STOPPING RUNS IN THE DIGITAL ERA

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Bank runs, and the financial crises they catalyze and amplify, are incredibly costly—to individuals, families, society, and the economy writ large. Banking regulation has, for the most part, protected us from traditional bank runs for the last ninety years. However, as we saw in the devastating 2008 financial crisis, bank runs can still occur in lightly regulated or opaque segments of the financial sector.

The recent crypto market downturn dramatically forewarned regulators of the potential and significant risks that novel assets could pose to our financial system's stability. In particular, a novel, systemically important asset (stablecoins) revealed its vulnerability to bank run dynamics, demonstrating that a future run on this relatively unregulated, yet now widely-held, asset could trigger or amplify another Great Recession-type event. Yet the government's macroeconomic policy toolkit (which includes successful traditional tools like deposit insurance and emergency lending) is not equipped to respond to quick bank runs on these novel assets, and new regulatory or statutory "fixes" are unlikely.

With these vulnerabilities in mind, this Article advances a novel policy alternative: the Cooperative Enforcement Doctrine. The Doctrine revives a forgotten approach to bank runs—namely, suspending the convertibility of deposit contracts—and posits that courts should act as emergency enforcers of macroeconomic cooperation through the temporary and selective non-enforcement of debt contracts in times of financial stress. By doing so, courts could effectively halt bank runs, especially in situations where other regulatory responses are not viable or implementable, such as a run on stablecoins. Furthermore, unlike new policy "fixes," the Doctrine would not need any congressional or agency implementation—the contractual doctrine of public policy is available to serve as a solid buttress for its application.

INTRODUCTION

Bank runs sound like a problem of yore.[1] Traditional bank runs, where

1. Or at least they sounded like a problem of yore until about the date of this Article's publication. Given their still-developing nature at the time of its publication, this Article does not attempt to analyze or reflect upon a recent spate of bank runs affecting at least a couple of regional U.S. banks in March 2023. *See* Vivian Giang, *Banking Turmoil: What We Know*, N.Y. TIMES (Mar. 15, 2023), https://www.nytimes.com/article/svb-silicon-valley-bank-explainer.html [https://perma.cc/FXP9-B75B]. Suffice it to say, however, that these runs are further evidence of (i) our financial system's vulnerability to runs, even on institutions covered by deposit insurance; (ii) how the collapse of even a single regional bank can risk setting a chain reaction with system-wide repercussions; and (iii) the relative inadequacy of

depositors frantically hurried to withdraw their deposits in expectation of a bank failure, frequently catalyzed and amplified financial crises, with devastating effects to individuals, the financial system, and society.[2]

Bank runs sound like a problem of yore because regulation has been largely successful in mitigating the risk of traditional bank runs in our financial system. For example, U.S. banking regulation in the 1930's—especially the passage of federal deposit insurance—was highly effective in preventing traditional runs from happening in the first place.[3] The existence of other more reactive measures, such as the Federal Reserve's lender-of-last-resort capability, has largely prevented traditional bank runs from fueling larger crises,[4] and has spared us of the significant costs that these crises impose.

But bank runs are not a problem of yore. Tried-and-true preventative and response policies, such as federal deposit insurance and lender-of-last-resort measures, are not always effective in protecting rapidly evolving and relatively unregulated parts of the financial sector from bank run dynamics.[5] As the Great Recession evidenced, modern financial crises might be sparked by particular triggers (e.g., deterioration of household balance sheets), yet they are often fueled and amplified by bank run dynamics on obscure or lightly regulated sectors of the economy (e.g., the shadow banking sector),

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our current regulatory framework and response toolkit. As such, recent events highlight the importance and urgence of this project and related inquiries.

2. *See* MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES, 1867-1960, at 351–53 (2008) (blaming the Great Contraction on the monetary supply effects of the bank failures that resulted from runs in the early 1930's). Section I.A provides a more thorough overview of the costs of a bank-run-fueled financial crisis, using the Great Recession as an illustration. "Traditional" bank runs, however, have not been eradicated from the globe—they remain a significant threat to some emerging (and developed) countries. Banking crises, however, are a feature of every economy. *See* CARMEN M. REINHART & KENNETH S. ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY 147–53, 203–06 (2009).

3. *See infra* note 212 and accompanying text; FRIEDMAN & SCHWARTZ, *supra* note 2, at 12.

4. *See* Douglas W. Diamond & Phillip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401 (1983) (modeling bank runs and concluding that deposit insurance and lender-of-last-resort measures are effective in disincentivizing bank runs). *But see infra* note 138 (discussing the inefficacy of lender-of-last-resort measures during the Great Recession, attributing it to timing delays and limited uptake due to reputational concerns).

