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Why Financial Crises Recur

Gary B. Gorton
Jeffery Y. Zhang

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*Gary B. Gorton & Jeffery Y. Zhang**

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Abstract

Financial crises have occurred around the world for over two centuries. These crises have been so costly and frequent that one wonders why governments cannot prevent them from recurring despite repeated, wide-ranging attempts at legislation, regulation, supervision, and enforcement.

In this article, we argue that lawmakers repeatedly act in two ways that may appear to be intuitive but are actually detrimental to system-wide stability. First, lawmakers fail to understand that "banks"—both traditional banks and shadow banks—produce runnable short-term debt, unlike other firms in the economy. To produce short-term debt, banks operate with opacity. Yet a regulatory framework based on secrecy is diametrically opposed to our dominant market-based paradigm that values transparency above all else. Second, lawmakers fail to understand the difference between a "systemic crisis" and the failure of individual banks. Aiming to enhance the safety and soundness of individual banks is not sufficient to produce system-wide stability. Committing these two errors leads to systemic risk and a recurrence of crises.

Notably, the times when lawmakers in the United States have succeeded in reducing systemic risk were by luck, not deliberate planning. In 1863, when Congress sought to finance the Civil War, it created a system of national banks and a uniform currency that inadvertently led to the creation of safer banks for a time. Similarly, in 1933, the Roosevelt Administration begrudgingly passed deposit insurance under political pressure, which led to decades of stability in the banking sector. Yet deliberate attempts at improving financial stability—including the so-called "GENIUS Act" to regulate stablecoins—have fallen short because of the errors identified above.

* Gary Gorton is the Frederick Frank Class of 1954 Professor Emeritus of Management and Finance at the Yale School of Management. Jeffery Zhang is an Assistant Professor at the University of Michigan Law School. The authors thank John Lutz, Nathaniel Magrath, and Jack Webb for outstanding research assistance. The authors also thank Jordan Bleicher, Jacob Gerszten, Jim Hines, Michael Hsu, Noah Kazis, Alec Schwartz, Daniel Sufranski, and Mark Van Der Weide for helpful comments and suggestions.

If lawmakers can correct these two errors, then modern economies may experience a long period of growth without crises.

TABLE OF CONTENTS

INTRODUCTION

Financial crises have recurred for centuries, and they are very costly.[1] When a crisis hits, businesses fail, unemployment spikes, household wealth plummets, and human capital is permanently destroyed. In the United States, for example, the cost of the 2007-2008 Global Financial Crisis was estimated to be as high as $30 *trillion*.[2] Moreover, there is no returning to the pre-crisis economic growth trend,[3] as a crisis leaves scars, especially for those who lost their jobs or their homes.[4] And the costs are not borne uniformly across the population, as some segments bear a disproportionate share.[5] Moreover, financial crises recur in myriad contexts. Crises occur in developed economies as well as in emerging market economies.[6] They occur even where there is sophisticated management by a central bank.[7]

Why do financial crises recur, despite the widely shared goal of preventing them and the deployment of considerable legal and economic effort to do so? Our answer would start with this: "Lawmakers take actions that appear to be intuitive and beneficial but are actually detrimental." In this article, we specifically flag two errors that are repeatedly made by generations of policymakers.

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[1] *See* CARMEN M. REINHART & KENNETH S. ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY (2011); Rustam Jamilov et al., *Two Centuries of Systemic Bank Runs* (Aug. 13, 2024) (unpublished manuscript), https://ssrn.com/abstract=4924699.

[2] Tyler Atkinson et al., *How Bad Was It?*, DALL. FED. STAFF PAPERS, July 2013, at 3.

[3] Valerie Cerra & Sweta Chaman Saxena, *Growth Dynamics: The Myth of Economic Recovery*, AM. ECON. REV., March 2008, at 439; Chenzi Xu, *Reshaping Global Trade: The Immediate and Long-Run Effects of Bank Failures*, 137 Q.J. ECON. 2107 (2022).

[4] Michael S. Barr, Vice Chair for Supervision, Bd. of Governors of the Fed. Rsrv. Sys., Speech at the American Enterprise Institute: Why Bank Capital Matters, (Dec. 1, 2022), https://www.federalreserve.gov/newsevents/speech/barr20221201a.htm (noting that the Global Financial Crisis "left scars on families and businesses that are evident even today").

[5] *See, e.g.*, Emanuele Baldacci et al., *Financial Crises, Poverty, and Income Distribution*, *in* MACROECONOMIC POLICIES AND POVERTY 269 (Ashoka Mody & Catherine Pattillo eds., 2004); Inci Ötker-Robe & Anca Maria Podpiera, *The Social Impact of Financial Crises: Evidence from the Global Financial Crisis* (World Bank Pol'y Rsch., Working Paper No. 6703, 2013), https://ssrn.com/abstract=2354754.

[6] *See* Luc Laeven & Fabián Valencia, *Systemic Banking Crises Database: An Update*, (Int'l Monetary Fund, Working Paper No. WP/12/163, 2012); Thanh Cong Nguyen et al., *A New Comprehensive Database of Financial Crises: Identification, Frequency, and Duration*, ECON. MODELLING, Mar. 2022.

[7] For example, in the 2007-2008 financial crisis there were runs on asset-backed commercial paper. *See* Daniel Covitz et al., *The Evolution of a Financial Crisis: Collapse of the Asset-Backed Commercial Paper Market*, 68 J. FIN. 815 (2013). And there were runs on sale and repurchase agreements (repo). *See* Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. FIN. ECON. 425 (2012); Gary Gorton et al., *The Run on Repo and the Fed's Response*, J. FIN. STABILITY, June 2020. There were also runs on money market-market mutual funds. *See* Patrick E. McCabe, *The Cross Section of Money Market Fund Risks and Financial Crises* (Bd. of Governors of the Fed. Rsrv. Sys., Working Paper No. 2010-51, 2010). In pre-Civil War America there were runs on private bank notes. *See infra* Section I.A. These are all forms of short-term debt.

First, market economies have an inherent structure. An integral part of that structure is the existence of runnable short-term debt, with the most prominent example being money in a bank account. Producers of that runnable short-term debt—whether traditional commercial banks or shadow banks like money market funds and stablecoin issuers—are special, and they require more opacity than Congress and regulators typically propose. Here, opacity refers to the difficulty of valuing assets, which then implies that liabilities cannot be easily valued. Yet commonly received wisdom suggests that companies can be, and should be, disciplined by the market. Transparency is of paramount importance, as sunlight is often considered to be the best disinfectant.[8] But the opposite is true for producers of runnable short-term debt, particularly during a panic.[9]

Second, there is a difference between a systemic crisis and the failure of individual institutions.[10] This insight may once more prove counterintuitive, but strengthening individual institutions is not sufficient for panic-proofing the system. Our regulatory framework has focused too much on preventing the failure of individual institutions without consideration of the system as a whole. It is certainly possible, as the bank runs of March 2023 vividly reminded everyone, to have strong individual banks yet still have the risk of failures spreading. And, as we show using a stylized model, certain regulations that focus on individual banks may unintentionally worsen financial stability by pushing risk into unregulated segments of the financial system.[11]

Given the prevalence of financial crises, we are certainly not the first scholars to tackle the question of why financial crises recur. In the late 19th century, William Graham Sumner lamented that the literature on financial crises "for fifty years had repeated the same inferences, lessons, and warning; but all the doctrines of currency have to be learned over again apparently every ten or fifteen years, if indeed they are ever learned at all."[12] Over the past two decades, prominent legal scholars have offered explanations

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[8] Louis D. Brandeis, *What Publicity Can Do*, HARPER'S WKLY., Dec. 10, 1913, at 10 ("Sunlight is said to be the best of disinfectants . . . .").

[9] We do not hold the position that hiding information is sufficient for financial stability. Opacity should be paired with credible supervisory examinations, which we discuss later in Part III. What we argue is that lawmakers repeatedly underappreciate the role that opacity plays.

[10] As economists say, the distinction is general equilibrium versus partial equilibrium. As financial regulators say, the distinction is macroprudential versus microprudential. *See* Claudio Borio, *Towards a Macroprudential Framework for Financial Supervision and Regulation?* (BIS Working Papers, Working Paper No. 128, 2003), https://www.bis.org/publ/work128.pdf (defining macroprudential regulation and explaining why it's different than microprudential regulation); *see also* Jeremy C. Kress & Jeffery Y. Zhang, *The Macroprudential Myth*, 112 GEO. L.J. 569, 581–82 (2024).

[11] *See infra* Part IV.

[12] WILLIAM GRAHAM SUMNER, A HISTORY OF BANKING IN THE UNITED STATES 415 (1896).

rooted in a flawed legislative process and a fragmented regulatory process.[13] We do not disagree with any of these diagnoses, but given what has occurred over the past few years—in the aftermath of runs on stablecoin issuers,[14] crypto banks,[15] and Silicon Valley Bank[16]—we believe there is still a knowledge gap with respect to substance, not just flawed processes.

This article returns to the fundamental principles of money and banking. Our first claim is familiar to scholars of money who have repeatedly articulated the unique role of money creation.[17] And, to re-emphasize, when we say that "banks" are unique or special, we are referring to financial entities that produce runnable short-term debt, not only to legal entities called banks.[18] This insight is particularly relevant to the recent legislative attempts at regulating the crypto ecosystem—attempts that have failed to face the reality that many crypto entities are simply unregulated producers of runnable short-term debt.[19]

Our second claim connects with the recent critiques of our financial regulatory framework. Despite the advances made over the past few decades, regulators still impose regulations that are calibrated based on an individual bank's conditions and that do not sufficiently account for economy-wide effects. In other words, they are

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[13] *See, e.g.*, Roberta Romano, *The Sarbanes-Oxley Act and the Making of Quack Corporate Governance*, 114 YALE L.J. 1521, 1594 (2005) (positing that the legislative process leads to poorly conceived legislation that is meant more to quell public outrage than to address underlying policy issues); John C. Coffee, Jr., T*he Political Economy of Dodd-Frank: Why Financial Reform Tends to Be Frustrated and Systemic Risk Perpetuated*, 97 CORNELL L. REV. 1019, 1029 (2012) (arguing that the public's engagement waxes and wanes following a crisis); Dan Awrey & Kathryn Judge, *Why Financial Regulation Keeps Falling Short*, 61 B.C. L. REV. 2295, 2308–11 (2020) (arguing that the fragmented policymaking process is fundamentally mismatched with a complex, dynamic financial system).

[14] Stablecoins are digital tokens that are designed to act as digital money. Individuals can buy stablecoins and, for each dollar given to the stablecoin issuer, buyers receive that number of stablecoins in exchange. While many consider stablecoin issuers to be primarily payments companies, they are economically equivalent to unregulated banks issuing redeemable banknotes. This means stablecoin issuers are subject to runs—a vulnerability that has already borne out. *See* Gary B. Gorton & Jeffery Y. Zhang, *Taming Wildcat Stablecoins*, 90 U. CHI. L. REV. 909, 915–17 (2023).

[15] Following the collapse of Sam Bankman-Fried's FTX in November 2022, investors withdrew their deposits from crypto banks in the same way that non-crypto depositors run on traditional banks. Prior to that episode, many had not realized that certain crypto entities had simply reinvented banking in the crypto ecosystem. *See* Gary B. Gorton & Jeffery Y. Zhang, *Bank Runs During Crypto Winter*, 14 HARV. BUS. L. REV. 297 (2024).

[16] The run on Silicon Valley Bank in March 2023 triggered a national banking panic that resulted in three of the four largest bank failures in U.S. history. *See* Albert H. Choi & Jeffery Y. Zhang, *Creditors, Shareholders, and Losers in Between: A Failed Regulatory Experiment*, 110 CORNELL L. REV. 271 (2025).

[17] *See, e.g.*, Saule T. Omarova, *The People's Ledger: How to Democratize Money and Finance the Economy*, 74 VAND. L. REV. 1231 (2021); MORGAN RICKS, THE MONEY PROBLEM (2016); GARY B. GORTON, MISUNDERSTANDING FINANCIAL CRISES: WHY WE DON'T SEE THEM COMING (2012).

[18] *See infra* Part I.

[19] *See* Gorton & Zhang, *supra* note 14, at 911 (arguing that stablecoin issuers are economically equivalent to unregulated banks).

primarily implementing microprudential tools that are not adequate to address macroprudential problems.[20] This is why we still have bank runs on the traditional banking sector like the one caused by Silicon Valley Bank's demise in March 2023—and why we will have runs on stablecoin issuers in the future.

Without understanding these two insights, every crisis appears to be idiosyncratic. This is why some policymakers and scholars hold the worldview that crises cannot be prevented. Crises simply materialize from unpredictable sources, and one must deal with the aftershocks. Consequently, different pieces of legislation are passed following each crisis, but they are not effective in preventing the next one.[21]

Our article is organized as follows. In Part I, we explain the importance of opacity in banking, with examples from financial crises over the past two centuries. In Part II, we build out the implications from Part I and begin our examination of the legal regimes that developed around banking—specifically, the narrow confines of "the business of banking," the restraining acts that kept nonbanks out of banking, and limited entry via bank charters. In Part III, we continue examining regulatory regimes that evolved around bank opacity, including the bank examination privilege and exemptions from the Freedom of Information Act. In Part IV, we present evidence showing the importance of system-wide design. We argue that two pieces of successful reforms—namely, the National Bank Act of 1863 and the Banking Act of 1933—were "stumbled into" following national emergencies. Beginner's luck, one might say. Once policymakers started focusing on individual banks, they lost sight of the system as a whole, which led to systemic failures. And, in the most recent example, we see similar mistakes in the GENIUS Act of 2025 that aims to improve the safety and soundness of individual stablecoin issuers. All in all, if lawmakers and regulators can correct the two conceptual mistakes identified in our article, then modern economies may enjoy a period free of crises.

I. FINANCIAL CRISES AND THE RELEVANCE OF SHORT-TERM DEBT

To set the stage, we start by introducing an apparent paradox, one that is central to our explanation of why financial crises recur. The paradox is that the market economy needs short-term debt created by banks and bank-like entities—oftentimes referred to as "money"—yet that short-term debt is vulnerable to destabilizing runs. In other

[20] *See, e.g.*, Kress & Zhang, *supra* note 10, at 574 (2024) (arguing that the new financial regulatory infrastructure of the past decade is still mostly microprudential in nature).

[21] If the legislation is clear-eyed, then it can be effective without being long and complex. *Cf.* RICKS, *supra* note 17, at 250 (2016) (observing that the National Bank Act of 1864 was 19 pages in length, the Federal Reserve Act of 1913 was 24 pages long, and the Banking Act of 1933 was 33 pages long, but the Dodd-Frank Act of 2010 was 848 pages). On the relationship between the law's size and its effectiveness, see Saule T. Omarova, *The Dodd-Frank Act: A New Deal for a New Age?*, 15 N.C. BANKING INST. 83, 84–85 (2011) (arguing that, despite its immense size, Dodd-Frank left too much of its details up to future regulatory iteration and ultimately would fail to transform the banking sector).

words, money in the form of short-term debt is needed for the economy to function,[22] but that money can lead to system-wide crashes when holders of the debt start questioning its value (*e.g.*, when depositors panic during a bank run). Recognizing this paradox allows one to understand that banks and producers of such short-term debt are special and that information insensitivity via opacity is beneficial for maintaining stability.

What's notable is that every generation seems to relearn this first insight the hard way with each new form of runnable short-term debt that the financial sector invents. In the 18th and 19th centuries, policymakers had to learn this lesson with respect to privately issued "banknotes" that circulated as money. In the late 19th century and early 20th century, regulators had to relearn this lesson with respect to "demand deposits" that proliferated as account-based money in the aftermath of the Civil War. In the Global Financial Crisis, the runnable debt was repurchase agreements ("repos"). Now, this current generation of lawmakers is in the process of relearning the lesson—mostly failing to relearn the lesson—with respect to "digital money" in the form of circulating stablecoins and various account-based crypto demand deposits.

A. The Link Between Short-Term Debt and Financial Crises

A financial crisis is not just any bad event, like a stock market crash or a hurricane. Rather, it has a precise meaning: a run on short-term debt that threatens the entire financial system and the broader economy.[23] The term "systemic" is used in relation to a financial crisis because the whole system is at risk. It is an event where holders of short-term debt issued by financial intermediaries withdraw *en masse* or refuse to renew their loans,[24] or would have engaged in such a mass run had not explicit or implicit government intervention been in place or been expected.[25]

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[22] Banks use short-term debt to finance long-term investments, such as mortgages and commercial loans. Nicholas K. Tabor & Jeffery Y. Zhang, *Capital, Contagion, and Financial Crises: What Stops a Run from Spreading?*, 2020 COLUM. BUS. L. REV. 575, 588 (2020). Additionally, "[t]he regular operations of both financial and non-financial companies depend heavily on their ability to obtain short-term financing in debt markets. Such debt is often used to fund payroll, accounts payable, and inventory purchases." Mark E. Van Der Weide & Jeffery Y. Zhang, *Tale of the Tape: Lessons from the 2008 and 2020 Financial Crises*, 26 STAN. J.L. BUS. & FIN. 413, 417 (2021). In these ways, short-term debt serves crucial functions in modern market economies.

