessionary risk weights have been extended to small and medium-sized enterprise [SME] exposures for customers located in both the EU and abroad. This also constitutes an important departure from the letter and the spirit of the Basel minimum requirements independent of the economic imperatives associated with this policy choice made under the CRR and CRD IV.”). But the Basel Committee’s assessment has had little impact, and internal EU support for the SME measure remains strong. See, e.g., Saving Banks: Financing for SMEs Must be Protected in Basel III Finalization, Insight EU Monitoring (Nov. 21, 2021), https://portal.ieu-monitoring.com/editorial/saving-banks-financing-for-smes-must-be-protected-in-basel-iii-finalisation?utm_source=ieu_monitoring&utm_medium=web&utm_campaign=portal (quoting an influential Member of the European Parliament: “I really want to safeguard that SMEs have access to financing…”).

support of lending to “green” projects. Indeed, at the direction of the European Commission, EU regulators have been concurrently working on a “sustainable finance taxonomy” meant to create uniform standards for differentiating between “green” and “dirty” investments. This taxonomy could well be the basis for differential treatment of assets for capital requirements.

These ongoing efforts highlight that U.S. regulators must also have the capability to develop climate-informed risk-weights. But even if they did not have such capabilities, the very fact that the E.U. may move to impose climate-informed risk-weights demonstrates that doing so in the United States would also be administrable. As I have shown, U.S. regulators can defer to other countries’ preferences for setting risk-weights for the sake of harmonizing global capital requirements. And as in the OECD example, they can even defer to other multilateral entities’ risk assessments in setting capital requirements for purely domestic purposes. Finally, while the Dodd-Frank Act prohibited the bank regulators from relying on credit ratings agency scores to assign risk-weights, there is nothing to prevent them from using data about climate-specific risk from third-party vendors that provide such services, such as CoreLogic and First Street.

Indeed, the Federal Reserve Board, the 12 regional Fed banks, and the U.S. Commission Vice-President Olli Rehn); id. at (CRE) 4 (Apr. 16, 2013), https://www.europarl.europa.eu/doceo/document/CRE-7-2013-04-16-ITM-009-13_EN.html (Remarks of Jim Higgins) (“Thanks to this report, banks will no longer be able to give preference to investment banking but must now at least place equal emphasis on retail banking and granting credit to SMEs. This new set of rules will make it necessary for all European banks to finance the real economy. As I said previously, it will allow SMEs increased access to credit and will make this a banking priority, as it should be.”).

384. See Regulation 2020/852, 2020 O.J. (L 198/13) (EU); see also Ebbe Rogge & Lara Ohnesorge, The Role of ESG Rating Agencies and Market Efficiency in Europe’s Climate Policy, 28 HASTINGS ENV’T. L.J. 113, 128 (2022) (describing the goal of the Taxonomy as enhancing transparency regarding sustainability for use by capital markets participants). The design of this taxonomy has been fiercely contested on the grounds that it is both over- and under-inclusive. See, e.g., Gabor, supra note 374, at 444 (arguing that there is significant “greenwashing” in the taxonomy); see also Thomas M. J. Mollers, European Green Deal: Greenwashing and the Forgotten Good Corporate Citizen as an Investor, 28 COLUM. J. EUR. L. 203, 222 (2022) (arguing that the Taxonomy’s “all or nothing” approach excludes many important activities crucial to transition away from fossil fuels). While important, this debate is beyond the scope of this Article. For our purposes, it is enough to note that there are already-existing regulatory mechanisms for differentiating between “green” and “dirty exposures.”

Department of the Treasury are all already using data provided by the latter firm. Setting well-targeted climate-informed risk-weights may be a significant logistical challenge. But it is not—and cannot—be an insurmountable one.

VI. CONCLUSION

Even inside the rarified world of financial regulation, capital requirements are seen as an area of notorious complexity. Procedurally, their development is opaque, with many key decisions made behind closed doors in Switzerland. Methodologically, the formulas used to set capital requirements are mathematically intricate. And substantively, the actual effects of capital requirements on risk-taking by regulated institutions can be difficult to decipher. Yet at their core, risk-weighted capital requirements have intuitive consequences for the allocation of credit in the economy. When they make it costlier for banks to lend to certain kinds of institutions, banks lend less; when they make it cheaper, they lend more.

Despite their complexity, I have argued that it is a mistake to conceptualize risk-weighted capital requirements as value-neutral tools of technocratic management. Risk-weights are developed under conditions of limited administrative capacity and data availability and entail forecasting about the probability of events which have not yet occurred. In this sense, they require the deliberative exercise of policy judgement. Moreover, in exercising such judgement, regulators necessarily trade off their mandate for ensuring the safety and soundness of the banking system—limiting the impact of potential future losses—against the need to enable it to do its job, by allocating credit into the real economy. Reasonable people can disagree as to the empirical riskiness of particular kinds of bank exposures. They can also disagree about how to balance this tradeoff on a normative basis: how much risk to allow across the financial system, and what kinds of risks pose a greater balance of harms.

Indeed, Congress and the banking regulators have at times disagreed about how to balance the trade-offs inherent in setting capital requirements. And Congress has intervened in specific ways to force the regulators to implement its wishes. Rather than seeing this as an unwarranted political intrusion into the domain of technical expertise, we should celebrate this. Congress has given the banking regulators significant discretion to design and implement capital requirements, without abdicating its role in defining the nature and scope of the federal regulatory power. This kind of institutional arrangement is a hallmark of a

386. Id. While regulators could theoretically rely on these private risk-modeling services, scholars have raised concerns about the scientific rigor and lack of transparency in their methodologies. See Madison Condon, Climate Services: The Business of Physical Risk, 55. ARIZ. ST. L. J. (forthcoming 2023).
healthy administrative state, fostering the development of specific regulatory expertise while ensuring that it is ultimately used in service of the public interest.

The risks posed by climate change, in particular, are a matter of grave public concern. The specter of planetary disaster has motivated significant popular mobilization, and attendant demands that regulation of the financial sector be reformulated in light of such risks. But arguably, this is too complex of a problem for Congress to solve on its own. Banking regulators should step forward—not to conclusively settle the matter of what climate-informed financial regulation should look like, but to facilitate the public and inter-branch dialogue that will ultimately be decisive. Regulators have the legal and practical tools necessary to open this dialogue. They can do so by developing and proposing climate-informed risk-weights for capital requirements. Risk-weights have never simply been a mathematical representation of counterparty credit risk. They are flexible, multi-purposive tools that can ultimately be used in service of economic problem-solving. The banking regulators, acting as appointed agents of the public, should treat them as such.