5. Avoiding banking crises has "proven elusive" even for developed countries with more established regulatory regimes; by some measures, they face more crises than emerging countries. *See* REINHART & ROGOFF, *supra* note 2, at 153–55.

escalating a relatively small weakness into a full-blown systemic crisis.[6] That is how Ben Bernanke, former Federal Reserve Chairman, concludes that bank runs have a "central role" in financial crises, even when they are sparked by other particular weaknesses in the economy.[7]

Recent events remind us that bank runs are not merely of hypothetical or historical interest. Although today there might not be crowds rushing to a bank to withdraw their deposits, trillions of dollars were lost in early 2022 when general market turmoil extended into panic selling within the crypto economy, leading to the stunning collapse of coins Terra and Luna, the decentralized finance (De-Fi) giant Celsius, and the preeminent crypto hedge fund Three Arrows Capital. Later in the year, panic destabilized the crypto giant FTX, bringing down with it several other firms in the space. These "crypto runs" underscore how relatively unregulated and unstable digital assets were indeed vulnerable to runs and could in the near future potentially pose a critical and significant systemic threat to the broader financial architecture.[8]

More specifically, top financial regulators around the world identified stablecoins—a type of "fixed value" digital currency widely used in the digital economy and typically facilitated by a central issuer—as the system's new Achilles' heel, given stablecoin issuers' susceptibility to bank runs and stablecoins' central facilitative role in the larger crypto economy. But despite increased attention from governments, there are currently no effective regulatory frameworks to lessen the risks of, or response mechanisms that could adequately stop, a bank run on these relatively novel financial

6. Summarizing his thoughts on the Great Recession after conducting extensive empirical analyses, Ben Bernanke stated that, "[a]lthough the deterioration of household balance sheets and the associated deleveraging likely contributed to the initial economic downturn and the slowness of the recovery, I find that the unusual severity of the Great Recession was due primarily to the panic in funding and securitization markets, which disrupted the supply of credit." Ben S. Bernanke, *The Real Effects of Disrupted Credit: Evidence from the Global Financial Crisis*, BROOKINGS PAPERS ON ECON. ACTIVITY, Fall 2018, at 251, 251, https://www.brookings.edu/wp-content/uploads/2018/09/Bernanke_final-draft.pdf [https://perma.cc/F29P-B5AN]; *see also* Gary Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo*, 104 J. FIN. ECON. 425, 446–48 (finding that the mortgage-backed security weakness was not a systemic event, but rather finding that the run on the repo market was the systemic event that unleashed the crisis); Juan Ospina & Harald Uhlig, *Mortgage-Backed Securities and the Financial Crisis of 2008: A Post Mortem* (Nat'l Bureau of Econ. Rsch., Working Paper No. 24509, 2018), http://www.nber.org/papers/w24509 [https://perma.cc/E34U-X9MQ] (questioning the conventional wisdom, arguing that the economic data shows the downturn in mortgage-backed securities was not a significant factor in the financial crisis); *infra* Section I.B (summarizing the literature on the Great Recession).

7. *See* Bernanke, *supra* note 6, at 255.

8. *See infra* Section I.C.

instruments.[9] As such, the persistent threat of bank runs, as exemplified by the recent crypto run and stablecoins' vulnerability to future ones, and the gargantuan effects of financial crises stress policymakers' dire need for alternative measures that can more broadly respond to bank runs, especially ones that occur in relatively obscure parts of the financial sector.

This Article aims to fill that policy void by advancing a new policy alternative to the persistent problem of bank runs and financial crises,[10] the Cooperative Enforcement Doctrine (the "Doctrine"). The Doctrine resuscitates a forgotten policy response: temporarily suspending the convertibility of some debt contracts in times of crisis. Drawing on the economic literature on bank runs and on the efficacy of the suspension of convertibility of contracts,[11] this Article argues that courts should temporarily refuse to enforce certain debt contracts that would fuel a bank run during a crisis. By doing so, Courts could effectively stop a panic from potentially unleashing or amplifying another Great Recession—and do so with considerable flexibility, speed, and tailored implementation.[12]

The Doctrine is not a quixotic policy invention requiring seemingly unrealistic statutory enactment; rather, it is anchored in—and readily available through—the longstanding contractual doctrine of public policy.[13] The doctrine of public policy, which allows courts to refuse enforcement of contracts when their enforcement would be against the public policy, provides solid grounds for the suspension of convertibility of certain debt contracts during a run. This Article argues that a proper understanding of the public policy doctrine not only allows, but in fact might require, judges to refuse to enforce these "bank run" contracts.

The Doctrine is a much-needed complement to our existing policymaking toolkit. It would provide policymakers with a response to bank

9. *See infra* Section I.C.4.

10. Prominent economic historians have gone so far as to deem financial crises "perennial" and possessing "biological regularity." ROBERT Z. ALIBER & CHARLES P. KINDLEBERGER, MANIAS, PANICS AND CRASHES, at vii, 20 (7th ed. 2015).

11. Even economists who disagree on how to theorize a bank run agree on the efficacy and relative efficiency of suspending convertibility to prevent bank runs. *See* Diamond, *supra* note 4, at 405–11 (modeling bank runs as a panic caused by prisoner's dilemma-type incentives and arguing that suspending convertibility of deposits should be an efficient solution to bank runs by reducing the panic incentives to run); Gary Gorton, *Bank Suspension of Convertibility*, 15 J. MON. ECON. 177 (1985) (modeling bank runs as caused by information asymmetries and arguing that suspending convertibility of deposits should be an efficient solution to bank runs by providing information to incompletely informed depositors about the bank's solvency).