[23] *See* Tri Vi Dang et al., *The Information View of Financial Crises*, 12 ANN. REV. FIN. ECON. 39, 40 (2020); Gary Gorton, *Financial Crises*, 10 ANN. REV. FIN. ECON. 43, 45 (2018).

[24] Short-term debt can be redeemed or not rolled over, triggering firms to sell assets, which they all do. The resulting fire sales crush asset prices, leading to losses and failures.

[25] Luc Laeven & Fabian Valencia, *Systemic Banking Crises Revisited* 4 (Int'l Monetary Fund, Working Paper No. WP/18/206, 2018). Laeven and Valencia define a crisis as an event that satisfies two conditions: "(1) Significant signs of financial distress in the banking system (as indicated by significant bank runs,

Short-term debt is at the root of financial crises, and it has taken on different forms and different legal categorizations over the centuries. Before the Civil War and the National Bank Act of 1863, short-term debt circulated in the form of "banknotes" issued by private, state-chartered banks.[26] Thus, the equivalent of a run occurred when holders of those banknotes attempted to cash them in for specie at the issuing bank. After the Civil War, but before Congress established the Federal Deposit Insurance Corporation ("FDIC") and deposit insurance in the Banking Act of 1933, short-term debt transformed from circulating banknotes into account-based deposits (*i.e.*, "deposit accounts").[27] With this development, the notion of a bank run evolved into account-holding depositors seeking to withdraw money from their accounts. Fast forward many decades, and short-term debt evolved to encompass new financial instruments such as "asset-backed commercial paper" ("ABCP"), "repo," and "money market funds" ("MMFs").[28] Indeed, during the Global Financial Crisis, the runs weren't on bank deposit accounts but rather on commercial paper, repo, and money market funds.[29] Whatever its form, whatever its legal name, and whichever institutions issue it, short-term debt is an inherent feature of a market economy. And it is vulnerable to runs when holders of short-term debt question its value and flee from it.[30] System-wide bank runs weren't unique to the Global Financial Crisis. They have been occurring for centuries[31] and have resulted in tremendous social costs.[32]

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losses in the banking system, and/or bank liquidations) [and] (2) Significant banking policy intervention measures in response to significant losses in the banking system." *Id.*

[26] Dang et al., *supra* note 23, at 41–43.

[27] *See* Gorton & Zhang, *supra* note 14, at 946 (describing the rise of demand deposits following the National Bank Act).

[28] *See* RICKS, *supra* note 17, at 50 (listing and describing private money claims). These were all considered to be types of "safe assets." *See* Anna Gelpern & Erik F. Gerding, *Inside Safe Assets*, 33 YALE J. ON REGUL. 363, 378 (2016).

[29] *See* sources cited *supra* note 3. Note that ABCP, repo, and MMFs are not issued by regulated commercial banks, but rather by other financial institutions.

[30] *See* Gary Gorton, *Banking Panics and Business Cycles*, 40 OXFORD ECON. PAPERS 751, 767–71 (1988). In this research Gorton shows that the triggering information event for a panic during the period 1863-1914 was an unexpected increase in the liabilities of failed businesses, a leading indicator of recession.

[31] *See, e.g.*, WILLIAM M. GOUGE, AN INQUIRY INTO THE EXPEDIENCY OF DISPENSING WITH BANK AGENCY AND BANK PAPER IN THE FISCAL CONCERNS OF THE UNITED STATES 5 (Philadelphia, William Stavely 1837) (describing the Panic of 1837).

[32] *See, e.g.*, Mathijs A. van Dijk, The Social Costs of Financial Crises (June 2013) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2278526 (describing the impact of crises on life expectancy, fertility, education, and poverty from a study of 187 banking crises across 126 countries); Regis Barnichon et al., *The Financial Crisis at 10: Will We Ever Recover?*, FED. RSRV. BANK S.F.: ECON. LETTER (Aug. 13, 2018), https://www.frbsf.org/research-and-insights/publications/economic-letter/2018/08/financial-crisis-at-10-years-will-we-ever-recover/ (estimating losses from the 2007-2008 Global Financial Crisis to be approximately $70,000 per American); Xu, *supra* note 3 (showing that the Panic of 1866 in London led to a permanent disruption of financial intermediaries around the world,

B. "Banks" Are Special

To make short-term debt effective as money, its price should not fluctuate. The price of bank-produced short-term debt should not change. That is, a one-dollar banknote should always hold its price at one dollar. Similarly, withdrawals from a bank account should always be one-for-one.[33]

But how is that even possible? In a market economy, the price of a good or service moves to equate supply and demand.[34] Prices move in response to new information.[35] For example, the price of tomatoes rises if market participants learn of a tomato shortage caused by drought. Or the price of gold falls when market participants learn of the discovery of more gold mines. So, how is it possible for short-term debt—a product whose value should, in theory, fluctuate along with the value of the assets backing the debt—to trade at a constant price? The answer is that, ideally, no one should have an incentive to produce information about the backing for the money (*i.e.*, the banks' assets); and everyone should know that no one has an incentive to produce that information. If that is the case, then we say that the money is "information insensitive."[36]

Achieving information insensitivity requires a level of opacity that is not commonly accepted in a market economy. Recall that, in this context, opacity refers specifically to the difficulty of valuing bank assets. Indeed, Eugene Fama won the Nobel Prize for his seminal work in showing that markets incorporate new information into prices almost immediately and are therefore efficient.[37] And this is why the U.S. Securities and Exchange Commission ("SEC"), as well as many leading scholars, believes that transparency is fundamental to improving market fairness and competitiveness.[38] But

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with trade patterns disrupted for decades); Cerra & Saxena, *supra* note 3 (showing that GDP dynamics following financial crises do not recover).

[33] *See* Gorton & Zhang, *supra* note 14, at 912 (explaining the "no questions asked" ("NQA") principle that allows money to trade a par, that is, dollar-for-dollar).

[34] *See, e.g.*, Irena Asmundson, *Supply and Demand: Why Markets Tick*, FIN. & DEV. MAG., June 2010, at 12.

[35] *See, e.g.*, Burton G. Malkiel, *The Efficient Market Hypothesis and Its Critics*, J. ECON. PERSPS., Winter 2003, at 59, 59 (summarizing the efficient market hypothesis, in which implies that "when information arises, the news spreads very quickly and is incorporated into the prices of securities without delay").

[36] *See* Gorton & Zhang, *supra* note 14, at 918 ("Private producers of money therefore try to design an instrument that is information insensitive: no party to a transaction would engage in due diligence on its value because doing so would be too expensive.").

[37] *Eugene F. Fama – Facts*, NOBEL PRIZE, https://www.nobelprize.org/prizes/economic-sciences/2013/fama/facts/ (last visited July 15, 2025).

[38] *See* Robert Bloomfield & Maureen O'Hara, *Market Transparency: Who Wins and Who Loses?*, 12 REV. FIN. STUD. 5, 5 (1999) (noting the importance of transparency and quoting the SEC's view on the matter).

this is precisely what makes banks special. Banks are fragile and run-prone, and the short-term debt they provide benefits from increased opacity, not increased transparency.[39]

C. The Importance of Opacity During Crises

Knowing that the SEC has long held the view that sunlight is the best disinfectant,[40] and that SEC regulations cover companies in virtually every part of the economy, one might be forgiven for thinking of increased opacity as counterintuitive or even backward. But that is the case for banking. In this section, we provide a few revealing examples across history to show the important role of opacity in preserving financial stability, particularly during a crisis.

We begin with an example from the 1930s. Sriya Anbil, a financial economist at the Federal Reserve, studied the importance of opacity in the context of the Reconstruction Finance Corporation ("RFC") during the Great Depression.[41] The RFC was an emergency lending institution that allowed banks to borrow anonymously.[42] The designers of the RFC were clearly using opacity to preserve stability. They were concerned that depositors would view borrowing banks as weak, and their concerns were unfortunately validated. On August 22, 1932, the clerk of the House of Representatives unexpectedly published a list of some, but not all, the banks that had secretly borrowed from the RFC.[43] According to Anbil's analysis, depositors indeed withdrew more money from the banks whose identities were accidentally revealed.[44]

The importance of opacity was understood in the 19th century, the 20th century, and this century. During the Global Financial Crisis, the Federal Reserve introduced several new emergency lending programs, such as the Term Auction Facility, the Term Securities Lending Facility, and the Primary Dealers Credit Facility.[45] These programs provided public funds at below-market rates to financial intermediaries in exchange for (often distressed) private assets.[46] Also, as part of the Emergency Economic

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[39] Todd R. Kaplan, *Why Banks Should Keep Secrets*, 27 ECON. THEORY 341 *passim* (2006); Tri Vi Dang et al., *Banks as Secret Keepers*, 107 AM. ECON. REV. 1005 *passim* (2017).

[40] Laura S. Unger, Acting Chairman, SEC, This Year's Proxy Season: Sunlight Shines on Auditor Independence and Executive Compensation, Remarks at the Center for Professional Education, Inc. (June 25, 2001), https://www.sec.gov/news/speech/spch502.htm.

[41] Sriya Anbil, *Managing Stigma During a Financial Crisis*, 130 J. FIN. ECON. 166 (2018).

[42] *Id.* at 169.

[43] *Id.*

[44] *Id.* at 180.

[45] *See* Van Der Weide & Zhang, *supra* note 22 at 431–34.

[46] *Id.*

Stabilization Act, the U.S. Treasury implemented similar programs, such as the Troubled Asset Relief Program.[47] What these facilities had in common was their specific design initially to hide borrowers' identities to prevent the stigma of borrowing and possibly precipitate runs.[48] If identities had been made public, the market may have interpreted that borrowing "as a sign of financial weakness," which would further erode the borrowers' (perhaps already weak) positions.[49] Thus, the designers understood the importance of preserving opacity during a time of heightened panic and uncertainty.[50] While transparency has its virtues, especially because it exposes banks to disciplining market pressures and public scrutiny,[51] it enables "informational contagion," which can accelerate or even cause the contagion of financial trouble among institutions.[52]

Secrecy was also integral to the special lending programs of the Bank of England. Ian Plenderleith, a former Bank of England committee member and then a director of Morgan Stanley International, was asked by the Bank of England to review its Emergency Lending Facilities during the Global Financial Crisis. He wrote: "Was secrecy appropriate in 2008? In light of the extreme fragility of the markets at the time . . . it was right to endeavour to keep the [emergency lending assistance] operations in 2008 covert."[53]

All of this informs the first conceptual error for why financial crises recur. As alluded to earlier, the root cause of financial crises is runnable short-term debt. The economy needs this debt to function properly, yet it must be information insensitive. When lawmakers and regulators fail to appreciate the importance of opacity to stability, they tend to implement rules and regulations based on the market paradigm of requiring

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[47] *Id.* at 448–49.

[48] *See, e.g.*, Gary Gorton & Andrew Metrick, *The Federal Reserve and Panic Prevention: The Roles of Financial Regulation and Lender of Last Resort*, J. ECON. PERSPS., Fall 2013, at 45, 58 (observing that "institutions that received the [emergency] loans were not publicly revealed, and the market apparently believed that some combination of the stigma and risk of possible disclosure of these loans was significantly lower than those from the discount window").

[49] *See* Olivier Armantier et al., *Discount Window Stigma During the 2007–2008 Financial Crisis*, 118 J. FIN. ECON. 317 (2015) (describing the stigma).

[50] Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Rsrv. Sys., Testimony Before the Committee on Financial Services, U.S. House of Representatives (Feb. 10, 2010) ("[Because of] the competitive format of the auctions, the TAF [Term Auction Facility] has not suffered the stigma of conventional discount window lending . . . .").

[51] *See, e.g.*, Robert P. Bartlett, III, *Making Banks Transparent*, 65 VAND. L. REV. 293, 305–11 (2012) (discussing the potential costs, benefits, and feasibility of exposing banks' risk management to market-based scrutiny).

[52] *See* Adam J. Levitin, *In Defense of Bailouts*, 99 GEO. L.J. 435, 458–60 (2011).

[53] IAN PLENDERLEITH, REVIEW OF THE BANK OF ENGLAND'S PROVISION OF EMERGENCY LIQUIDITY ASSISTANCE IN 2008–09, at 70 (2012).

enhanced transparency. But such transparency undermines rather than improves the stability of short-term debt.

D. The Latest Version of Short-Term Debt: Stablecoins

We see this first conceptual error repeated in recent years with the legislative efforts to regulate stablecoin issuers.[54] Stablecoins, as widely discussed in the literature, are a subset of cryptocurrencies.[55] Specifically, they are digital tokens designed to trade at par and backed by an asset or a basket of assets.[56] The most popular versions of stablecoins are pegged to the U.S. dollar, meaning that one stablecoin can be redeemed for one U.S. dollar.[57] While stablecoins are viewed through the novel lens of cryptocurrencies, they represent a classic form of runnable short-term debt. When holders of stablecoins begin to question the health of the stablecoin issuer, they will seek redemptions from the issuer, just as nervous depositors will seek redemptions from their bank if they perceive their bank to be weak.[58]

Over the past few years, the largest stablecoin issuers have *already experienced* episodes akin to bank runs, so this is not a concern that exists only in theory.[59] In late 2021, crypto markets peaked in response to pent-up demand and access to cheap credit. Soon after, the market experienced turbulence as Russia invaded Ukraine, and the Federal Reserve tightened interest rates. TerraUSD, an algorithmic stablecoin meant to trade at par with the U.S. dollar, collapsed when LUNA, another cryptocurrency and the only asset backing TerraUSD, lost significant value. As TerraUSD holders saw the value of its backing asset drop and the Luna Foundation Guard, an entity created to act as a quasi-lender-of-last-resort to TerraUSD, fail to adequately support it, demand for the coin disappeared as they fled for safer assets.

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[54] *See* Gary B. Gorton & Jeffery Y. Zhang, *Protecting the Sovereign's Money Monopoly*, 75 ALA. L. REV. 955, 990–94 (surveying the legislative efforts); *infra* Section IV.E.

[55] *See* Gorton & Zhang, *supra* note 14, at 915–17 (defining stablecoins). For a thorough treatment of cryptocurrencies, including the underlying technology, *see* HILARY ALLEN, FINTECH DYSTOPIA (forthcoming).

[56] Stablecoins are backed—or alleged by their issuers to be backed—by safe, liquid assets, such as cash and short-term U.S. Treasuries. *See* Gorton & Zhang, *supra* note 14, at 915. *But see* PRESIDENT'S WORKING GRP. ON FIN. MKTS. ET AL., REPORT ON STABLECOINS 4 (2021) [hereinafter PWG REPORT] (noting that some stablecoins are backed by riskier assets, such as commercial paper, corporate and municipal bonds, and other digital assets).

[57] PWG REPORT, *supra* note 56, at 8.

[58] *See* Rashad Ahmed et al., *Public Information and Stablecoin Runs* (BIS Working Paper, Working Paper No. 1164, 2025) (analyzing how reserve transparency and quality affects stablecoin price stability and noting that "[e]very [stablecoin] holder anticipates that every other [stablecoin] holder will be relatively flighty when a run has already occurred in the previous period. Under these conditions, greater precision of public information amplifies the contagion process").

[59] *See* Gorton & Zhang, *supra* note 15, at 305–11 (describing bank runs on stablecoin issuers).

More recently, Circle faced a run on its stablecoin, USDC, when Silicon Valley Bank ("SVB") collapsed in early 2023. On Wednesday, March 8, 2023, SVB announced to its shareholders its plans to raise capital and unload certain assets to better manage withdrawal requests in a higher interest rate environment.[60] As ratings agencies downgraded SVB's stock[61] and panic spread via social media,[62] depositors withdrew $42 billion the following day.[63] By Friday, the California Department of Financial Protection and Innovation closed the bank, and the FDIC was appointed as its receiver.[64] When Circle announced it had $3.3 billion in assets meant to prop up USDC deposited with SVB,[65] USDC investors began to question the stablecoin's value and rushed to unload it. By Saturday morning, USDC was trading at 87 cents on the dollar.[66]

As these episodes demonstrate, stablecoin issuers are susceptible to the same run risk as traditional banks and other issuers of short-term debt.[67] In order to address this risk, lawmakers must relearn the first lesson that the production of runnable short-term debt is a special activity that must be regulated in ways to enhance information insensitivity. Otherwise, bank runs will continue to occur and, once stablecoin issuers become sufficiently large, the consequences for the rest of the economy may be

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[60] Message to Stakeholders Regarding Recent Strategic Actions Taken by SVB (Mar. 8, 2023).

[61] Erin Griffith & Rob Copeland, *Silicon Valley Bank's Financial Stability Worries Investors*, N.Y. TIMES (Mar. 9, 2023), https://www.nytimes.com/2023/03/09/business/silicon-valley-bank-investors-worry.html; *SVB Financial Group Long-Term Rating Lowered to 'BBB-' from 'BBB' on Weaker Funding Profile; Outlook Negative*, S&P GLOB. (Mar. 9, 2023), https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/type/HTML/id/2958379.

[62] *See* Jonathan Yerushalmy, *'The First Twitter-Fueled Bank Run': How Social Media Compounded SVB's Collapse*, Guardian (Mar. 18, 2023, 12:20 EDT), https://www.theguardian.com/business/2023/mar/16/the-first-twitter-fuelled-bank-run-how-social-media-compounded-svbs-collapse.

[63] *Recent Bank Failures and the Federal Regulatory Response: Hearing Before the S. Comm. on Banking, Hous., & Urb. Affs.*, 118th Cong. 54 (2023) (statement of Martin Gruenberg, Chairman, FDIC).

[64] Press Release, FDIC, FDIC Creates a Deposit Insurance National Bank of Santa Clara to Protect Insured Depositors of Silicon Valley Bank, Santa Clara, California (Mar. 10, 2023).

[65] *See* @Circle, TWITTER (Mar. 10, 2023, at 21:11 ET), https://twitter.com/circle/status/1634391505988206592.

[66] Vicky Ge Huang, Hannah Miao & Caitlin Ostroff, *Circle's USDC Stablecoin Breaks Peg with $3.3 Billion Stuck at Silicon Valley Bank*, WALL ST. J. (Mar. 11, 2023, at 19:21 ET), https://www.wsj.com/articles/crypto-investors-cash-out-2-billion-in-usd-coin-after-bank-collapse-1338a80f?.

[67] Similar logic applies also to crypto lending platforms, which hold deposit-like short-term debt to finance long-term loans (usually to other entities in the crypto space). *See* Gorton & Zhang, *supra* note 15, at 311–16. But note that stablecoin issuers create token-based private money, while crypto lending platforms create account-based private money. Accordingly, the means through which regulators should mitigate their respective risks to the financial system and the broader economy differ. *Id.* at 301 & n.15.

devastating.[68] In Part IV, we will return to the mistakes made in creating a regulatory framework for stablecoin issuers.

II. THE BUSINESS OF BANKING AND RESTRICTED ENTRY

An important implication follows from our discussion of opacity. If banks exist in an ecosystem of heightened opacity, they are not subject to market discipline in the usual sense. In that case, what incentives do banks have for behaving without market pressure on prices? We discuss the "stick" of credible bank supervision in the next Part.[69] Here, we discuss the "carrot" of restricting entry into "banking." The idea is that a bank's charter, when paired with limited entry, is highly valuable because it allows the bank to generate monopoly profits. Thus, the bank has an incentive to avoid very risky endeavors in order to preserve its charter.

A. The Business of Banking

To restrain nonbanks from engaging in banking, there must be a definition of "banking" so that entrepreneurs know what's "in" and what's "out." We begin with that definition, which has not always been consistent. Consider the Bank of North America, the first bank established in the United States.[70] It was designated a bank by an ordinance of Congress and by an act of the Pennsylvania legislature.[71] It was allowed to convey real and personal estate, designated with nearly the same words as the charter of the Bank of England granted in 1694.[72] Both the ordinance and the act omitted the prohibitions and restrictions that were in the Bank of England charter.[73] Section 26 of the Bank of England charter states:

> [T]he said corporation to be made and created by this act, **shall not** at any time during the continuance thereof, **deal or trade**, or permit or suffer any person or persons whatsoever, either in trust or for the benefit of the same, **to deal or trade** with any of the stock, moneys, or effects of or any ways belonging to the said corporation, **in the**

[68] *See* Gorton & Zhang, *supra* note 15, at 311–16, 318–25 (noting that while the circularity of the crypto ecosystem confined financial distress largely to the crypto space during the Crypto Winter of 2022, recent trends in the U.S. and internationally suggest the real economy faces growing exposure to crypto volatility); *see also* PWG REPORT, *supra* note 56, at 12.

[69] *See also* Gorton & Zhang, *supra* note 15, at 333–35 (describing the importance of pairing bank supervision with deposit insurance).

[70] *See* JOHN CLEAVELAND, THE BANKING SYSTEM OF THE STATE OF NEW YORK vii (New York, John S. Voorhees 1857).

[71] *Id.* at viii.

[72] *Id.*

[73] These prohibitions and restrictions were also in the charters of the Bank of Scotland, the Bank of France, and the Bank of Ireland. *Id.* at viii–ix.

> **buying or selling of any goods, wares, or merchandise whatsoever** . . . .[74]

In the second Bank of North America charter, "An Act to Revive the Incorporation of the Bank of North America," the restrictions and prohibitions contained in the Bank of England charter were inserted, with almost the same words.[75] As the reader can see, the constraints were quite significant.

Not surprisingly, controversies arose over the years. The "business of banking" clause, as it is currently drafted in section 24(7) of the National Bank Act,[76] was originally derived from the language of the banking-powers clause of the New York Free Banking Act of 1838.[77] The Free Banking Act was itself the model for the National Bank Act of 1863, and the banking-powers clause was copied nearly verbatim.[78] The New York Act's banking-powers clause was derived from the "historical development of the business of banking as defined by the indefinite forms of deposit taking, credit granting, and credit exchange."[79] That historical foundation has remained at the heart of the business-of-banking powers, only changing with "specific grants [of power] such as that of the power to engage in real estate lending," or "specific limitations, such as those regarding securities activities."[80]

Since its adoption, there has been debate over whether the "business of banking" powers should be interpreted narrowly—that is, whether banking powers are limited to those expressly provided for in section 24(7)—or whether the enumerated powers are illustrative of a wider range of powers banks may exercise.[81] Courts have adopted broad, narrow, and intermediate interpretations of the "business of banking" clause

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[74] *Id.* at ix n.(f) (emphasis altered) (quoting Bank of England Act 1694, 5 & 6 W. & M. c. 20, § 26).

[75] *Id.* at xi.

[76] *See* 12 U.S.C. § 24.

[77] *See* Daniel S. Alter, *The "Business of Banking" in New York – An Historical Impediment to the OCC's Proposed National "Fintech Charter,"* YALE J. ON REGUL.: NOTICE & COMMENT (Jun. 29, 2017), https://www.yalejreg.com/nc/the-business-of-banking-in-new-york-an-historical-impediment-to-the-occs-proposed-national-fintech-charter-by-daniel-s-alter; *see also* Lev Menand & Morgan Ricks, *Federal Corporate Law and the Business of Banking*, 88 U. CHI. L. REV. 1361, 1387 (2021) ("As many commentators have noted, the [National Bank Act] was not without precursors. It drew heavily on the 'free banking' statute enacted in New York in 1838—a statute that also formed the basis for similar laws in over a dozen other states.").

[78] Alter, *supra* note 77; Menand & Ricks, *supra* note 77.

[79] *See* Edward L. Symons, Jr., *The "Business of Banking" in Historical Perspective*, 51 GEO. WASH. L. REV. 676, 697 (1983).

[80] *Id.* at 701.

[81] *See, e.g.*, ARTHUR E. WILMARTH, JR., TAMING THE MEGABANKS: WHY WE NEED A NEW GLASS-STEAGALL ACT 15 (2020) (describing the limited set of securities that national banks could buy or sell, as proscribed by the National Bank Act of 1864).

since its inception.[82] Even early decisions interpreting the banking-powers clause in the New York Act have been used to support both the narrow view and the broad view.[83] This suggests that the business-of-banking powers have not evolved from narrow to broad, but that there has been consistent tension between those views throughout the legal history.[84]

It was not until 1995 and the decision in *Nationsbank v. Variable Annuity Life Insurance Co.* (*VALIC*)[85] that the Supreme Court developed a framework for assessing the power of banks to engage in activities not specifically provided in the Act, "[e]nding over 100 years of muddled precedent and conflicting commentary."[86] The *VALIC* Court found that the business of banking is not limited to the enumerated powers but is an evolving concept.[87] The Office of the Comptroller of the Currency ("OCC") has adopted a broad interpretation of that opinion and articulated a test for determining what powers banks may exercise based on the *VALIC* opinion as well as the prior business-of-banking jurisprudence.[88]

While scholars claim that there are still a number of restraints on the business-of-banking powers despite the seemingly broad grant of power in the *VALIC* decision, some have argued that the OCC has "articulated an excessively broad definition of the statutory concept of the 'business of banking' to mean all types of financial intermediation and dealing in all forms of financial risk" and that this has shaped the business-of-banking law in the past 30 years.[89] Moreover, banks themselves have become more diverse in their activities since the turn of the millennium and the advent

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[82] *See* Saule T. Omarova, *The Quiet Metamorphosis: How Derivatives Changed the "Business of Banking"*, 63 U. MIA. L. REV. 1041, 1041, 1050 (2009).

[83] *See* Talmage v. Pell, 7 N.Y. 328 (1852) (espousing a broad view); Curtis v. Leavitt, 15 N.Y. 9 (1857) (espousing a narrow view).

[84] Whether it is appropriate to "bundle" the various banking functions together remains an open question; it is not obvious, for instance, whether payments infrastructure ought to be tied in with the taking of deposits. *See* Dan Awrey, *Unbundling Banking, Money, and Payments*, 110 GEO. L.J. 715, 752–53 (2022) (arguing that such bundling of services in the regulatory framework results in a number of distortions).

[85] 513 U.S. 251 (1995).

[86] Julie L. Williams & Mark P. Jacobsen, *The Business of Banking: Looking to the Future*, 50 BUS. LAW. 783, 783 (1995).

[87] *VALIC*, 513 U.S. at 258.

[88] *See* Williams & Jacobsen, *supra* note 86. The essential reasoning of these courts (as well as the bank regulators) over the past century can be synthesized to three key factors, namely (i) whether the activity in question is functionally equivalent to, or a logical outgrowth of, a recognized bank power; (ii) whether the activity benefits bank customers and/or is convenient or useful to banks; and (iii) whether the activity presents risks of a type similar to those already assumed by banks. *See also* Omarova, *supra* note 82, at 1053 ("The OCC's top legal staff has interpreted *VALIC* as a full endorsement of the agency's long-held broad view of the bank powers clause.").

[89] *See* Omarova, *supra* note 82, at 1041.

of financial holding companies, which partake in a number of "financial activities, including trading and dealing in securities, commodities, and derivatives" under common ownership with chartered banks.[90] Even earlier, the ambit of bank holding companies had been gradually expanding through the 1980s and '90s as a result of changing interpretations of the Glass-Steagall Act's Depression-era limitations on the business of banking.[91]

B. Restricted Entry

With the definition of "banking" in place, we pivot to the next question of what keeps nonbanks from engaging in banking? When the states enacted restraining acts, they prohibited nonbanks from performing banking activities: issuing notes or taking deposits. While many 18th-century lawmakers apparently took for granted that an unincorporated association could engage in banking activities[92] as restraining acts were enacted more broadly, legislatures increasingly flexed their authority to restrict these activities only to certain chartered entities.[93]

Early on, operating a bank was considered a common law right unless restricted by state laws or constitutions.[94] But that ease of entry did not last. In keeping with barriers to entry, operating a bank requires a charter that is granted by a branch of the government.[95] Early state governments presumed that they had the power to grant charters of incorporation based on the legal tradition in England.[96]

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[90] Saule T. Omarova & Graham S. Steele, *Banking and Antitrust*, 133 YALE L.J. 1162, 1184 (2024).

[91] Saule T. Omarova & Margaret E. Tahyar, *That Which We Call a Bank: Revisiting the History of Bank Holding Company Regulation in the United States*, 31 REV. BANKING & FIN. L. 113, 125 (2011).

[92] Alexander Hamilton, for instance, advised the Bank of New York from 1784–1791 while it lacked a charter altogether. *But see* Morgan Ricks, *Entry Restriction, Shadow Banking, and the Structure of Monetary Institutions*, 2 J. FIN. REGUL. 291, 293–94 (2016) (noting that some banking activities, especially money creation (and therefore seigniorage), were traditionally reserved for the state and their practice by banks or nonbanks caused some historical anxiety).

[93] Shaw Livermore, *Advent of Corporations in New York*, 16 N.Y. HIST. 286, 291 (1935).

[94] *See* Bray Hammond, *Free Banks and Corporations: The New York Free Banking Act of 1838*, 44 J. POL. ECON. 184, 187 (1936) (noting that, following the restraining acts, banking was no longer a common-law right).

[95] "Free banking" laws, passed in some states before the Civil War, allowed for free entry into banking, but a bank's notes had to be backed by certain bonds deposited with the state treasury. Ng argues that in the states that enacted free banking laws, such as Massachusetts, Vermont, Georgia, Alabama, and Florida, few free banks entered the banking market subsequent the laws being enacted. Ng also finds the relative growth rates of bank assets in free banking states were not significantly different from those of the region or the nation. Kenneth Ng, *Free Banking Laws and Barriers to Entry in Banking, 1838–1860*, 48 J. ECON. HIST. 877 (1988).

[96] Roger S. White, *Evolution of the Legal Framework for Government Regulation of Commercial Banking*, 1 PROC. BUS. HIST. CONF. 83, 83 (1973).

State legislatures began requiring the corporate form of organization for banking by enacting restraining acts, which made it illegal for unincorporated banks to issue notes and, at times, restricted lending and deposit taking.[97] State-enacted restraining acts, discussed above, prohibited nonincorporated firms without bank charters from issuing notes or taking deposits. The restraining acts made obtaining a bank charter a necessity for operating a bank.[98] They also created the possibility of granting monopoly power to banks. Sometimes this monopoly power was explicit, as, for example, in a New York state act "to Restrain Unincorporated Banking Associations."[99] The act was intended to guaranty "to banks a monopoly of the rights and privileges granted to them, which had been encroached upon, or infringed by private associations."[100]

It is not surprising, then, that the dominant motive behind the enactment of restraining acts seems to have been the protection of existing banks from competition. Since state legislatures controlled the issuance of new charters, they could protect incumbent banks. The whole process became highly political.[101] Reinforcing the nexus between political patronage and banking, many charters combined banking with another commercial monopoly:

> In many states, internal improvement banks were chartered for the express purpose of promoting the development of specific industrial enterprises and public goods within the state. These banks created capital for a particular enterprise by issuing purchasing power through bank notes. In some states, banks were required to establish railroads, canals, roads, hotels and public water and light systems.[102]

New York's Manhattan Company is a case in point. Granted in 1799 to Aaron Burr, the Company's charter provided for the creation of a safe water supply system in New

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[97] At the federal level, meanwhile, banking charters are the only organic corporate law that has been created, with the same effect of restricting banking to chartered banks only. *See* Menand & Ricks, *supra* note 77 at 1397 (arguing that restricting nationally chartered banks to the business of banking is an essential feature of the National Bank Act).

[98] *See* Hammond, *supra* note 94, at 187 ("Banking could be carried on only as authorized by charter, but charters were not made unattainable. The legislature had put itself in the position of being called upon to grant much coveted favors.").

[99] 1804 N.Y. Laws 476.

[100] N.Y. Firemen Ins. Co. v. Ely & Parsons, 2 Cow. 678, 711 (N.Y. Sup. Ct. 1824).

[101] *But see* Joseph H. Sommer, *The Birth of the American Business Corporation: Of Banks, Corporate Governance, and Social Responsibility*, 49 BUFF. L. REV. 1011 (2001) (arguing that corporate charters in the late eighteenth century were generally intended to restrain corporate activity). A primary concern of early-bank shareholders (almost all merchants) was to prevent bank directors from wasting assets or—worse—competing with the mercantile interests who backed them, which motivated a separation between banking and commerce.

[102] FDIC, MANDATE FOR CHANGE: RESTRUCTURING THE BANKING INDUSTRY 24 (1987).

York City.[103] The Company gave "at best, a limited water service," relying on wells in Manhattan rather than the Bronx River, but thanks to a vague "surplus capital" clause in its charter, the Company was able to establish a commercial bank.[104] The Bank of the Manhattan Company quickly dwarfed the Company's ostensible primary purpose of providing water and allowed for access by Burr-aligned Democratic-Republicans to a banking system theretofore dominated by Federalists.

New York's "act to restrain unincorporated banking associations" of 1804 is prototypical.[105] (Table A2 in the Appendix lists the states that enacted legislation to restrict unincorporated banking in the late 18th and early 19th centuries.) The 1804 act, reinstated in 1813 without significant changes, provided that:

> [N]o person unauthorized by law shall subscribe to or become a member of any association, institution or company, or proprietor of any bank or fund for the purpose of issuing notes, receiving deposits, making discounts, or transacting any other business which incorporated banks may or do transact by virtue of their respective acts of incorporation . . . .[106]

The law also voided any outstanding notes issued by unauthorized banking associations.[107] Supplements in 1818 (making it unlawful for individuals to engage in banking business) and 1829 (targeting debt securities put into circulation as money) sought to plug loopholes and protect the oligopoly enjoyed by chartered banks.[108] Interestingly, the pent-up demand created by New York's regime materialized in bribes and other attempts at patronage as parties sought the all-important state banking charter, such as the discounted bank shares one state senator promised to two others to secure a charter for the Merchant's Bank of New York City in 1804 or the outright bribes five legislators accepted to secure a charter for the Bank of America in 1812.[109]

Even with restraining acts in place, legislatures were wary of inadvertently allowing new banks to come into being. For example, per *People ex rel. Attorney General v. Utica*

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[103] *Id.*

[104] Beatrice G. Reubens, *Burr, Hamilton and the Manhattan Company: Part II: Launching a Bank*, 73 POL. SCI. Q. 100, 101–02, 124 (1958).

[105] 1804 N.Y. Laws 476.