12. *See infra* Part IV.

13. *See infra* Sections III.B–C.

runs that: (i) has a flexible and wide scope of applicability, thus covering the vulnerable novel or obscure instruments that might fall through the cracks of existing regulation, such as stablecoins and their future progeny;[14] (ii) can be implemented speedily, free and clear of political or administrative roadblocks;[15] and (iii) can be tailored to different needs given the nature of judicial action, avoiding common problems of under- or over-breadth.[16] Moreover, the Doctrine can act as a catalyst and an experiment in integrating courts as new actors in macroeconomic policymaking, given their current relative lack of involvement in these decisions despite possessing institutional advantages over traditional actors.

This Article makes three main contributions to the literature. First and most importantly, it advances a proven, effective, legally solid, easily implementable, and readily available policy that in some situations could be policymakers' only hope in stopping a financial crisis like the Great Recession. Second, this Article's discussion of bank runs and the Doctrine fills a lacuna in the banking literature, which is often (i) centered around prophylactic measures and "price approaches" to crisis triggers, ignoring the importance of broad policies that can flexibly address systemic vulnerabilities;[17] (ii) unduly obsessed with the Executive and Congress as the only actors capable of responding to a crisis;[18] and (iii) devoted to

14. *See infra* Section IV.A.

15. *See infra* Section IV.B.

16. *See infra* Section IV.C.

17. Ben Bernanke, Chairman, Fed. Rsrv. Bd., Address at the Russell Sage Foundation and The Century Foundation Conference on "Rethinking Finance:" Some Reflections on the Crisis and the Policy Response (Apr. 13, 2012), https://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm [https://perma.cc/2SEY-45FX] (stressing the importance of analyzing the financial system's vulnerabilities—not particular triggers—in preventing another crisis); YAIR LISTOKIN, LAW AND MACROECONOMICS 6–7 (2019) (arguing that "[i]n light of this history [of failed prophylactic banking regulation of financial crises], law must offer responses once crises have struck in addition to trying to prevent crises through prophylactic regulation"); GARY GORTON, MISUNDERSTANDING FINANCIAL CRISES: WHY WE DON'T SEE THEM COMING, at viii–xii, 87–97 (2012) (discussing economists' intellectual failures in preventing the crisis).

18. *See, e.g.*, Eric A. Posner & Adrian Vermeule, *Crisis Governance in the Administrative State: 9/11 and the Financial Meltdown of 2008*, 76 U. CHI. L. REV. 1613 (arguing that the Executive, not Congress, is—and should be—responsible for responding to crisis but ignoring the role that courts do or could play in that response). Even the literature that has explicitly sought to analyze institutional choice from a *comprehensive* comparative perspective has failed to take the courts seriously, merely noting that the courts are oft-forgotten and treating them as actors limited to responding to the Executive's responses to a crisis. *See* David A. Skeel, Jr., *Institutional Choice in an Economic Crisis*, WIS. L. REV. 629,

banking law as the exclusive method for responding to an escalating financial crisis, sidelining other areas of the law—in this case, contract law—that can also generate useful, alternative responses to crises.[19] Lastly, it provides a much-needed descriptive account of the recent crypto run, contextualizing what happened in the larger historical context of bank runs, and examining the lack of good policy responses available to address a potential run on similar instruments in the future.

The discussion will proceed in four Parts. Part I will describe the crisis leading to the Great Recession, examine the relationships between financial crises and bank runs, and illustrate the economy's current vulnerabilities (and our current limited range of policy tools) through the recent crypto run. Part II employs a game theoretical framework of bank runs to explain the coordination issues at play in financial crises and how the Cooperative Enforcement Doctrine is an ideal complementary mechanism to guide depositors in a bank run towards halting the run in optimal cooperation. Part III refines the Doctrine and anchors it legally in the public policy doctrine. Part IV contextualizes the Doctrine by placing it into our current regulatory framework and stresses three unique comparative advantages that it provides over traditional responses to bank runs: (i) flexibility and scope, (ii) speed, and (iii) implementability and fit.

I. FINANCIAL CRISES, THE INADEQUACY OF CURRENT POLICY TOOLS, AND CRYPTO-VULNERABILITIES

A. The Great Recession and the Cost of Financial Crises

The 2008 economic crisis, also known as the "Great Recession," had enormous and devastating economic effects. Conservative analyses estimate the output loss in the range from six to fourteen *trillion* dollars, which would

644–46 (2013). Ignoring the courts is surprising, given the well-developed literature on comparative institutional analysis spearheaded by Neil Komesar. *See, e.g.*, NEIL K. KOMESAR, IMPERFECT ALTERNATIVES (1994); NEIL K. KOMESAR, LAW'S LIMITS (2001). *But see* LISTOKIN, *supra* note 17, at 20 (discussing judicial decisions and courts as macroeconomic actors).