[106] *Id.* at 476–77.

[107] *Id.*; *see also* Joseph W. Bishop, Jr., *More on "Discounts" Under New York's Banking Law: Antiquarian Research Inspired by Contemporary Legislation*, 68 YALE L.J. 269, 277–79 (1958) (further discussing the 1804 act).

[108] Bishop, *supra* note 107, at 278–79.

[109] *See* Howard Bodenhorn, *Bank Chartering and Political Corruption in Antebellum New York*, *in* CORRUPTION AND REFORM: LESSONS FROM AMERICA'S ECONOMIC HISTORY 231, 235 (Edward L. Glaeser & Claudia Goldin eds., 2006).

Insurance Co.,[110] "[n]umerous acts of incorporation have been passed since the restraining act of April 11, 1804, each of which contain a special clause to restrain the corporation from banking." Restraining acts were either so well enforced, or so willingly obeyed, that in 1831 former Treasury Secretary Albert Gallatin noted that, with only a few minor exceptions, "the currency of the United States, so far as it consists of notes, is strictly confined to bank notes issued by chartered companies."[111] Walter B. Smith, a historian of American economic institutions, writes that "the nuisance of unincorporated banks had ceased to be important by 1817."[112]

But let's not lose sight of our main narrative: Why is it desirable for entry into banking to be restricted, creating monopoly profits? Aren't monopolies bad? The answer is that it creates an incentive for a bank to avoid very risky undertakings, and this is advantageous because it is better for the bank to regulate itself compared to bank regulators.[113] Said differently, a bank charter (when coupled with limited entry and restraining acts) is valuable because it entitles the bank to monopoly profits.[114] The present value of these monopoly profits is an intangible asset—the charter—that the bank would lose if it failed or ran afoul of regulators. Thus, a highly valuable charter provides an incentive for the bank to be conservative with respect to risk-taking.[115]

This phenomenon has been documented empirically as well. For example, economists Rebecca Demsetz, Marc Saidenberg, and Philip Strahan find evidence that banks with higher charter values "have lower risk because they have stronger capital positions and safer portfolios."[116] Similarly, "[u]sing a sample of publicly traded U.S. financial institutions from 1995 to 2012," economists Natalya Schenck and John Thornton found that "high charter values and low leverage are associated with lower incentives for risk taking. The relationship is reversed for institutions with low charter value and high leverage."[117]

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[110] 15 Johns. 358, 369 (N.Y. Sup. Ct. 1818).

[111] ALBERT GALLATIN, CONSIDERATIONS ON THE CURRENCY AND BANKING SYSTEM OF THE UNITED STATES 28 (Philadelphia, Carey & Lea 1831).

[112] WALTER BUCKINGHAM SMITH, ECONOMIC ASPECTS OF THE SECOND BANK OF THE UNITED STATES 59 (1953).

[113] *See also* Aaron M. Levine & Joshua C. Macey, *Dodd-Frank Is a Pigouvian Regulation*, 127 YALE L.J. 1336, 1397 (arguing that banks work to make themselves less systematically important to reduce the regulatory burden imposed on them by the Dodd-Frank Act).

[114] *See* Christine Desan, *Money's Design Elements: Debt, Liquidity, and the Pledge of Value from Medieval Coin to Modern 'Repo'*, 38 BANKING & FIN. L. REV. 331, 350 (2022) (noting that banks' competitiveness stems from "the singular privilege they hold to create money out of their networked credit").

[115] *See* Alan J. Marcus, *Deregulation and Bank Financial Policy*, 8 J. BANKING & FIN. 557 (1984).

[116] Rebecca S. Demsetz et al., *Banks with Something to Lose: The Disciplinary Role of Franchise Value*, FED. RSRV. BANK N.Y. ECON. POL'Y REV., Oct. 1996, at 1, 11.

[117] Natalya A. Schenck & John H. Thornton, Jr., *Charter Values, Bailouts and Moral Hazard in Banking*, 49 J. REGUL. ECON. 172, 174 (2016).

In sum, our series of counterintuitive insights—that began with the benefits of increased opacity—extends to the stability-enhancing benefits of restricted competition and monopoly rents. These insights explain why every generation of lawmakers makes the same mistake with respect to bank regulation. Banks are special, and the underlying reasons are not intuitive, especially not in a market-dominant paradigm.

III. REGULATORY REGIMES OF SECRECY

We now pivot to the "stick" that complements the "carrot" in a world of opacity. As mentioned previously, market discipline typically provides that stick. The idea behind market discipline is that analysts will research firms and trade on that information, which then becomes embedded in the stock price.[118] Stating the obvious, it's harder for the market to provide that disciplining mechanism if it does not have information.

This is where supervision comes into the story. Together, opacity and supervision form a regulatory regime of secrecy. We begin our review of this regime by focusing on bank examinations, which are notoriously hidden from the public and have remained consistently so for a long time.[119] It's important to note that these regimes did not evolve randomly. They came about because of lessons learned through history. As highlighted below, courts have noted that keeping bank examinations secret avoids undermining confidence in banks and unduly causing bank runs and financial panic.[120]

To be sure, certain scholars and practitioners have pushed backed on the degree to which this secrecy exists, especially with respect to so-called confidential supervisory information ("CSI") that is generated through bank examinations.[121] We are not arguing in this article that the current CSI framework is perfect exactly as it stands today. Rather, we are arguing—or, reminding this generation of lawmakers—that opacity can have benefits for financial stability that may be counterintuitive to those who strongly believe in a market-transparency paradigm. Indeed, lawmakers should

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[118] *See* NOBEL PRIZE, *supra* note 37 (explaining Eugene Fama's work on efficient markets).

[119] *See* Peter Conti-Brown, *Stress Tests and the End of Bank Supervision*, REGUL. REV. (Apr. 21, 2016), https://www.theregreview.org/2016/04/21/stress-tests-and-the-end-of-bank-supervision/ (noting that "the Examination Report from the Comptroller of the Currency for each bank remained the same in general form from 1865 to 1953—an extraordinarily stable institutional arrangement across a long period of economic, political, legal, and financial tumult").

[120] *See infra* Part III.C.

[121] *See, e.g.*, Peter Conti-Brown, *The Curse of Confidential Supervisory Information*, BROOKINGS (Dec. 20, 2019), https://www.brookings.edu/articles/the-curse-of-confidential-supervisory-information/ (arguing that accountability is lost if secrecy is so prevalent, and suggesting a path forward that releases information after a lag-time of "years, not decades"); *see also* Peter Conti-Brown, Patrick M. Corrigan & Jeffery Y. Zhang, *Is Confidential Supervisory Information Material to Investors? Evaluating the Conflict Between Banking and Securities Law* (manuscript on file).

bear this old lesson in mind when drafting and tailoring regulations for this generation's version of "banks."

A. The Origins of Bank Examinations

In banking, monitoring and disciplining have traditionally been conducted by supervisors through examinations. When discussing the role of bank examiners, Comptroller of the Currency John J. Knox stated in 1881 that:

> The report of the examiner is confidential. It is for the use of the Comptroller's office only, and is in no sense a certificate of the good condition of the bank. In many instances the capital stock of a bank has thus been found to be impaired, and the deficiency has been made good *without the knowledge of the general public*.[122]

Information would be kept from the public so as not to cause runs. The examiners would quietly address the problems.

In the United States, regular bank examinations began before the Civil War with six states that opened insurance funds to protect banknote holders and, in some cases, depositors: New York, Vermont, Indiana, Michigan, Ohio, and Iowa. Indiana, Ohio, and Iowa employed salaried examiners who conducted regular examinations and had discretion in setting penalties.[123] Table A3 in the Appendix lists the date of the first publication of state bank examination reports. In general, state legislatures were slow in requiring reports from banks regarding their conditions.

B. The Role of Clearinghouses

During the National Banking Era (the unique regulatory era between the Civil War and the creation of the Federal Reserve), government bank examinations were not held in high regard. Gordon Smith, Assistant Examiner of the Minneapolis Clearing-House Association, declared them "defective" in a 1908 *Bankers' Magazine* article.[124] Private clearinghouses played a significant role in filling the gap. And the way in which clearinghouses utilized opacity to guard against *systemic* failures is illustrative.

Before Congress established the Federal Reserve System in 1913, private bank clearinghouses were organizations of large banks that, in addition to mutually clearing checks, undertook a variety of regulatory functions, including the requirement to

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[122] ANNUAL REPORT OF THE COMPTROLLER OF THE CURRENCY TO THE FIRST SESSION OF THE FORTY-SEVENTH CONGRESS OF THE UNITED STATES, at XXXVII (1881) (emphasis added).

[123] Eugene N. White, *Lessons from the History of Bank Examination and Supervision in the United States, 1863-2008*, *in* FINANCIAL MARKET REGULATION IN THE WAKE OF FINANCIAL CRISES: THE HISTORICAL EXPERIENCE 15, 21 n.12 (Alfredo Gigliobianco & Gianni Toniolo eds., 2009).

[124] Gordon C. Smith, *Clearing-House Examinations*, 76 BANKERS' MAG. 177, 177 (1908).

publish weekly balance sheets in newspapers.[125] Clearinghouses *were* the bank regulators. This was effective because the clearinghouse provided protection. This was important because, during a crisis, the members of a clearinghouse would effectively combine into a single entity.[126] In other words, banks would mutually monitor one another in normal times so that they would be strong during a state of a crisis.

The clearinghouses conducted their own bank examinations because of the counterparty risk in the clearing process. Albert Bolles, a prominent financial historian of the late 19th and early 20th centuries, explained:

> The extent of the supervision exercised by this [clearinghouse] association over its members the public will never know, because it is best that much of it should remain secret. The banks thus associated learn more about one another than they ever would if acting entirely alone, and examinations are made, and warnings given, of which the public has no knowledge. The direct interest that every bank has in knowing the true condition of every other member is one of the great merits of the system.[127]

What did clearinghouses do once a crisis materialized? One of the first acts of the clearinghouse was to order member banks to *stop* the previously required publication of bank balance sheet information in the newspapers.[128] Bank-specific information might identify the weaker banks who might then face further bank runs. Because the stronger banks were bound to clear the checks for the weaker ones, this could result in a domino effect of increasing pressure. Instead, the clearinghouse published the *aggregate* information of the clearinghouse bank members.[129] The effect of this was to focus attention on the system as a whole rather than on individual banks. Moreover, the clearinghouse would make loans to individual banks, but these loans were kept secret.[130] Tables A4 and A5 in the appendix provide greater details on the ways in which clearinghouses increased opacity to guide themselves and their members out of financial panics.

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[125] *See* J.S. GIBBONS, THE BANKS OF NEW YORK, THEIR DEALERS, THE CLEARING HOUSE, AND THE PANIC OF 1857, at 292–342 (New York, D. Appleton & Co. 1858); GARY B. GORTON & ELLIS W. TALLMAN, FIGHTING FINANCIAL CRISES 12–17 (2018).

[126] *See* Gary Gorton & Donald J. Mullineaux, *The Joint Production of Confidence: Endogenous Regulation and Nineteenth Century Commercial-Bank Clearinghouses*, 19 J. MONEY, CREDIT & BANKING 457, 462–66 (1987).

[127] ALBERT S. BOLLES, PRACTICAL BANKING 379, (11th ed. 1903) (1884).

[128] GORTON & TALLMAN, *supra* note 125, at 87.

[129] *Id.*

[130] *Id.*

C. The Bank Examination Privilege

As the scope of banking expanded to the national level and clearinghouses faded from the picture, the government's bank examinations began to play a more integral role. Depending on the type of bank examination, examiners produce reports assessing the competence of a bank's management, the quality of its assets, its compliance with regulations, and, potentially, special areas such as its efforts to deter money laundering.[131] Not surprisingly, these formal reports, as well as the constant communication between banks and their examiners, contain highly sensitive information about the bank's financial health.[132] And consistent with our story of opacity, that information can be kept secret under the "bank examination privilege."[133]

This bank examination privilege allows regulators to keep information about financial institutions confidential, although there is no legislative or judicial basis for this. That is, no federal statute requires courts to recognize the bank examination privilege. The privilege is "a court-created doctrine."[134] And although each federal financial regulator has promulgated rules regarding the privilege, these rules do not have the force of an evidentiary privilege for judicial purposes.[135] Federal courts have held that the privilege covers a broad range of materials, including "agency opinions and recommendations and banks' responses thereto."[136] What matters is not the type of communication between the bank and its regulator, but the content. One major exception to the privilege is that it does not extend to purely factual material.[137] The line between factual and opinion materials can blur, and courts have differed on exactly the sorts of materials that constitute opinions.[138] Although the official reports of examination are

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131 *See Examinations Overview*, OFF. COMPTROLLER CURRENCY, https://www.occ.treas.gov/topics/supervision-and-examination/examinations/examinations-overview/index-examinations-overview.html (last visited July 15, 2025).

132 ERIC B. EPSTEIN ET AL., THE BANK EXAMINATION PRIVILEGE § 3.07 (2017).

133 *See* Lev Menand, *Why Supervise Banks? The Foundations of the American Monetary Settlement*, 74 VAND. L. REV. 951, 972 (2021) (noting that the privilege rule is consistent with regulators' "confidence legitimator" role and that "[s]ecrecy is a virtue because it helps obscure weaknesses that might reduce trust in banks").

134 EPSTEIN ET AL., *supra* note 132, § 1.02. One partial exception to the lack of a federal statute is a provision in the Freedom of Information Act ("FOIA") called exemption 8. Freedom of Information Act § 3(e)(8), 5 U.S.C. § 552(b)(8); *see infra* Section III.D. Although it differs in terms of material covered, this exception permits agencies to withhold exam-related materials from inquiries under FOIA for similar reasons as the common law bank examination privilege. *See* 5 U.S.C. § 552(b)(8).

135 EPSTEIN ET AL., *supra* note 132, § 1.02[1].

136 *In re* Bankers Tr. Co., 61 F.3d 465, 471 (6th Cir. 1995).

137 EPSTEIN ET AL., *supra* note 132, § 1.03.

138 *See id.* § 1.01[3].

the primary concern of the privilege, informal communications, like emails and phone calls, can be protected depending on whether they contain examiner opinions.[139]

Given the complex nature of banking regulations, with many agencies having some jurisdiction over banks, there is no enumerated list of all the agencies that qualify for the privilege. At a minimum, the OCC, Federal Reserve System, and FDIC are clearly covered.[140] Other agencies that have successfully invoked the privilege include the SEC and the Federal Housing Finance Agency ("FHFA").[141]

The bank examination privilege, at least at the federal level, is not absolute. Although banks may be the party most incentivized to preserve confidentiality, only regulators have standing to assert or waive the privilege.[142] To assert the privilege, regulators bear the burden to show that the privilege applies in a given case.[143] Once this burden is met, the burden shifts to the proponent of the discovery request, who can "attempt to show good cause to override the privilege."[144] Courts have developed a five-factor test to balance the competing interests of litigants and the general need for confidentiality.[145] Even if the court overrides the privilege, the proponent of the discovery request is often barred from releasing the documents to the public.[146]

Finally, we note that protecting these records from the public eye serves two purposes within the opacity-is-beneficial line of argument. First, disclosing examination reports can undercut one purpose of banking supervision: keeping the bank safe and sound. Courts have noted that there is a strong public interest in nondisclosure when releasing sensitive information can "breed public misunderstanding and unduly undermine confidence in the bank."[147] If certain information became public, that could spark a bank run.[148]

Second, bank examinations are only productive when banks are candid with their regulators. Parties litigating claims against banks would likely jump at the chance to

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[139] *Id.*

[140] *Id.* § 1.01[4].

[141] *See* Fed. Hous. Fin. Agency v. JPMorgan Chase & Co., 978 F. Supp. 2d 267 (S.D.N.Y. 2013).

[142] EPSTEIN ET AL., *supra* note 132, § 1.02.

[143] Wultz v. Bank of China Ltd., 61 F. Supp. 3d 272, 286 (S.D.N.Y. 2013).

[144] EPSTEIN ET AL., *supra* note 132, § 1.02.

[145] The five factors are "(i) the relevance of the evidence sought to be protected; (ii) the availability of other evidence; (iii) the 'seriousness' of the litigation and the issues involved; (iv) the role of the government in the litigation; and (v) the possibility of future timidity by government employees who will be forced to recognize that their secrets are violable." *In re* Subpoena Served upon the Comptroller of the Currency, 967 F.2d 630, 634 (D.C. Cir. 1992).

[146] *See id.*

[147] Delozier v. First Nat'l Bank of Gatlinburg, 113 F.R.D. 522, 526 (E.D. Tenn. 1986).

[148] *See* Qi Chen et al., *Bank Transparency and Deposit Flows*, 146 J. FIN. ECON. 475 (2022).

enter examiner findings into evidence. Similar to how attorney-client privilege promotes frank conversation between clients and their lawyers, protecting bank examination records encourages banks to be truthful with their regulators.[149] Courts have noted that publicizing examination records could have a "chilling effect" on banks' communication with the agencies that oversee them and, thus, the ability of regulators to perform their duties.[150]

D. The Freedom of Information Act

If it isn't possible to obtain proprietary information about banks in the course of litigation, is it possible to obtain confidential information about banks under the Freedom of Information Act ("FOIA")? Here, the answer is also "no." Importantly, there are two FOIA exemptions that are relevant for our purposes: exemption 4 and exemption 8. The former protects "[t]rade secrets or commercial or financial information that is confidential or privileged," while the latter protects "[i]nformation that concerns the supervision of financial institutions."[151]

During the Global Financial Crisis, Fox News submitted two FOIA requests to the Federal Reserve Board asking for, *inter alia*, the names of the banks that received loans from the Federal Reserve Banks from August 2007 to November 2008.[152] The second sought the names of the borrowing banks, the amount they borrowed, and the collateral pledged as to all loans made by the twelve Federal Reserve Banks during September and October 2008.[153] The Federal Reserve refused to disclose the requested information on the basis that the information was exempt from disclosure under FOIA exemption 4, which exempts from disclosure "commercial or financial information obtained from a person and is privileged or confidential."[154] The court held that "[t]he Board's concerns, that rumors are likely to begin and runs on banks are likely to develop, cannot be dismissed."[155]

In addition to exemption 4, we note that FOIA exemption 8 is broad in scope. It reads: "[FOIA disclosure provisions] do not apply to matters that are . . . contained in or related to examination, operating, or condition reports prepared by, on behalf of, or for the use of an agency responsible for the regulation or supervision of financial

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[149] EPSTEIN ET AL., *supra* note 132, § 1.01[1].

[150] *In re* Bank One Sec. Litig., First Chi. S'holder Claims, 209 F.R.D. 418, 428 (N.D. Ill. 2002).

[151] *Freedom of Information Act: Frequently Asked Questions*, FOIA, https://www.foia.gov/faq.html (choose "What are FOIA exemptions?" from dropdown) (last visited July 15, 2025).

[152] Fox News Network, LLC v. Bd. of Governors of the Fed. Rsrv. Sys., 639 F. Supp. 2d 384, 391 (S.D.N.Y. 2009), *vacated*, 601 F.3d 158 (2d Cir. 2010).

[153] *Id.*

[154] Freedom of Information Act § 3(e)(4), 5 U.S.C. § 552(b)(4).

[155] *Fox News Network*, 639 F. Supp. 2d, at 401.

institutions . . . ."[156] In 1972, the U.S. District Court for the District of Columbia held in *M.A. Schapiro & Co. v. SEC*[157] that national securities exchanges and broker-dealers are not "financial institutions" within the meaning of the exemption. But in *Mermelstein v. SEC*,[158] the court held that the legislative history of the subsequent Sunshine Act of 1976 informs the scope of "financial institutions" for FOIA purposes. While conceding that Congress had not explicitly disavowed the *Schapiro* decision, the *Mermelstein* Court noted that, shortly after the passage of the Sunshine Act, "a congressionally-sanctioned publication asserted that FOIA Exemption 8 protects from disclosure . . . 'documents prepared by the [SEC] regarding the New York Stock Exchange, and other similar information,'"[159] seemingly directly contradicting the holding of *Schapiro*.

Later courts have followed this reasoning to extend exemption 8 not only to banks but also to "savings and loan associations, credit unions, brokers and dealers in securities or commodities, exchanges dealing in securities or commodities, such as the New York Stock Exchange, investment companies, investment advisors, [and] self-regulatory organizations."[160]

Courts have credited similar arguments with respect to the FDIC, noting in *McKinley v. FDIC* that its

> bank supervisory process "is one of continual interaction and information-sharing by regulated entities with their bank supervisors"; that the withheld materials "constituted part of a fast moving, real-time effort by the Board to monitor the possible impact of a Bear Stearns bankruptcy filing on financial institutions regulated by the Board"; . . . [and] that the information was provided based on strict assurances of confidentiality . . . .[161]

Elaborating on *McKinley*, the District Court for the District of Columbia later noted that exemption 8 has a "secondary purpose—to secure the relationship between banks and their supervising agencies," which would be harmed by publicization of information disclosed by banks to their regulators.[162] All in all, courts have recognized

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[156] 5 U.S.C. § 552(b)(8).

[157] 339 F. Supp. 467, 470 (D.D.C. 1972).

[158] 629 F. Supp. 672, 674–75 (D.D.C. 1986).

[159] *Id.* at 674 (quoting House Comm. on Gov't Operations, *A Citizens Guide on How to Use the Freedom of Information Act and the Privacy Act in Requesting Government Documents,* H.R. REP. NO. 95-793, at 13 (1977)).

[160] Feshbach v. SEC, 5 F. Supp. 2d 774, 781 (N.D. Cal. 1997) (emphasis omitted) (quoting S. REP. NO. 94-354, at 24 (1975)).

[161] McKinley v. FDIC, 744 F. Supp. 2d 128, 143 (D.D.C. 2010) (internal citations omitted).

[162] Jud. Watch, Inc. v. U.S. Dep't of the Treasury, 796 F. Supp. 2d 13, 38 (D.D.C. 2011).

that banking regulation raises certain policy concerns which warrant especial deference to regulators' determinations regarding the need for confidentiality.

IV. SUCCESSIVE ATTEMPTS, BEGINNER'S LUCK, AND INTELLIGENT DESIGN

Given the fundamental confusion about "banks" and the perils of runnable short-term debt, it might not come as a surprise that successful policies to combat systemic risk and mitigate financial crises were not planned by intelligent design. We present two examples of successful reforms—the National Bank Act of 1863 and the Banking Act of 1933—that we argue Congress "stumbled into" following national emergencies.[163] Each time, critics argued that the legislation had key flaws. Each time, exigent circumstances carried the day. Call it beginner's luck. Yet when policymakers planned by intelligent design, their regulatory experiments were less successful. We specifically examine "double liability" and "capital regulations."

Importantly, in this Part, we elaborate upon the second conceptual error we flagged in the Introduction. Systemic crises are vastly different from the failure of individual banks. Regulating with the intent to enhance the safety and soundness of individual banks is not sufficient to produce system-wide stability. The National Bank Act of 1863 and the Banking Act of 1933 were system-wide programs. Present-day regulations, on the other hand, are not.

A. The National Bank Act of 1863 and National Currency

The National Bank Act of 1863 was proposed with the primary purpose of funding the Civil War,[164] not with the goal of mitigating systemic risk. To be clear, many lawmakers did view the legislation as building a system of national banks and circulating a national currency, but those would be in the service of financing the Civil War, not improving financial stability. Indeed, when faced with criticisms over the legislation, President Lincoln's Treasury secretary, Salmon P. Chase, asserted that he had to "first . . . provide for the vast demands of the war."[165] Yet the creation of a

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[163] Whether and how crises tend to change legislative or administrative priorities is a topic of contention. *See, e.g.*, Roberta Romano, *Are There Empirical Foundations for the Iron Law of Financial Regulation?* (Yale L. & Econ. Rsch. Paper, 2023), https://ssrn.com/abstract=4340042 (arguing that "crisis-driven" financial legislation results in more regulation than non-crisis-driven laws). *But cf.* Peter Conti-Brown & Michael Ohlrogge, *Financial Crises and Legislation*, 4 J. FIN. CRISES, no. 3, 2022, at 1, 20–27 (presenting statistical evidence that, unlike securities laws, important banking legislation is only modestly correlated with antecedent financial crises).

[164] *See* John Wilson Million, *The Debate on the National Banking Act of 1863*, 2 J. POL. ECON. 251, 252 (1894).

[165] Letter from Salmon Portland Chase, Secretary of the Treasury, to William Cullen Bryant (June 30, 1864), *reprinted in* THE LIFE AND PUBLIC SERVICES OF SALMON PORTLAND CHASE at 405 (J.W. Schuckers ed., New York, D. Appleton & Co. 1874); *see also* ROGER LOWENSTEIN, AMERICA'S BANK: THE EPIC STRUGGLE TO CREATE THE FEDERAL RESERVE 14 (2015).

single currency backed by the credit of the federal government resulted in money that was more information-insensitive than the system of state currencies that existed before.

Congressional debate on the legislation was brief, taking up only three days in the Senate and two days in the House. Senate Bill S. 486, "to provide a national currency, secured by a pledge of United States stocks, and to provide for the circulation and redemption thereof," was introduced by Senator Sherman on January 26, 1863.[166] Senator Sherman argued that a national banking system and a national currency were the best of several alternatives.[167] Not surprisingly, there were many critics of creating such a system.[168]

Earlier in 1862 there had been objections to replacing the older "greenback" system of direct paper-money issuance by the government. Representative Baker "favored the continuation of the use of United States notes in order to save the government the interest on the bonds proposed by the national bank bill,"[169] and Senator Collamer similarly argued that "paying the banks twelve millions a year" for the task of circulating currency was both an unjustifiable expense and a sign of national desperation.[170] Senator Fessenden attacked the legal-tender clause of the Act, arguing that backing the new notes with debt amounted to "a confession of bankruptcy," drawing a comparison to heavily discounted greenbacks as well as the paper currency of the Confederacy, and arguing that requiring individuals to accept notes as legal tender would encourage "bad morals."[171]

Senator Collamer endorsed Senator Fessenden's objections and further argued that the bank bill was unconstitutional on the grounds that the framers had stricken a clause permitting the government to "emit bills on the credit of the United States" to prevent the use of such notes as currency;[172] that paper money was bound to trade at discounts, as it had in contemporary Austria or in the Revolutionary period;[173] and that such inflation would fall inequitably on poor wage-earners, including, pointedly, enlisted soldiers fighting on behalf of the Union.[174] The other major source of opposition to the Act was a perception that it would undermine and eventually destroy the existing

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166 CONG. GLOBE, 37th Cong., 3d Sess. 505 (1863).

167 *Id.* at 840–43.

168 *Id.* at 869–74.

169 Million, *supra* note 164, at 254.

170 *Id.* at 255.

171 CONG. GLOBE, 37th Cong., 2d Sess. 765 (1862).

172 *Id.* at 767–69.

173 *Id.* at 770.

174 *Id.*

state banks. Senator Davis characterized the national-banks system as a "monster making its appearance in our midst for the purpose of breaking down this system of State banks."[175] Indeed, one could argue that *the main* opponents were state banks which feared losing profits associated with their bank note issuances. (State banks weren't wrong. Between 1863 and 1870, 263 state banks closed and there were 934 conversions from state charters to the new national bank charter.[176])

At the end of the day, the National Bank Act introduced national banks, which were federally regulated. The banknotes of national banks were fully backed by U.S. Treasury bonds on deposit at the U.S. Treasury.[177] The economic benefits of national banknotes came from the fact that they were more resilient to localized disturbances and therefore more information-insensitive.[178] Such information-insensitive banknotes could circulate further, and banks could more easily enter new markets.[179] Economic activity increased as a result.[180]

B. Double Liability for Banks Before 1933

During the 19th century, running through the National Bank Era, the United States also experimented with "double liability" for bank shareholders. Under double liability, shareholders could lose the par value of shares owned *in addition to the shares' initial purchase price*. Double liability was intended as protection for noteholders.

Double liability in the United States began when several states imposed double liability on chartered banks.[181] But, in general there was no uniformity, because individual states, rather than the federal government, designed and imposed double liability. Similarly, the spread of double liability across the states was not uniform. By 1851, "double liability was the law for state-chartered banks in fewer than ten states."[182] With the passage of the National Bank Act, double liability became required for federally chartered banks:

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[175] CONG. GLOBE, 37th Cong., 3d Sess. 880 (1863).

[176] Matthew Jaremski, *State Banks and the National Banking Acts: Measuring the Response to Increased Financial Regulation, 1860–1870*, 45 J. MONEY, CREDIT & BANKING 379 (2013).

[177] *See* Gorton & Zhang, *supra* note 14, at 945.

[178] *Id.*

[179] *Id.*

[180] *See* Chenzi Xu & He Yang, *Real Effects of Supplying Safe Private Money*, J. FIN. ECON., July 2024, at 1, 12–15; *see also* Scott Fulford, *If Financial Development Matters, Then How? National Banks in the United States, 1870–1900* (Bos. Coll., Working Paper No. 753).

[181] Howard Bodenhorn, 2015, "Double Liability at Early American Banks,' NBER Working Paper 21494.

[182] Richard S. Grossman, *Fear and Greed: The Evolution of Double Liability in American Banking, 1865–1939*, 44 EXPLS. ECON. HIST. 59, 61 (2007).

> The shareholders of each [national bank association] shall be held individually responsible, equally and ratably, and not one for another, for all contracts, debts, and engagements of such association to the extent of the amount of their stock therein at the par value thereof, in addition to the amount invested in such shares . . . .[183]

Senator Sherman of the Senate Finance Committee articulated this motivation for double liability:

> We agreed to it, I believe, unanimously, that the note-holder, the depositor, the creditor of these banks should have something more than the stock to fall back upon; and that if you provide a limited liability to an amount equal to the stock, in addition to the stock, you will make it ample beyond all danger. That principle has been embodied in the laws of a great majority of the States . . . .[184]

By 1930, double liability was the law for state-charted banks in 34 states, as shown in Table 1 below. Notably, the table provides a snapshot on the eve of the Great Depression. Double liability was widespread, and the Great Depression would be a test of the system.

Table 1: The State of Bank Liability Regimes in 1930[185]

Liability Regime	States
Triple Liability	Colorado
Proportionate Liability	California
Limited Liability, required by constitution	Alabama, Idaho, Missouri
Limited Liability, not required by constitution	Connecticut, Delaware, Louisiana, New Jersey, Tennessee, Virginia
Double Liability, required by constitution	Arizona, Illinois, Indiana, Iowa, Kansas, Maryland, Minnesota, Nebraska, New York, Ohio, Oregon, South Carolina, South Dakota, Texas, Utah, Washington, West Virginia
Double Liability, not required by constitution	Arkansas, Florida, Georgia, Kentucky, Maine, Massachusetts, Michigan, Mississippi, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Oklahoma, Pennsylvania, Vermont, Wisconsin, Wyoming

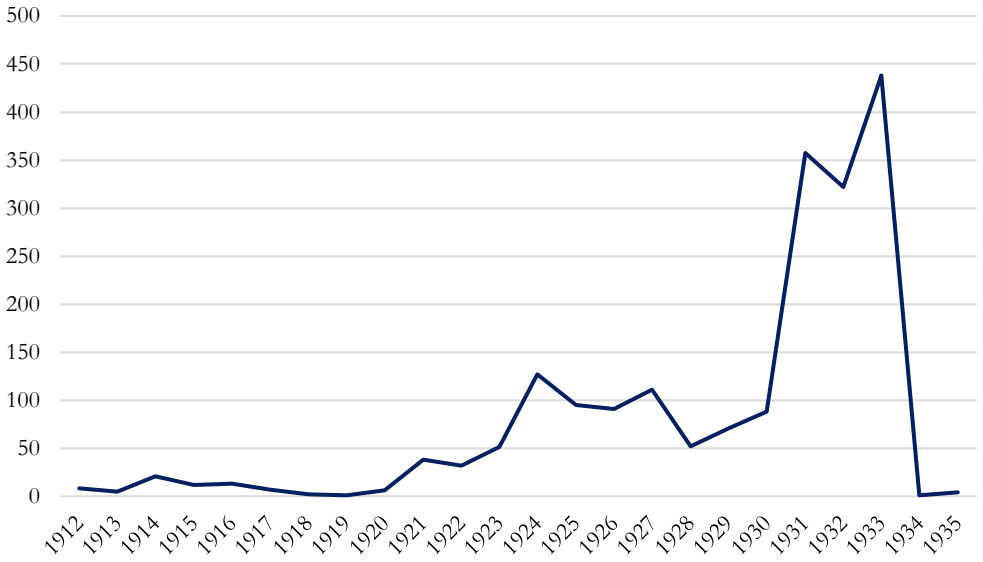
[183] National Bank Act of 1864 § 12, ch. 106, 13 Stat. 99, 102–03, *repealed by*, Act of Sep. 8, 1959, Pub. L. No. 86-230, § 7, 73 Stat. 457, 457.

[184] CONG. GLOBE, 37th Cong., 3d Sess. 824 (1863).

[185] Ralph W. Marquis & Frank P. Smith, *Double Liability for Bank Stock*, 23 AM. ECON. REV. 490 (1937).

Figure 1 below presents the magnitude of the Great Depression. Thousands of banks failed. The proliferation of double liability obviously did not prevent the collapse of the U.S. banking system. But why? Here, it is instructive to consider the testimony of Leo Crowly, then-Chairman of the Board of the FDIC.

Figure 1: National Bank Failures, 1912–1935[186]



According to Chairman Crowly:

> Losses to depositors have been most severe during the periods of business depression. Two-thirds of the losses during this entire 70-year period resulted from bank suspensions occurring during the 4 years ending June 29, 1934. In other words, two-thirds of the losses in the banking system in this country took place from 1929 to June 30, 1934. For these 4 years losses to depositors are estimated at $1.32 per year for each $100 of deposits in the commercial banking system. Comparable losses during the depression of the 1870's amounted to 35 cents, and during the depression of the 1890's amounted to 23 cents.[187]

The table below, from Chairman Crowly's testimony, compares three periods: 1873–1878, 1892–1897, and 1931–1934. The Great Depression, 1929–1934, was the biggest

[186] DEP'T OF THE TREASURY, SEVENTY-THIRD ANNUAL REPORT OF THE COMPTROLLER OF THE CURRENCY FOR THE YEAR ENDED OCTOBER 31, 1935, at 4 (1936) [hereinafter 1935 OCC Report].