19. *Compare* LISTOKIN, *supra* note 17, at 6–7 (arguing that, "[i]n light of this history [of failed prophylactic banking regulation of financial crises], law must offer responses once crises have struck in addition to trying to prevent crises through prophylactic regulation"), *with* Gabriel Rauterberg & Joshua Younger, *What is the Law's Role in a Recession?*, 135 HARV. L. REV. 1351, 1372 (2022) (approvingly reviewing LISTOKIN, *supra* note 17, yet rehearsing the traditional narrative where banking law remains the almost-exclusive tool for regulators to respond to a crisis).

constitute a loss ranging from 40% to 90% of a year of the U.S. GDP.[20] In other words, the average American household lost anywhere from $50,000 to $120,000.[21] The national unemployment rate rose from 5% in December 2007 to 9.5% in June 2009, with some state unemployment rates as high as 15%.[22] Perhaps more worrisome is that some economists think that the recession's effects are not over—before the COVID-19 pandemic, advanced economies continued to experience very slow economic growth, at least partly because of the recession's long-lasting economic effects.[23]

The effects of the recession were not only monetary. Suicide rates in the United States increased by 4.8%.[24] In addition, a study found that "the macro- and individual-level sequelae of the Great Recession were associated with declining fertility and self-rated health and increasing morbidity, psychological distress, and suicide."[25] Not only were measures of individual wellbeing affected by the crisis, trust in social institutions—such as banks, business, and government—plummeted (and has continued declining) since that time.[26] Financial crises increase political radicalism, instability, polarization, and upheavals.[27] The social costs of a recession are thus *undeniably* high.

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20. David Luttrell, Tyler Atkinson & Harvey Rosenblum, *Assessing the Costs and Consequences of the 2007-09 Financial Crisis and Its Aftermath*, ECON. LETTER (Fed. Rsrv. Bank of Dallas, Dallas, Tex.), Sept. 2013, at 1–2, https://fraser.stlouisfed.org/files/docs/publications/frbdal_el/frbdal_el_201307.pdf [https://perma.cc/RBP7-MUK3].

21. *Id.* at 1.

22. U.S. BUREAU OF LAB. STAT., BLS SPOTLIGHT ON STATISTICS: THE RECESSION OF 2007-2009, at 2, 5 (2012), https://www.bls.gov/spotlight/2012/recession/pdf/recession_bls_spotlight.pdf [https://perma.cc/H49K-GPMT].

23. INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT: GETTING THE POLICY MIX RIGHT, at xi, 50 (2017), https://www.imf.org/-/media/Files/Publications/GFSR/2017/April/chapter-1/text.ashx.

24. Aaron Reeves, Martin McKee & David Stuckler, *Economic Suicides in the Great Recession in Europe and North America*, 205 BRIT. J. PSYCH. 246, 246 (2014), https://doi.org/10.1192/bjp.bp.114.144766.

25. Claire Margerison-Zilko et al., *Health Impacts of the Great Recession: a Critical Review*, 3 CURRENT EPIDEMIOLOGY REPS. 81, 88 (2016). *But see* Sarah A. Burgard & Lucie Kalousova, *Effects of the Great Recession: Health and Well-Being*, 41 ANN. REV. SOCIO. 181 (2015) (analyzing the divergence of macro-level and individual-level health data during recessions).

26. *See* Betsey Stevenson & Justin Wolfers, *Trust in Public Institutions over the Business Cycle* (Nat'l Bureau of Econ. Rsch., Working Paper No. 16891, 2011) http://www.nber.org/papers/w16891.pdf [https://perma.cc/6N95-JHDS] (documenting the decline of trust in U.S. social institutions).

27. Manuel Funke, Moritz Schularick & Christoph Trebesch, *Going to Extremes: Politics after Financial Crises, 1870–2014*, 88 EUR. ECON. REV. 227, 232–43 (2016).

B. Bank Runs and Financial Crises

Financial crises happen frequently,[28] quickly,[29] and are hard to forecast.[30] While preemptive measures can reduce their occurrence and mitigate their impact, history suggests that we cannot completely prevent them, as the financial system continually adapts and evolves.[31] Nonetheless, *response* mechanisms—especially fast response or "emergency" mechanisms of wide applicability—are of vital importance in protecting society from the effects of financial crises when they inevitably happen.[32]

Although there is a consensus among commentators about the severity of the Great Recession, commentary regarding the 2008 financial crisis' causes is still contentious, fifteen years after it began. Academics and financial commentators have blamed the recession on a plethora of factors: alleged mismanagement of the currency by the Federal Reserve Board and the Treasury Department,[33] "irrational exuberance,"[34] an underlying weak economy affected by the displacement of jobs from the manufacturing

28. *See* ALIBER & KINDLEBERGER, *supra* note 10, at 20.

29. *See infra* notes 270–272.

30. GORTON, *supra* note 17, at viii–x, 87–97.

31. *Id.*; *see also* Ben Bernanke, Chairman, Fed. Rsrv. Bd., The Crisis as a Classic Financial Panic, Speech at the Fourteenth Jacques Polak Annual Research Conference, Washington, D.C. (Nov. 8, 2013) (comparing the 2008 crisis to the 1907 crisis and arguing that both stemmed from the vulnerability of evolving parts of the banking sector to bank runs); LISTOKIN, *supra* note 17; ALIBER & KINDLEBERGER, *supra* note 10, at 239 ("The paradox is that although banks have been regulated for more than three hundred years, the universal response to failure or near failure of banks is that more regulation or more effective regulation is needed. The problems of Bear Stearns, Lehman Brothers, and other US investment banks have been attributed to the decision of the US Securities and Exchange Commission to relax the restraints on the capital requirements or the leverage of the investment banks. At times the collapse of an investment bank has been attributed to the repeal of the Glass-Steagall Act—which conveniently neglects the failures of hundreds of financial firms in the 1980s and the failures of banks in Britain, Iceland, Ireland, and many other countries.").

32. ALIBER & KINDLEBERGER, *supra* note 10.

33. Brian Domitrovic, *The Weak Dollar Caused the Great Recession*, FORBES (Mar. 13, 2012, 3:50 PM) https://www.forbes.com/sites/briandomitrovic/2012/03/13/the-weak-dollar-caused-the-great-recession [https://perma.cc/FRM4-PG8D].

34. *See* Alan Greenspan, Chairman, Fed. Rsrv. Bd., The Challenge of Central Banking in a Democratic Society, Remarks at the Annual Dinner and Francis Boyer Lecture of The American Enterprise Institute for Public Policy Research, Washington, D.C. (Dec. 5, 1996), https://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm [https://perma.cc/ZJT8-VWXG] (coining the term); *see generally* Robert J. Schiller, Irrational Exuberance (3d ed. 2015) (attributing the 2008 financial crisis to "irrational exuberance").

sector,[35] unevenly accumulated household debt,[36] not enough government regulation,[37] too much government regulation,[38] and even Christianity.[39] Politicians are similarly in dissensus. They have blamed the recession on industry lobbying;[40] Fannie Mae, Freddie Mac, and "cronies and [Obama's] friends in Washington;"[41] "risky financial schemes;"[42] "the weakening of consumer protection laws in states;"[43] and "greed and recklessness on Wall Street."[44]

Some economists, however, question this myopic understanding of financial crises. Gary Gorton notes, "[a] common—if somewhat vague—view of crises is that they are caused by some combination of government policies, bad events, and greed."[45] But this view ignores that one "common

35. Joseph E. Stiglitz & Linda J. Bilmes, *The Book of Jobs*, VANITY FAIR (Dec. 6, 2011) http://www.vanityfair.com/news/2012/01/stiglitz-depression-201201 [https://perma.cc/Z5RF-VM8Z].

36. *See generally* ATIF MIAN & AMIR SUFI, HOUSE OF DEBT: HOW THEY (AND YOU) CAUSED THE GREAT RECESSION, AND HOW WE CAN PREVENT IT FROM HAPPENING AGAIN (2014).

37. Cyrus Sanati, *10 Years Later, Looking at Repeal of Glass-Steagall,* N.Y. TIMES: DEALBOOK (Nov. 12, 2009, 3:49 PM), https://dealbook.nytimes.com/2009/11/12/10-years-later-looking-at-repeal-of-glass-steagall/ [https://perma.cc/W2PJ-7YCF].

38. Peter J. Wallison, *Hidden in Plain Sight: What Really Caused the World's Worst Financial Crisis—and Why It Could Happen Again*, AM. ENTER. INST. (Jan. 8, 2015) https://www.aei.org/publication/hidden-plain-sight-really-caused-worlds-worst-financial-crisis-happen-2/ [https://perma.cc/G289-QCYG].

39. Hanna Rosin, *Did Christianity Cause the Crash?*, THE ATLANTIC (Dec. 2009) https://www.theatlantic.com/magazine/archive/2009/12/did-christianity-cause-the-crash/307764/ [https://perma.cc/MU78-BH4Z].

40. *Obama Casts Wide Blame for Financial Crisis*, N.Y. TIMES: DEALBOOK (Mar. 28, 2008, 8:01 AM) https://dealbook.nytimes.com/2008/03/28/obama-casts-wide-blame-for-financial-crisis/ [https://perma.cc/S3US-UNTF] ("Obama laid much of the blame for the crisis on lobbyists and politicians who dismantled the regulatory framework governing the energy, telecommunications and financial services sectors.").

41. Robert Farley & Angie Drobnic Holan, *What Caused Crisis? No One Thing*, POLITIFACT (Nov. 30, 2008) http://www.politifact.com/truth-o-meter/article/2008/nov/30/what-caused-crisis-no-one-thing/ [https://perma.cc/G4VU-L7CY].