[187] Banking Act of 1935, Hearings on H.R. 5357 Before the Comm. on Banking and Currency, 74th Cong. 8 (1935) (statement of Leo Crowley, Chairman of the Board, FDIC).

test faced by the double liability regime. Over 9,000 banks failed in the Great Depression.[188]

Table 2: Losses to Depositors in Commercial Banks that Suspended Redemption During Crises and Did Not Reopen

	All commercial banks		
	1873–1878	1892–1897	1931–1934
Deposits in suspended banks (millions of dollars)	$85	$134	$5,356
--Secured	10	13	637
--Unsecured-under $5,000	66	108	3,256
--Unsecured-over $5,000	9	18	1,473
Estimated losses in deposits (millions of dollars)	26	43	2,142
--Secured deposits	*	*	*
--Unsecured-under $5,000	28	36	1,478
--Unsecured-over $5,000	3	7	564
Average loss per year for each $100 if deposits in active banks	0.35	0.28	1.28
--Unsecured-under $5,000	0.21	0.19	0.80

The number of banks that failed during the Great Depression was not like any other crisis. It was difficult or impossible to determine the losses to apportion. Illiquid securities had to be valued. Then there were legal troubles.[189] In 1935 the Legal Department of the OCC supervised 15,000 cases in litigation.[190] With so many banks failing, the loss of financing capacity caused assets to sell at a discount relative to fundamental value.

Liquidations during the Depression took longer and resulted in more severe losses than in previous bank failure episodes. Bank supervisors were often caught unprepared for the task of liquidating massive amounts of bank assets, not only in terms of personnel, but also legal precedent and market depth.[191] According to Cyril Upham

[188] David C. Wheelock, Regulation, Market Structure, and the Bank Failures of the Great Depression, FED. RSRV. BANK OF ST. LOUIS REV., Mar./Apr. 1995, at 27.

[189] CYRIL B. UPHAM & EDWIN LAMKE, CLOSED AND DISTRESSED BANKS 40 (1934).

[190] 1935 OCC Report, *supra* note 186, at 11.

[191] Ali Anari, James Kolari & Joseph Mason, *Bank Asset Liquidation and the Propagation of the U.S. Great Depression*, 37 J. MONEY, CREDIT AND BANKING 753, 758 (2005); *see also* Rodney Ramcharan & Raghuram Rajan, *Financial Fire Sales: Evidence from Bank Failures* (Fed. Rsrv. Bd., Working Paper No. 2014-67, 2014).

and Edwin Lamke: "During the last few years, the staffs of the supervisors have been heavily taxed with liquidation cases that the active banks have been neglected."

Suffice it to say, double liability did not provide protection for depositors when a systemic event occurred.[192] In 1933, Congress amended the National Bank Act and the Federal Reserve Act to remove double liability from national bank shares issued after June 16, 1933.[193]

C. The Banking Act of 1933 and Federal Deposit Insurance

The story of deposit insurance begins with the country-wide banking panic that occurred in the 1930s and what transpired in the early days of President Franklin D. Roosevelt's administration, who announced the following to Congress:

> On March 3 banking operations in the United States ceased. To review at this time the causes of this failure of our banking system is unnecessary. Suffice it to say that the government has been compelled to step in for the protection of depositors and the business of the nation.[194]

When President Roosevelt spoke these words, the U.S. banking system was in ruins with 9,000 banks having ceased operations. This was the motivation for the founding of the FDIC, created from the Banking Act of June 16, 1933.[195] The Act was a piece of comprehensive banking reform legislation enacted to remedy the U.S. banking crisis following the 1929 stock market crash. Establishing deposit insurance was extremely effective in mitigating systemic risk (by containing bank runs), but its adoption was highly controversial.[196] It was pushed over the finish line by *populist* political demands, not by technocrats.

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[192] Ralph W. Marquis & Frank P. Smith, *Double Liability for Bank Stock*, 27 AM. ECON. REV. 490, 502 (1937) ("[Double liability] has been on trial in some states for over a century . . . The fact that the National Banking system and 19 of our 38 state banking systems have dropped double liability provisions since 1930 would seem to be presumptive proof that this principle has not been satisfactory.")

[193] Banking Act of 1933, Pub. L. No. 73-66, § 22, 48 Stat. 162, 189, *repealed by*, Act of Sep. 8, 1959, Pub. L. No. 86-230, § 7, 73 Stat. 457, 457.

[194] President Franklin D. Roosevelt, *Message to Congress on the Resumption of Banking* (Mar. 9, 1933), https://www.presidency.ucsb.edu/documents/message-congress-resumption-banking.

[195] Pub. L. No. 73-66, 48 Stat. 162 (codified as amended in scattered sections of 12 U.S.C.).

[196] An alternative proposal which gained significant support in 1933 was a policy of 100% reserve banking, which would achieve many of the same aims as deposit insurance but sacrifice the efficiencies of fractional-reserve banking. Proposals for 100% reserve banking or a variant thereof periodically resurface. *See* Adam J. Levitin, *Safe Banking: Finance and Democracy*, 83 U. CHI. L. REV. 357, 415 (2016).

1. Debates in Congress

While the Banking Act of 1933 established the nation's first federal deposit insurance system, it was not the first time that deposit insurance was introduced in Congress. Between 1886 and 1933, over one hundred deposit insurance proposals were introduced.[197] The first of these bills to leave committee, however, was introduced by Representative Henry B. Steagall on April 14, 1932—a little over a year before the Banking Act of 1933 was introduced in Congress.[198] This bill provided for the establishment of a federal insurance fund for bank deposits. This fund was to be raised by the banks, with the initial fund—approximately $150 million—coming from the U.S. Treasury.[199] After Representative Steagall introduced the bill, it was sent to the House Banking and Currency Committee, chaired by Representative Steagall, which reported it out on April 19, 1932, with the recommendation that the bill should pass.[200]

The House vigorously debated this bill, with debate centering around the efficacy of the bill in remedying the national banking crisis. Proponents believed that deposit insurance was necessary to restore public confidence in the nation's banking system, which in turn would reduce the threat of bank runs, thus allowing banks to employ their deposits to stimulate economic activity and remain in business.[201] Proponents of the bill also believed deposit insurance was necessary to protect depositors from losing their money without requiring the government to directly control the management of banks.[202]

On the other hand, opponents of the bill questioned the efficacy of a federal deposit insurance program, pointing to the fact that several states had adopted comparable bank deposit schemes in response to the Panic of 1907, all of which collapsed.[203] Proponents of the bill pushed back on this argument, reasoning that notwithstanding their failures, these state deposit insurance programs still saved depositors from multi-million dollar losses and prevented bank runs that would have otherwise closed hundreds more banks.[204] Another argument made by opponents was that it would require well-managed banks to bear the losses of poorly managed banks, and it even bore the potential of encouraging more bank failures by disincentivizing banks from

[197] SUSAN ESTABROOK KENNEDY, THE BANKING CRISIS OF 1933, at 215 (1973).

[198] 75 CONG. REC. 8273 (1932).

[199] H.R. 11362, 72d Cong. (1932).

[200] H.R. REP. NO. 72-1085 (1932).

[201] *Id.* at 8.

[202] 75 CONG. REC. 11321 (1932).

[203] *E.g.*, 75 CONG. REC. 11336 (1932); *see also* KENNEDY, *supra* note 197, at 215.

[204] H.R. REP. NO. 72-1085, at 6 (1932).

employing good management practices.[205] Said differently, the overarching concern was related to moral hazard.

Following the House debate, the bill passed in the House on May 29, 1932. It was then sent to the Senate, where it was referred to the Senate Banking and Currency Committee. The Committee—chaired by Senator Glass who, at the time, was a staunch opponent of deposit insurance—did not take up the bill before the close of the 72nd Congress.

In the months that followed, the nation's economic conditions worsened. Around the same time, a high-profile investigation conducted by the Senate Banking and Currency Committee, known as the Pecora Investigation, revealed a wide range of unsavory banking practices that were used for personal gain at depositors' expense.[206] The nation's worsening economic conditions and the shocking revelations uncovered by the Pecora Investigation ignited forceful public demand for immediate bank reform, with demand centering around the adoption of deposit insurance.[207] As reported by the press, "Washington [did] not remember any issue on which sentiment of the country has been so undivided or emphatically expressed as this."[208]

2. FDR's Dilemma

Upon taking office in March 1933, President Roosevelt promptly turned his attention to remedying the nation's banking crisis. He held a conference at the White House with Treasury officials, representatives from the Federal Reserve Board, and Senator Glass. Following this meeting, it was reported that some "phase of banking legislation would be advanced" to repair the nation's banking system as quickly as possible.[209] However, as President Roosevelt made clear at his first presidential press conference on March 8, 1933, he *opposed* deposit insurance.[210]

For weeks, President Roosevelt continued meeting with various stakeholders, including Senator Glass and Representative Steagall, to iron out the bank reform legislation.[211] While Senator Glass previously opposed a federal deposit insurance program, he yielded to public opinion and began advocating for deposit insurance in

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[205] 75 CONG. REC. 11219–20, 11222 (1932).

[206] S. Rep. No. 73-1455, at 163–68 (1934) (highlighting such abuses and noting that commercial banks violated the fiduciary duty they owed their depositors who sought disinterested investment advice).

[207] HELEN M. BURNS, THE AMERICAN BANKING COMMUNITY AND NEW DEAL BANKING REFORMS 1933-1935, at 78 (1974).

[208] *Id.* at 80 (quoting *Deposit Insurance*, BUS. WK., Apr. 12, 1933, at 3).

[209] *Id.* (citing *The New York Times*, March 30, 1933).

[210] President Franklin D. Roosevelt, *Press Conference*, AM. PRESIDENCY PROJECT (Mar. 8, 1933), https://www.presidency.ucsb.edu/documents/press-conference-25; KENNEDY, *supra* note 197, at 215.

[211] *Id.* at 218.

his meetings with President Roosevelt because "the public demand [was] so strong."[212] Deposit insurance had for some time been primarily a populist and rural cause.[213] The unprecedented number and scale of banking failures in the early 1930s, however, elevated debates over banking reform from a contest of "special interests measured on hidden scales in smoke-filled rooms" to the popular stage.[214] And public opinion had turned sharply against the banking industry, as "[t]he press and the Pecora hearings blamed the speculative excesses of the 1920s on the big-city bankers, depicting the depositor—and to some extent the bank shareholder—as a victim of bankers' greed."[215] Representative Steagall, selling deposit insurance to the public, stressed "the unfairness of making depositors pay for bankers' errors" and proposed a system which would set a ceiling on insured deposits to focus protection on the small depositor.[216]

Industry opinion had been divided. Small rural "unit banks" of only one branch tended to support deposit insurance, but their influence had waned in the 1920s, and a number of state-level experiments with deposit insurance had ended in failure.[217] There was also a geographic disparity in pre-Depression support for deposit insurance: From the Panic of 1907 up until 1931, proposals for a national system came predominantly from rural districts in the West, Midwest, and South, where relatively fragile banking systems would stand to gain from cross-subsidization by large Eastern banks.[218] In late 1931, however, owing to a groundswell of popular support, "[t]he number of bills submitted to both the House and Senate for deposit insurance began to rise,"[219] including proposals from representatives of large states such as New York and Ohio which had not sponsored deposit insurance bills in the prior period.[220]

In the end, given how strongly the public favored deposit insurance, Senator Glass warned President Roosevelt that delaying deposit insurance would exacerbate the nation's economic crisis.[221] President Roosevelt signed the bill into law on June 16,

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[212] BURNS, *supra* note 207, at 80 (quoting *Deposit Insurance*, BUS. WK., Apr. 12, 1933, at 3).

[213] Christopher W. Shaw, *"The Man in the Street Is for It": The Road to the FDIC*, 27 J. POL'Y HIST. 36 (2015).

[214] Charles W. Calomiris & Eugene N. White, *The Origins of Federal Deposit Insurance*, *in* THE REGULATED ECONOMY: A HISTORICAL APPROACH TO POLITICAL ECONOMY 145, 172 (Claudia Goldin & Gary D. Libecap eds., 1994).

[215] *Id.*

[216] *Id.* at 173.

[217] *Id.* at 146, 173.

[218] *Id.* at 155.

[219] *Id.* at 166.

[220] *Id.* at 155.

[221] *Id.* at 175 (citing Glass to Roosevelt, May 26, 1933, President's Personal File, Folder 687, Roosevelt Papers).

1933.[222] Despite the hesitations, deposit insurance was a success, creating a "Quiet Period" that lasted multiple decades.[223] Remarkably, in light of earlier skepticism,[224] the banking system now broadly supports deposit insurance. It has been noted that the primary beneficiary of the deposit-insurance regime are banks themselves, especially smaller banks, for which "government guarantees of their liabilities enhance their credit and therefore lower their costs of doing business."[225]

D. The Basel Accord of 1988 and the Pivot to Capital Regulation

Having discussed the two historical examples of serendipitous financial regulation, we now turn to financial regulation by intelligent design and the story of bank capital. What the reader will see in this section is an example of the second error we identified: Lawmakers forget that improving the resiliency of an individual bank is not sufficient for mitigating systemic risk. The safety and soundness of an individual bank is related to, but not the same as, system-wide financial stability.

The assumption underlying capital standards is that banks do not sufficiently manage risk themselves. Thus, risk regulations are done primarily through the regulation of bank capital by setting requirements as to how much capital banks must hold. As noted by Michael Barr, then the Vice Chair for Bank Supervision of the Federal Reserve:

> [A] safe and sound banking system is critical to a healthy economy, and capital is foundational to that safety and soundness. Capital is the cushion that allows a bank to absorb losses—no matter their source—and ensures that banks can continue to play their critical role serving households and businesses. The goal of our [proposed rule to implement Basel III capital standards] is simple: to increase the strength and resilience of the banking system by better aligning capital requirements with risk.[226]

The idea of improving financial stability by regulating bank capital began in the 1980s, when the Latin American debt crisis increased concerns that the capital held by large

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[222] Banking Act of 1933, Pub. L. No. 73-66, 48 Stat. 162 (codified as amended in scattered sections of 12 U.S.C.).

[223] GORTON, *supra* note 17.

[224] *See* DAN AWREY, BEYOND BANKS: TECHNOLOGY, REGULATION, AND THE FUTURE OF MONEY 91 (2024) (noting that "even the banking industry itself viewed deposit insurance with some skepticism, with the president of the American Bankers Association labeling it 'unsound, unscientific and dangerous.' . . . But in the end, overwhelming public support for deposit insurance won the day, and the Glass-Steagall Act was signed into law").

[225] Jonathan R. Macey & Geoffrey P. Miller, *Deposit Insurance, the Implicit Regulatory Contract, and the Mismatch in the Term Structure of Banks' Assets and Liabilities*, 12 YALE J. ON REGUL. 1, 19 (1995).

[226] Joint Press Release, Statement by Vice Chair for Supervision Michael S. Barr (July 27, 2023), https://www.federalreserve.gov/newsevents/pressreleases/barr-statement-20230727.htm.

international banks was deteriorating.[227] The Basel Committee on Banking Supervision ("BCBS") was tasked to improve capital standards in their member countries' banking systems and achieve greater uniformity in the measurement of capital.[228] A key task for the BCBS was to harmonize minimum standards across its member countries to enable legislatures to enhance regulation without putting their domestic financial sectors at a disadvantage.[229] U.S. and U.K. regulators had imposed higher capital requirements for banks in the early 1980s,[230] creating growing consternation that their domestic banks were at a disadvantage in the global marketplace.[231]

Representatives from West Germany and France "argued that it was impossible to come up with any objective measure of how much capital was enough," and German regulators further took issue with the U.S. and U.K. definition of capital, which excluded corporate equities (relatively prominent on the balance sheets of German banks). [232] Japan, meanwhile, was concerned about American protectionism, as its banks were actively expanding in U.S. and other markets and enjoyed a competitive advantage by dint of lower capital requirements.[233] The Bank of England and the U.S. Federal Reserve forced the issue by announcing an agreement in 1987 that imposed "common standards for adequacy of bank capital" and attempted to create a "level playing field" by harmonizing the definition of capital, implementing a risk-weighted system for evaluating capital adequacy and including off-balance-sheet commitments in the calculus.[234] This bilateral accord created a "zone" of cooperation and a "tacit threat" of limiting foreign banks' access to the U.S. and U.K. markets.[235] After several

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[227] *See History of the Basel Committee*, BANK FOR INT'L SETTLEMENTS, https://www.bis.org/bcbs/history.htm (last visited July 15, 2025).

[228] *Id.* The BCBS was established in 1974 by the G-10 countries—Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom, and the United States—along with Switzerland and Luxembourg. BCBS members are representatives from member states' central banks and banking sector supervisory authorities. *See* Christopher Alessi, *The Basel Committee on Banking Supervision*, COUNCIL ON FOREIGN REL. (July 11, 2012, at 08:54 ET), https://www.cfr.org/backgrounder/basel-committee-banking-supervision; *see also* Michael B. Gordy et al., *Risk-Based Regulatory Capital and the Basel Accords*, *in* OXFORD HANDBOOK OF BANKING 550, 551 (Allen N. Berger et al. eds., 2d ed. 2015) ("All supervisors prefer a stable, well-capitalized banking system that is protected from adverse systematic shocks, but each country's banking authority also wants to see its own banks grow and compete aggressively in the international marketplace.").