42. *Text of Bernie Sanders' Wall Street and Economy Speech*, MARKETWATCH (Jan. 5, 2016, 3:22 PM), http://www.marketwatch.com/story/text-of-bernie-sanders-wall-street-and-economy-speech-2016-01-05 [https://perma.cc/HV9X-T5K3].

43. *Id.*

44. Jason Easley, *Bernie Sanders Blasts the GOP with Reality: It Wasn't Immigrants Who Caused the Great Recession*, POLITICUSUSA (Sept. 3, 2015) http://www.politicususa.com/2015/09/03/bernie-sanders-blasts-gop-reality-immigrants-caused-great-recession.html [https://perma.cc/4NUM-MLNL].

45. GORTON, *supra* note 17, at 195.

feature of market economies" is their vulnerability to bank runs.[46] Echoing Gorton's point, Ben Bernanke—the former Federal Reserve Chairman and a key architect of the U.S. government's response to the crisis—noted that the quest for the crisis' "proximate causes" obscured the important task of addressing the system's "vulnerabilities."[47] A salient feature of the pre-crisis financial system was its dependence on the shadow banking system, which made the system vulnerable to runs, as short-term debt contracts exchanged there (e.g., repo contracts, money-market funds) were not insured and were not subject to appropriate regulation or oversight.[48]

This vulnerability unleashed and amplified the 2008 financial crisis. The "growing realization by market participants that subprime mortgages and certain other credits were seriously deficient in their underwriting and disclosures" triggered "sharp withdrawals of short-term funding" from financial institutions, mostly shadow banks, leading to "fire sales, which contributed to sharp declines in asset prices and further losses."[49] As such, the 2008 financial crisis "echoed many aspects of the 1907 panic,"[50] and evidenced dynamics that were historically common. Bernanke concludes, "[o]verall, the emergence of run-like phenomena in a variety of contexts helps explain the remarkably sharp and sudden intensification of the financial crisis, its rapid global spread, and the fact that standard market indicators largely failed to forecast the abrupt deterioration in financial conditions."[51] The national commission analyzing the 2008 financial crisis' findings were largely in line with Bernanke's account.[52]

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46. *Id.*; *see also* ALIBER & KINDLEBERGER, *supra* note 10, at 20 (emphasizing the cycle of manias and panics during financial crisis).

47. Ben S. Bernanke, Chairman, Fed. Rsrv. Bd., Some Reflections on the Crisis and the Policy Response, Speech at the Russell Sage Foundation and The Century Foundation Conference on "Rethinking Finance," New York, N.Y. (Apr. 13, 2012), https://www.federalreserve.gov/newsevents/speech/bernanke20120413a.htm [https://perma.cc/UYT4-ZKRK].

48. *Id.*; *see also* Edward Simpson Prescott, *Introduction to the Special Issue on the Diamond-Dybvig Model*, 96 FED. RSRV. BANK RICHMOND ECON. Q. 1, 2–6 (2010) (listing several markets that experienced bank-run dynamics leading to the Great Recession); Gorton & Metrick, *supra* note 6.

49. Ben S. Bernanke, Chairman, Fed. Rsrv. Bd., The Crisis as a Classic Financial Panic, Speech at the Fourteenth Jacques Polak Annual Research Conference, Washington, D.C. (Nov. 8, 2013) https://www.federalreserve.gov/newsevents/speech/bernanke20131108a.htm [https://perma.cc/YGN4-K3DB].

50. *Id.*

51. *Id.*

52. FIN. CRISIS INQUIRY COMM., THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES 386 (2011), https://www.govinfo.gov/content/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf [https://perma.cc/8Z2Y-5Y5X].

Thus, bank runs are not a thing of yore. Their historical and practical relevance is also not limited to the Great Recession—by some estimates, up to 62% of financial crises around the world since 1970 were either unleashed or amplified by bank-run dynamics.[53] As a result, understanding bank runs and financial panics is essential to prevent and contain financial crises,[54] and is "just as relevant today as it was historically."[55]

C. Current Financial System—Limited Policy Responses and Crypto-Vulnerabilities

Although financial conditions since the Great Recession (and the brief 2020 recession) have significantly improved,[56] as of the time of this Article's publication, the global economy currently continues to face risks "large and to the downside,"[57] including, for example, supply chain and energy issues,[58] pandemic-related disruptions,[59] instability caused by the Russian invasion of Ukraine,[60] and, most recently, contractionary fiscal policies aimed at taming

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53. Bank runs were not only the cause of the Great Recession and of financial crises before the creation of the Federal Reserve and the FDIC—"in financial crises around the world since 1970, most (62%) involved bank runs and sharp reductions in demand deposits in the banking system." GORTON, *supra* note 17, at 32.

54. *See* Bernanke, *supra* note 47.

55. Prescott, *supra* note 48, at 6.

56. *See, e.g.*, *Chart Book: Tracking the Post-Great Recession Economy*, CTR. ON BUDGET & POL'Y PRIORITIES (May 27, 2022), https://www.cbpp.org/research/economy/tracking-the-post-great-recession-economy [https://perma.cc/RKJ8-F832] (comparing the Great Recession and the 2020 recession and analyzing their aftermaths).

The 2020 recession was a sharp yet historically anomalous downturn, being the shortest recession in U.S. history. *Business Cycle Dating Committee Announcement July 19, 2021: Determination of the April 2020 Trough in US Economic Activity*, NAT'L BUREAU OF ECON. RSCH. (July 19, 2021), https://www.nber.org/news/business-cycle-dating-committee-announcement-july-19-2021 [https://perma.cc/PB37-2PTY].

57. INT'L MONETARY FUND, WORLD ECONOMIC OUTLOOK: WAR SETS BACK THE GLOBAL RECOVERY 17–18 (2022), https://www.imf.org/-/media/Files/Publications/WEO/2022/April/English/text.ashx.

58. *See* Philip R. Lane, Executive Board Member, Eur. Cent. Bank, Inflation Shocks and Monetary Policy, CEPR Paris Symposium 6 (June 1, 2022), https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220601_2~9b74bccd0a.en.pdf [https://perma.cc/RSW4-D7BT] (listing the main inflation drivers as (i) the pandemic and pandemic-related measures like lockdowns, (ii) energy shocks, and (iii) the Russian-Ukraine war).

59. *Id.*

60. *See, e.g.*, Chris Anstey, *IMF to Cut Growth Forecast as Recession Looms for Some Nations*, BLOOMBERG (Mar. 22, 2022, 12:56 PM), https://www.bloomberg.com/news/articles/2022-03-22/imf-to-cut-growth-forecast-as-some-weaker-nations-risk-recession [https://perm

inflation.[61] These risks have led (some) economists to predict a recession,[62] again underscoring their inevitability and our vulnerability to them.

But perhaps our financial system's most significant current vulnerability is its unpreparedness in regulating the development, evolution, and widespread adoption of digital assets. As an example, consider stablecoins, an increasingly popular type of cryptocurrency that poses a systemic risk for which there are currently no good regulatory responses.[63]

1. Welcome to the Crypto Era

Cryptography-enabled assets, such as cryptocurrencies, have rapidly grown in popularity and importance. Investors have been lured by the promise of an anonymous, decentralized, and "techy" alternative to fiat or official currency.[64] Just consider the growth of the first, and most well-known, cryptocurrency—Bitcoin.[65] In mid-2013, Bitcoin's whole market capitalization (i.e., the market value of all Bitcoin in the market) was roughly one billion dollars.[66] While one billion dollars might sound like a lot of

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a.cc/QX34-N6FL] (quoting Kristalina Georgieva, IMF Chief, to empathize the current risks faced by the global economy).

61. Jerome Powell, the current Federal Reserve Chairman, summarized the issue while testifying before the Senate Banking Committee: "We're not trying to provoke, and don't think that we will need to provoke, a recession. . . . But we do think it's absolutely essential that we restore price stability, really for the benefit of the labor market, as much as anything else." Jeanna Smialek, *Powell Says the Fed Is 'Not Trying to Provoke' a Recession, but It Is 'Certainly a Possibility,'* N.Y. TIMES (June 22, 2022) (quoting Jerome Powell), https://www.nytimes.com/2022/06/22/business/powell-fed-inflation-recession.html [https://perma.cc/R89A-SWG7].

62. Christopher Rugaber, *2023 US Recession Now Expected to Start Later Than Predicted*, ASSOCIATED PRESS (Feb. 27, 2023), https://apnews.com/article/inflation-united-states-government-recessions-and-depressions-economy-business-c14699b792454e4d2d3d642d65ff4395 [https://perma.cc/9HWE-ZH69] ("Fifty-eight percent of 48 economists who responded to a survey by the National Association for Business Economics envision a recession sometime this year . . . ."); Valentina Romei, Colby Smith & Martin Arnold, *Recession in US and Europe 'Increasingly Likely', Warn Economists*, FIN. TIMES (June 24, 2022), https://www.ft.com/content/736f82b8-932c-408a-bc14-1fadf2f14aa9 [https://perma.cc/Y3UK-VUA7].

63. *See infra* Sections I.C.3–4.

64. *See generally* ESWAR PRASAD, THE FUTURE OF MONEY: HOW THE DIGITAL REVOLUTION IS TRANSFORMING CURRENCIES AND FINANCE (2021) (providing an accessible and thorough introduction to these assets).

65. *Id.* at 106–49. (recounting the rise and stumbles of Bitcoin).