[229] *See* David Andrew Singer, *Capital Rules: The Domestic Politics of International Regulatory Harmonization*, 58 INT'L ORG. 531, 545–46 (2004).

[230] Ethan B. Kapstein, *Resolving the Regulator's Dilemma: International Coordination of Banking Regulations*, 43 INT'L ORG. 323, 338 (1989).

[231] *Id.* at 339.

[232] *Id.* at 341.

[233] *Id.*

[234] *Id.* at 339.

[235] *Id.* at 344.

months of negotiations with Japanese, German, and other G-10 regulators to iron out differences, the Basel Accord was adopted in 1988.[236]

As technology revolutionized the financial system and banks engaged in new types of risky transactions, it became clear that the simplistic risk weights the Basel Accord used to calculate bank capital would be insufficient to ensure individual banks' safety and soundness. The Basel Committee reconvened and, in 2004, introduced the Basel II framework, seeking to more accurately account for the riskiness of certain transactions. Basel II drew criticism for, *inter alia*, its highly technical standards that made it challenging for some banks to comply with and difficult even for regulators to enforce.[237] And when the Global Financial Crisis began only a few years later, it became clear that Basel II failed to adequately build capital cushions to prevent spillover to the real economy. Responding to these failures, the Basel Committee published the Basel III standards in 2010, which sought to enhance both the quantity and quality of bank capital, as well as increase capital liquidity. Major economies largely implemented Basel III in the 2010s. Thus, with the Basel Accords, capital adequacy became the basis for global minimum standards in banking regulation.

Since the Basel Accords, and especially after the Global Financial Crisis, the ratio of capital to assets rose very sharply and has stayed elevated. Our view is that the focus on capital is misplaced.[238] While it is a robust method for improving the safety and soundness of *individual* banks, it is not an effective tool for combatting *systemic* banking crises. Because of "indirect correlations among firms with similar investments, liability funding sources, or collateral holdings," the sum of several banks' risk profiles may be greater than can be discerned by examining them individually.[239]

To demonstrate our point, we provide a stylized mathematical model to show what happens when banks are required to raise capital. The model could, of course, be more complicated, but this is not necessary to make our point, which is that there is an externality associated with raising capital. Capital can only come from the real sector, and moving capital from the real sector to the banking sector makes banks safer but at the cost of producing a riskier real sector. And this speaks to the second issue we identified earlier. Policymakers think only in terms of partial equilibrium, not general

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[236] *Id.*

[237] *See e.g.*, *The Development of New Basel Capital Accords: Hearing Before the S. Comm. on Banking, Hous., & Urb. Affs.*, 109th Cong. 85 (2005) (prepared statement of Daniel K. Tarullo, Professor, Geo. Univ. L. Ctr.) (questioning the ability of bank supervisors to enforce Basel II's complex capital standards and "the opaque manner in which they will be implemented").

[238] *See also* Saule T. Omarova, *What Kind of Finance Should There Be?*, 83 L. & CONTEMP. PROBS. 195, 199 (2020) (noting that a regulatory focus on the sheer degree of leverage in the financial system is not sufficient to address potential issues with the allocation of capital).

[239] Kress & Zhang, *supra* note 10, at 634.

equilibrium. In other words, policymakers focus too much on the impact of regulations on the regulated entity itself, without sufficiently weighing how that regulation might cascade through the rest of the financial system. Indeed, squeezing a balloon might deflate the area being squeezed, but that air is migrating elsewhere. Viewed in isolation—that is, in partial equilibrium—it's hard to argue against raising capital. In general equilibrium, however, the trade-offs become clearer.

The economy in our stylized model has two sectors: a real (non-banking) sector and a banking sector. These correspond to the two diagrams in Figure 2 below, where the real sector is depicted on the left and the banking sector is depicted on the right. The real sector comprises all non-banks (*e.g.*, manufacturers, hospitals, universities) and the banking sector consists of all the banks. For simplicity, other parts of the financial system are ignored. We start with the economy in equilibrium. We assume that people in the economy have already made their saving-consumption decisions. Furthermore, there are clienteles: Bondholders do not want to hold equity, and equity-holders do not want to hold bonds.

Each diagram takes the form of an accounting identity, with assets on the left-hand-side of the ledger and liabilities and equity on the right-hand-side of the ledger. (For visual simplicity and ease of presentation, equity is shown below liabilities, but the accounting identity holds: Assets are equal to liabilities plus equity.) In the initial equilibrium state, there is a demand for privately produced safe debt of $80 (*i.e.*, demand deposits). The banks have $20 in equity and make loans to the real sector of $100. The real sector has $20 of equity in addition to the $100 liability of loans.

Figure 2: The Initial Equilibrium

Real Sector

Assets	Liabilities
$120 real assets	$100 bank loans
	$20 equity

Banking Sector

Assets	Liabilities
$100 bank loans	$80 deposits
	$20 equity

Now suppose that the banks' capital requirement is raised from 20 percent to 30 percent. Where does the additional bank capital come from? It is not lying around on the ground.[240] Given the accounting identity and that in this economy people have already made their consumption-savings decision, the new bank capital can come only

[240] Attempts to synthesize deeper bank capitalization without actually pulling money out of the economy are often frustrated. *See, e.g.*, Choi & Zhang, *supra* note 16 (examining the insufficiency of contingent convertible bonds ("CoCos") to prevent the collapse of Credit Suisse and other crises).

from the real sector. The new equilibrium, under the constraint of the new capital requirement, is shown in Figure 3 below.

Figure 3: Higher Bank Capital Requirements

Real Sector

Assets	Liabilities
$110 real assets	$100 bank loans
	$10 equity

Banking Sector

Assets	Liabilities
$100 bank loans	$70 deposits
	$30 equity

The new bank capital requirement results in $10 of equity moving from the real sector to the banking sector, and a corresponding reduction in demand deposits. In the real sector, the $10 of equity is not replaced, increasing the leverage of the real sector. One may ask about the costs and benefits of raising capital requirements. In this simple example, the costs are clear.[241] There is a shortage of "safe debt" in the form of demand deposits, which fell from $80 to $70. While banks are "safer," their loans to the real sector are *riskier*, as the real economy's equity ratio fell from 20% (*i.e.*, $20/$100) to 10% (*i.e.*, $10/$100). And the real sector is smaller, having declined from $120 to $110. So, is the economy safer in general equilibrium? That's unclear.

Some readers may object to the simplicity of the model and invoke all sorts of ways that the outcome could be better. For example, could people change their savings-consumption decision and save more in the form of equity? They could, but then they have a lower demand for goods and services, so the price of the real sector output would fall, making the real sector less profitable. Or couldn't some of the real sector's loans become equity? No, because those are bank loans. One can twist and turn, but the reality is that, in general equilibrium, the new bank equity must come from somewhere. Unfortunately, policymakers tend to not think in general equilibrium.[242]

To be sure, there *is* another possible avenue for raising bank capital, but it's not a good one. We're referring to the development of a "shadow banking system," shown below in Figure 4. In this setup, one dollar of equity leaves the real sector (*i.e.*, from $10 to $9) to help finance the shadow banking sector. The shadow banks combine the one dollar of equity with $10 of "demand deposits" to generate loans of $11. With $100 in bank loans, $11 in shadow bank loans, and $9 in equity, the real economy is back to $120.

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[241] See Gary Gorton & Andrew Winton, *Liquidity Provision, Bank Capital, and the Macroeconomy*, 49 J. MONEY, CREDIT & BANKING 5 (2017), for the full dynamic model of this.

[242] Moreover, policymakers must contend with significant time lags in assessing cyclical (over-)leveraging of the real economy or of particular sectors. *See* Daniel K. Tarullo, *Macroprudential Regulation*, 31 YALE J. ON REGUL. 505, 514–15 (2014).

Figure 4: Banking in the Shadows

Real Sector	
Assets	**Liabilities**
$110 real assets	$100 bank loans
	$10 equity

Shadow Banks	
Assets	**Liabilities**
$0 "bank" loans	$0 "deposits"
	$0 equity

Banking Sector	
Assets	**Liabilities**
$100 bank loans	$70 deposits
	$30 equity

Real Sector	
Assets	**Liabilities**
$120 real assets	$111 "bank" loans
	$9 equity

Shadow Banks	
Assets	**Liabilities**
$11 "bank" loans	$10 "deposits"
	$1 equity

Banking Sector	
Assets	**Liabilities**
$100 bank loans	$70 deposits
	$30 equity

Of course, the shadow bank debt is not true demand deposits, hence the quotation marks around "demand deposits." That debt is not insured or backed by the sovereign, which means it's susceptible to runs. In the United States, runs on shadow banks have been all-too-familiar—whether it's a run on repo, a run on money market funds, or a run on stablecoin issuers.[243] All in all, we see that general equilibrium tells a different story than partial equilibrium. Raising capital requirements might appear to be a great idea for the safety and soundness of individual banks, but it might have detrimental consequences for system-wide financial stability. Increased regulation of the traditional banking sector observably drives business, especially certain risky activities such as subprime mortgage lending, into the shadow-banking sector.[244]

In sum, we observe that regulators and others clearly view bank capital as a bulwark against losses to the banks' depositors. Capital is viewed as a buffer because it is the amount that must be eaten away by losses before depositors face eminent losses. However, there are two general equilibrium effects that regulators must be aware of when setting capital ratios. First, increasing capital requirements may inadvertently push regulated banking activities outside of the regulatory perimeter. To be sure, if capital ratios are set high enough, serious losses can be mitigated. The buffer is larger.

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[243] *See* Gabriel V. Rauterberg & Jeffery Y. Zhang, *Shadow Banking and Securities Law*, 77 STAN. L. REV. 563 (2025) (describing the runs on shadow banks); *see also supra* note 7.

[244] *See* Andrew Metrick & Daniel Tarullo, *Congruent Financial Regulation*, BROOKINGS PAPERS ON ECON. ACTIVITY, Spring 2021, at 143, 149–56.

But if capital ratios are *too high*, then banks will exit, going into shadow banking. This is because their funding costs rise as capital ratios increase.

Second, requiring certain levels of bank capital means that the economy has to come up with the capital. Capital is not just lying around on the ground. Raising bank capital means that the rest of the economy holds less capital and, ceteris paribus, the rest of the economy becomes more highly levered. So, while individual banks appear safer in isolation, their loans are made to riskier firms in the rest of the economy. Reallocating capital in this manner is worthwhile for reducing the idiosyncratic risk of individual banks, but it cannot prevent systemic crises.

E. The GENIUS Act of 2025 and the Proliferation of Stablecoins

It is now apparent that Congress believes the path forward is stablecoin circulation in the broader economy. Despite good-faith efforts at regulation,[245] the proliferation of stablecoins could still result in a crisis.[246] Here, we briefly summarize the GENIUS Act of 2025[247] and why it falls short along the lines of our second error. That is, improving the safety and soundness of an individual stablecoin issuer is not sufficient to guard against systemic risk.

Congress's latest attempt to regulate these run-prone digital assets was introduced in the Senate on May 1, 2025.[248] After several weeks of debate and over one hundred proposed amendments, the Senate passed the bill on June 17 with only minor changes,[249] and the House passed it on July 17 without amendment.[250] The bill would require stablecoin issuers to hold "reserves backing the outstanding payment stablecoins of the permitted payment stablecoin issuer on an at least 1 to 1 basis."[251] Such reserves may include U.S. dollars, funds held as demand deposits or insured shares at IDIs, short-term Treasuries, repos and reverse repos, securities issued by MMFs holding those assets, or "any other similarly liquid Federal Government-issued asset approved by the primary Federal payment stablecoin regulator."[252] Issuers could use those reserves only for certain activities, such as satisfying margin obligations in

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[245] Gorton & Zhang, *supra* note 54, at 990–94.

[246] *See* Section I.D.

[247] S. 1582, 119th Cong. (2025).

[248] *Id.*; *see* 171 CONG. REC. S2736 (daily ed. May 1, 2025).

[249] *See* 171 CONG. REC. S3418–32 (daily ed. June 17, 2025). The bill passed 68–30, roughly along party lines, with two Republican senators voting against the bill and sixteen Democratic senators voting for it. *Id.*

[250] *See* 171 CONG. REC. H3449–50 (daily ed. July 17, 2025). The bill passed 308–122, with few Republican representatives opposing it and Democratic support split.

[251] S. 1532 § 4(a)(1)(A).

[252] *See id.*

repos and reverse repos, satisfying obligations associated with custodial services, and "creating liquidity to meet reasonable expectations of requests to redeem payment stablecoins."[253] Notably, stablecoin issuers would be exempt from maintaining the minimum capital that banks are required to hold.[254] The bill would require the Treasury to research means of detecting illicit activity, including money laundering, and the Financial Crimes Enforcement Network ("FinCen") would be required to issue guidance and regulations within three years relating to "[t]he implementation of innovative or novel methods, techniques, or strategies by regulated financial institutions to detect illicit activity involving digital assets," as well as standards for issuers to identify and report "fraud, cybercrime, money laundering, financing of terrorism, sanctions evasion, or insider trading."[255] The bill also exposes foreign issuers who do not or cannot register in the United States to civil liability if they issue their tokens in the United States and criminal liability if they do so knowingly.[256] Finally, stablecoins "shall not be backed by the full faith and credit of the United States, guaranteed by the United States Government, subject to deposit insurance by the Federal Deposit Insurance Corporation, or subject to share insurance by the National Credit Union Administration."[257]

Now, it is certainly a step in the right direction to have stablecoins backed by safe assets like short-term Treasuries.[258] However, the underlying presumption is that because the backing assets are high-quality and there would be regular reports, systemic risk would not be a problem. The presumption is unlikely to hold. While the legislation would improve microprudential safety and soundness, it is not sufficient to mitigate systemic risk.

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[253] *Id.* § 4(a)(2).

[254] *Id.* § 4(a)(4)(C).

[255] *Id.* § 9. The decentralized, pseudonymous nature of stablecoins lends itself to illicit activity. *See, e.g.*, Ben Foldy & Dylan Tokar, *While Senate Considers Genius Act, Russian Is Charged with Stablecoin Laundering*, WALL ST. J. (June 10, 2025, at 14:24 ET), https://www.wsj.com/finance/regulation/while-senate-considers-genius-act-russian-is-charged-with-stablecoin-laundering-da507c74?; UNITED NATIONS OFF. ON DRUGS & CRIME, CASINOS, MONEY LAUNDERING, UNDERGROUND BANKING, AND TRANSNATIONAL ORGANIZED CRIME IN EAST AND SOUTHEAST ASIA: A HIDDEN AND ACCELERATING THREAT (2024).

[256] S. 1532 §§ 3(a); 3(f)(1); 6(b)(5)(A).

[257] S. 1532 § 4(e)(1). *But see* Editorial Board, *A Senate Stablecoin Breakthrough*, WALL ST. J. (June 20, 2025, at 17:39 ET), https://www.wsj.com/opinion/senate-stablecoin-regulation-cynthia-lummis-sec-crypto-congress-1d514128 (warning that putting the FDIC in charge of regulating issuers gives the false impression that stablecoins will be federally insured)

[258] Gorton & Zhang, *supra* note 14, at 951–55.

Suppose each stablecoin issuer holds only Treasuries in its portfolio. Now play out the shock that hit Silicon Valley Bank in 2023.[259] If interest rates rise, then the value of the Treasuries—the assets meant to back the stablecoin's peg—will fall.[260]

If this happens to all stablecoin issuers, then they will seek to buy new Treasuries that are of higher value. As bond prices fall, issuers will need to buy more Treasuries. When interest rates are sufficiently high and the value of Treasuries are sufficiently low, holders of stablecoins will have to decide if their issuer has the cash to buy more Treasuries. At that point, holders of stablecoins might *ask questions* about what is in the rest of their issuer's portfolio and if the issuer is able to hedge any risk. Once the "No Questions Asked" condition is violated,[261] holders of stablecoins will begin to run. To be sure, rising interest rates is only one scenario where a common factor could affect all stablecoin issuers. There are other scenarios as well. Perhaps money market funds are misvalued and stablecoin holders do not know which issuers are most affected. Or perhaps there is a shortage of safe assets, and other firms have a demand for the exact same securities. In short, the GENIUS Act may be able to guard against idiosyncratic risk, but it cannot prevent systemic risk.[262]

Finally, as some have noted, the bill's limit on foreign issuers has three major loopholes.[263] First, the bill includes a three-year grace period during which stablecoin issuers and other "digital asset service providers" may offer and sell stablecoins regardless of the entity that issued it, including foreign and domestic unregulated issuers.[264] Additionally, the GENIUS Act offers carveouts for crypto entities to offer and sell stablecoins from foreign issuers that are not "permitted payment stablecoin issuers."[265] Third, and perhaps most importantly, the bill limits only the issuance, offer, and sale of certain stablecoins in the United States.[266] But as we noted above, the nature

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[259] See *supra* notes 60–64 and accompanying text.

[260] *Cf.* Andrew Metrick, *The Failure of Silicon Valley Bank and the Panic of 2023*, J. ECON. PERSPS., Winter 2024, at 133, 137 (describing interest rate risk and noting that "[e]ven risk-free securities like US government bonds are subject to interest-rate risk").

[261] See *supra* note 33; *see also* Barry Eichengreen, Opinion, *The Genius Act Will Bring Economic Chaos*, N.Y. TIMES (June 17, 2025), https://www.nytimes.com/2025/06/17/opinion/genius-act-stablecoin-crypto.html.

[262] The Congressional Research Service has acknowledged this. PAUL TIERNO & MARC LABONTE, CONG. RSCH. SERV., IF12984, KEY ISSUES IN STABLECOIN LEGISLATION IN THE 119TH CONGRESS 1 (2025) (noting that the enumerated reserve assets "are not completely riskless and liquid, and stablecoins face other types of risk, so some run risk would remain").

[263] Arthur E. Wilmarth, Jr., The Looming Threat of Uninsured Nonbank Stablecoins 81–84 (Geo. Wash. L. Sch. Pub. L. & Legal Theory, Working Paper No. 2025-33).

[264] S. 1532 § 3(b)(1); Wilmarth, *supra* note 263, at 81.

[265] Wilmarth, *supra* note 263, at 82–83 (listing the many such loopholes and the lobbying efforts of Tether, a stablecoin issuer registered in El Salvadore and by far the largest issuer of stablecoins, for more favorable terms in the bill).

[266] S. 1532 § 3(a), (b), (e); *see* Wilmarth, *supra* note 263, at 83.

of stablecoins and decentralized finance in general makes it impossible for an issuer to regulate its coins after it issues them. A Salvadoran stablecoin issuer, for instance, need not find a loophole or otherwise comply with U.S. stablecoin regulations for its products to circulate through the American economy, because they will naturally flow across borders.[267]

Given the GENIUS Act's shortcomings, what is the alternative? As we have written previously, when private bank notes circulated in prior centuries, they did so because there were no better alternatives.[268] But that is not the case in today's economy. There are alternatives to stablecoins, including the government's version of a stablecoin, which is otherwise known as a "central bank digital currency," or "CBDC," which the Federal Reserve has described as "analogous to a digital form of paper money."[269] But because CBDCs would be a liability of the central bank, they would mitigate financial stability risks. CBDCs are information-insensitive money. Poorly regulated stablecoins are not. Congress is, unfortunately, heading in the exact opposite direction.[270]

CONCLUSION

There have been financial crises for at least two hundred years. To many, it may seem that crises are inevitable, and nothing can be done about them since their causes are idiosyncratic. We do not believe that is the case. While the names of the short-term runnable debt have changed, the underlying economics have not. Thus, we argue that crises can be prevented with the right regulatory interventions. But doing so would require a course correction along two fronts—a course correction that is likely to strike many as counterintuitive.

First, lawmakers must internalize the fact that producers of runnable short-term debt are special. They are not like other firms in the economy. For non-bank products and services, prices move to equate supply and demand. But the price of runnable short-term liabilities is supposed to remain constant, so as not to reveal any information that would cause holders of the short-term debt to run. Because of this problem, secrecy surrounds banking. Thus, opacity can be beneficial, especially during a crisis. Second, lawmakers must keep general equilibrium effects in mind. Improving the resiliency of individual institutions is not sufficient to improve the stability of the system as a whole. If these two counterintuitive lessons can be internalized, society can move toward true

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[267] *Cf.* Gorton & Zhang, *supra* note 15, at 322–25 (noting the international and interconnected nature of the modern crypto space).

[268] Gorton & Zhang, *supra* note 54.

[269] BD. OF GOVERNORS OF THE FED. RSRV. SYS., MONEY AND PAYMENTS: THE U.S. DOLLAR IN THE AGE OF DIGITAL TRANSFORMATION 1 (2022), https://www.federalreserve.gov/publications/files/money-and-payments-20220120.pdf

[270] *See* Anti-CBDC Surveillance State Act, H.R. 1582, 119th Cong. (2025) (forbidding the Federal Reserve to "test, study, develop, create, or implement a central bank digital currency").

financial stability. Otherwise, financial crises will recur every generation, with every new form of private money created.

APPENDIX

As noted in the Introduction, financial crises are not infrequent. The table below shows the frequencies of crises and recessions for 140 years of history across fourteen countries. The countries included are the United States, Canada, Australia, Denmark, France, Germany, Italy, Japan, the Netherlands, Norway, Spain Sweden, Switzerland, and the United Kingdom, which collectively represent an overwhelming share of advanced economy GDP in the sample period. Notably, 1946 to 1970 was a "quiet period" when there were no financial crises. Subsequently, crisis frequency looks more like the period 1870 to 1939, when crises were frequent.

Table A1: Empirical Probabilities of Normal Recessions and Financial Crises[271]

	Fraction of Country-Years with Recessions and Crises				
	1870–1913	**1919–1938**	**1946–1972**	**1973–2008**	**Overall**
Normal recessions	0.17	0.10	0.06	0.09	0.11
Financial crises	0.06	0.05	0.00	0.03	0.04
All recessions	0.23	0.16	0.06	0.12	0.15

[271] The table is from Amir Sufi & Alan M. Taylor, *Financial Crises: A Survey* 3 (Nat'l Bureau of Econ. Rsch., Working Paper No. 29155, 2021), based on data from Òscar Jordà et al., *When Credit Bites Back*, 45 J. MONEY, CREDIT & BANKING (SPECIAL ISSUE) 3 (2013).

As discussed in Part II, restraining acts prohibited nonbanks from performing banking activities like issuing notes or taking deposits. The table below lists the states that enacted legislation to restrict unincorporated banking from 1781 to 1843.

Table A2: State Laws Restricting Unincorporated Banking, 1781–1843[272]

State	Date of Enactment	Type of Prohibition	Prescribed Penalty
Alabama	February 2, 1838	Bank notes of unchartered corporations.	Fines from $100 to $500 for each offence of issuing and from $20 to $100 for passing unauthorized notes.
Connecticut	June 5, 1830	Unauthorized bank notes.	Fines from $100 to $600 for issuing and $20 to $100 for passing unauthorized notes.
Delaware	February 4, 1811	Unincorporated banks.	$200 fine for managers of unauthorized banks; $500 fine for subscribing to shares.
Florida	December 22, 1824	Illegal to bring private bank notes to Florida.	Fine of $50 for each offence.
Georgia	December 19, 1816	Unchartered banks not to issue notes larger than $2.	Fine of 25% above face value.
	December 19, 1818	Unauthorized banks.	$1000 fine for each person involved; each day to count as a separate offense.
Illinois	1818	Unauthorized banks.	
	February 8, 1821	Unauthorized banks note issues.	$10,000 fine and loss of charter if violator is a corporation not authorized to issued notes.
Indiana	1816	Unauthorized banks.	$10,000 fine for participating in such banks; fine three times nominal amount for passing notes issue by such banks; loans contracted void.
Kentucky	February 8, 1812	Unauthorized banks.	

[272] White, *supra* note 96.

Louisiana	March 13, 1837	Partnership form of organization of banks.	
Maine	March 13, 1821	Unincorporated banks.	Notes void.
Maryland	December 24, 1810	Uncharted banks.	$2,000 fine for managing; $100 fine for subscribing to shares.
Massachusetts	June 22, 1799	Unincorporated banks.	
Michigan	November 4, 1815	Unincorporated banking.	$1,000 fine for each subscriber and proprietor.
	April 12, 1837	Unincorporated banks.	Notes void.
Mississippi	February 15, 1840	Unchartered banks.	$1,000 fine for subscribing; notes void.
Missouri	December 20, 1820	Private bank notes,	$50 fine for each note issued.
	December 10, 1824	Private bank notes.	$100 to $300 fine for issuing and $50 fine for passing.
New Hampshire	December 18, 1799	Unincorporated banks.	Fines from $400 to $1,000 for proprietors; notes void; bank notes issued recoverable.
New Jersey	February 15, 1815	Unincorporated banks.	$20,000 fine.
New York	April 11, 1804	Unincorporated banks.	$1,000 fine.
	April 2, 1818	Private individuals excluded from banking.	
North Carolina	November 18, 1816	Unauthorized bank notes.	$250 fine and jail sentence up to six months.
Ohio	February 8, 1815	Bank notes of unincorporated banks.	One-year prison and fine less than $5,000 for issuing.
	January 27, 1815	Unincorporated banks.	$1,000 fine for acting as a bank without a charter.
	February 8, 1819		$1,000 annual tax on unauthorized banks.
Pennsylvania	March 19, 1810	Unincorporated banks.	$100 fine for each offence of issuing, lending, or receiving deposits; loans void.
Rhode Island	June 14, 1805	Bank notes of unincorporated banks.	$100 fine for each offence of issuing.
South Carolina	December 21, 1814	Bank notes of unchartered banks.	Fine of ten times face value for issuing.

Tennessee	December 14, 1827	Private banks (gives time to close).	$500 annual tax to begin in 1829.
Vermont	March 4, 1797	Unauthorized notes.	Fine of three times nominal value for issuing; two times nominal value for passing.
Virginia	December 2, 1785	Private bank notes.	Fine of ten times face value for issuing.
	January 25, 1805	Bank notes on unchartered banks.	
	February 24, 1816	Lending by unchartered banks.	Loans void.

As noted in Part III, the typical mechanism of market discipline for monitoring firms does not translate to banking. It's harder for the market to provide that disciplining mechanism if it does not have information. Supervisors monitor and discipline banks through examinations, a practice which began before the Civil War. The table below lists the date of the first publication of state bank examination reports.

Table A3: Dates of First Publication of State Bank Examination Reports[273]

State	Year	State	Year
Alabama	1911	Nebraska	1892
Arizona	1913	Nevada	1908
Arkansas	1914	New Hampshire	1844
California	1879	New Jersey	1853
Colorado	1907	New Mexico	1915
Connecticut	1847	New York	1851
Delaware	1919	North Carolina	1901
Florida	*	North Dakota	1890
Georgia	1920	Ohio	1908
Idaho	1905	Oklahoma	1898
Illinois	1897	Oregon	1908
Indiana	*	Pennsylvania	1827
Iowa	*	Rhode Island	1858
Kansas	1892	South Carolina	1906
Kentucky	1913	South Dakota	1894
Louisiana	1900	Tennessee	*
Maine	1856	Texas	1906
Maryland	1911	Utah	1913
Massachusetts	1850	Vermont	1874
Michigan	1889	Virginia	1908
Minnesota	1910	Washington	1907
Mississippi	1909	West Virginia	1901
Missouri	1897	Wisconsin	1895
Montana	1894	Wyoming	*

* No banking data published periodically or separately through 1914.

[273] Kris James Mitchener & Matthew Jaremski, *The Evolution of Bank Supervisory Institutions: Evidence from American States*, 75 J. ECON. HIST. 819, 855–56 (2015).

The way in which the clearinghouses managed information can be seen by examining chronologies of the four largest panics during the National Banking Era—the Panics of 1873, 1890, 1893, and 1907. This is demonstrated in Tables A4 and A5 below. In Table A4, going chronologically left to right, we demonstrate what the clearinghouses did during each of the four episodes of panic.[274] The first five columns correspond to actions taken during the start of a panic. Following the start of the panic (Column 1), Column 2 lists the last date on which the clearinghouse had member banks publish bank-specific information. Thereafter, information is suppressed. Column 3 shows the date when clearinghouse loan certificates were first issued. Column 4 shows the date that convertibility was suspended.[275] Column 5 shows the date on which the currency premium on certified checks first became positive.[276] What all four panics have in common is the suppression of bank-specific information and the issuance of loan certificates. The date that clearinghouses resumed publishing their members' bank-specific information is in Column 9. Notably, the publication of bank-specific information takes place one or two months after the date of resumption. The final cancellation date of the loan certificates is in Column 10.

[274] The table and discussion focus on the New York Clearinghouse Association, essentially the national economy.

[275] "Suspension" of convertibility means that the banks would not pay out cash to depositors.

[276] The "currency premium" refers to the amount of loan certificates that would have to be paid for a dollar of cash.

Table A4: Event Dates for National Banking Era Panics in Philadelphia[277]

		The Start of the Panic				The End of the Panic				
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Panic of:	**Panic Start Date**	**Date CH Stopped Publishing Bank-Specific Information**	**Date of First CH Loan Certificates**	**Date of Suspension of Convertibility**	**First Date at Which Currency Premium Is Positive**	**Date at Which Currency Premium Is Zero**	**Date of Resumption of Convertibility**	**Date of Last CH Loan Certificate Issued**	**Date that Individual Bank Info Starts Being Published Again**	**Date of Final Cancellation of Loan Certificates**
1873	Sep. 18, 1873	Sep. 30, 1873	Sep. 24, 1873	Sep. 21, 1873	Sep. 25, 1873	Oct. 24, 1873	Nov. 17, 1873		Dec. 1, 1873	
1890	Nov. 11, 1890	Nov. 18, 1890	Nov. 19, 1890	No Suspension	NA	NA	No suspension		Feb. 16, 1891	May 22, 1891
1893	June 4, 1893	June 20, 1893	June 16, 1893	Aug. 7, 1893	Aug. 9, 1893	Sep. 5, 1893	Sep. 5, 1893	Nov. 20, 1893	Nov. 20, 1893	Dec. 9, 1894
1907	Oct. 21, 1907	Nov. 5, 1907	Oct. 28, 1907	Oct. 28, 1907	Nov. 4, 1907	Jan. 7, 1908	Jan. 7, 1908	Feb. 8, 1908	Feb. 10, 1908	Feb. 10, 1908

[277] GORTON & TALLMAN, *supra* note 125, at 108.

Managing the information environment during a crisis meant not only *suppressing* bank-specific information but also *producing* some bank-specific information of a different sort. The bank-specific information that was produced came from special examinations of a few banks during the suspension period. The examination reports were never released, but the banks were certified as solvent.[278] Table A5 shows the specifics of these special examinations. Notably, not all the banks that the clearinghouse examined were member banks. To manage fighting the crisis, the clearinghouse took it on itself examine non-member banks as well.

Thus, the clearinghouse undertook the job of managing the information environment, suppressing the normal publication of balance sheet information in newspapers, revealing the aggregate balance sheet of the member banks during the crisis, and making special examinations of apparently troubled banks, some of which failed.

Table A5: Member Bank Examinations by the New York Clearing House Association During Panics[279]

Panic	Date of Exam	CH Member?	Some Details
Panic of 1873			
National Bank of Commonwealth	Oct. 8, 1873	Yes	CH examination carried out at the request of the bank's president who deems receiver's report to be incorrect. NYT, Sep. 20, 22, 23, 24, 1987; NYT Oct. 7, 13, 1873.
Three state banks	Oct. 1, 1873	No	CH Minutes, March 11, 1854-Dec. 10, 1894, Vol. 1.1, no pagination.
Panic of 1884			
Metropolitan National Bank	May 14, 1884	Yes	CH Investigating committee examines bank; issues notice that based on the examination CH will lend the bank money. Bank reopens on May 15.
Panic of 1890			
North River Bank	Nov. 13, 1890	Yes	North River Bank was forced to close by state bank examiners on Nov. 12, 1890. The suspension was not expected, so the CH committee went to the bank to investigate. They were "exceedingly doubtful" that the bank would ever open again. NYT. 11/14/90, p. 5.
Bank of North America	Nov. 14, 1890	Yes	CH committee examines the Bank of North America filed a brief report, certifying that "its capital is intact, it has a large surplus, and its means are ample to meet all its obligations". NYT, 11/15/90, p. 8.
Mechanics & Traders' Bank	Nov. 15, 1890	Yes	CH committee examined Mechanics & Traders Bank, certifying that "its capital is intact. The bank has a considerable surplus and is fully able to meet all its obligations." NYT, 11/16/90, p. 2.
Panic of 1893			
Madison Square Bank	August 9, 1873	No	Madison Bank takes its books to the Clearing House in an attempt to prove its soundness. NYT,

[278] GORTON & TALLMAN, *supra* note 125, at 87.

[279] *Id.* at 63.

			p. 5. CH Committee visits bank to examine but makes no statement about results. Unofficial statement by an officer present says there is a deficiency. NYT, p.5.
National Bank of Deposit	May 22, 1893	No	CH member Seaboard National Bank refuses to act as CH agent for National Bank of Deposit. CH Committee examines National and recommends bank go into liquidation (NYT, May 23, 1893, p. 1).
Panic of 1907			
Mercantile National Bank	Oct. 17, 1907	Yes	CH exams bank issues statement saying "the examination results show the bank to be perfectly solvent and be able to meet all its indebtedness" (NYT, Oct. 18, 1907, p. 1).
New Amsterdam National Bank	Oct. 20, 1907	Yes	CH Committee examines bank finds them solvent and agrees to make emergency loan. NYT, Oct. 21, 1907, p. 1.
National Bank of North America	Oct. 20, 1907	Yes	CH Committee examines bank finds them solvent and agrees to make emergency loan. NYT, Oct. 21, 1907, p. 1.