66. *See Bitcoin to USD Chart: Market Capitalization*, COINMARKETCAP, https://coinmarketcap.com/currencies/bitcoin/ (last visited Mar. 24, 2023) (estimating that on July 20, 2013, Bitcoin had a market capitalization of around $1 billion).

money for an individual, it is a tiny market capitalization for an enterprise—well-known, yet decidedly *not* systemically-important, startups like Beyond Meat or Oatly have similar market capitalizations.[67]

Yet Bitcoin's market capitalization has skyrocketed after being widely adopted as part of a new financial system, by both large institutional and retail investors.[68] In less than ten years, Bitcoin grew from an obscure cryptocurrency with a $1 billion market capitalization to a mainstream financial asset reaching a $1.2 *trillion* market capitalization in late 2021.[69] (As we will discuss, Bitcoin now has a more modest market capitalization of $480 billion, after experiencing a dramatic decline in value in 2022 and early 2023).[70]

Again, for reference, $1.2 trillion is more than the market capitalization of the largest four U.S. banks combined, any one of them "too big to fail": J.P Morgan Chase, Bank of America, Wells Fargo and Morgan Stanley.[71]

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67. BeyondMeat has a current market capitalization of more than $1.04 billion dollars. *Beyond Meat*, YAHOO FINANCE, https://finance.yahoo.com/quote/BYND/ (last visited Mar. 24, 2023). That is equivalent to a market capitalization of roughly $0.81 billion in 2013 dollars. *CPI Inflation Calculator*, BUREAU OF LAB. STAT., https://data.bls.gov/cgi-bin/cpicalc.pl (last visited Mar. 24, 2023) (comparing February 2023 to June 2013).

The Oatly Group AB (the company behind the popular oat milk) has a current market capitalization of around $1.47 billion dollars. *Oatly Group AB*, YAHOO FINANCE, https://finance.yahoo.com/quote/OTLY/ (last visited Mar. 24, 2023). That is equivalent to a market capitalization of roughly $1.14 billion in 2013 dollars. *CPI Inflation Calculator*, *supra*.

Although this back-of-the-envelope comparison does not consider the difference in valuation multiples attributable to the sector and stage in the financial cycle, it does provide a useful example of how insignificant Bitcoin was to the financial system at large in 2013.

68. A recent poll found that roughly one in six U.S. adults have invested in or used cryptocurrency. Andrew Perrin, *16% of Americans Say They Have Ever Invested In, Traded or Used Cryptocurrency*, PEW RSCH. CTR. (Nov. 11, 2021), https://www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/ [https://perma.cc/S7F4-63ER].

69. *See Bitcoin to USD Chart*, *supra* note 66 (estimating that Bitcoin had a market capitalization of around $1 billion in the fall of 2013, and $1.22 trillion on November 13, 2021). CoinMarketCap is the leading source for information on digital currencies, used by other financial platforms like Yahoo Finance. *See Bitcoin USD (BTC-USD)*, YAHOO FINANCE, https://finance.yahoo.com/quote/BTC-USD (last visited Mar. 24, 2023) (sourcing data from CoinMarketCap).

70. *See Bitcoin to USD Chart*, *supra* note 66.

71. The largest four U.S. banks would have a market capitalization of around $1.05 trillion, well below the $1.22 trillion mark. *See Companies by Market Capitalization*, https://companiesmarketcap.com (last visited Feb. 20, 2023) (calculating that J.P Morgan Chase has a market capitalization of around $417 billion; Bank of America of around $282 billion; Wells Fargo of around $182 billion; and Morgan Stanley of around $166 billion).

Further, $1.2 trillion is more than the market capitalization of Amazon[72]—the digital giant large enough to inspire "the new antitrust".[73]

Bitcoin is not the only cryptocurrency and is not the only cryptocurrency that has become popular. The entire cryptocurrency market has similarly experienced a meteoric rise, with a total market capitalization reaching almost $3 trillion in late 2021.[74] Yet, as with Bitcoin, that rise has not been steady.[75]

Despite their size and widespread adoption, Bitcoin and Ethereum—the two largest cryptocurrencies—are incredibly volatile assets,[76] and as such, they fare poorly as functional "currencies." Wild swings in price—sometimes erasing as much as 20% of its value in a matter of hours[77]—can make it hard to use these cryptocurrencies to pay for other assets, therefore making them an inconvenient form of payment.[78] Out of this need to find a

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Remember that all of these banks have been deemed "too big to fail." *See, e.g.*, NICOLA CETORELLI & JAMES TRAINA, FED. RSRV. BANK OF N.Y., STAFF REP. NO. 859, RESOLVING "TOO BIG TO FAIL" 15 (2018), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr859.pdf [https://perma.cc/6Z3R-LZAH].

72. *Amazon*, YAHOO FINANCE, https://finance.yahoo.com/quote/AMZN/ (last visited Mar. 24, 2023) (estimating a market capitalization of $1.006 trillion).

73. *See* Lina M. Khan, Note, *Amazon's Antitrust Paradox*, 126 YALE L.J. 564 (2017) (arguing for a new antitrust framework to address the anticompetitive concerns posed by online platforms).

74. *See Global Cryptocurrency Charts: Total Cryptocurrency Market Cap*, COINMARKETCAP, https://coinmarketcap.com/charts/ (last visited Mar. 24, 2023) (estimating a total market capitalization of $2.93 trillion on November 9, 2021).

75. For example, total cryptocurrency market capitalization dropped by about 50% in less than two months in 2021. *Id.* (estimating a $2.51 trillion market capitalization as of May 12, 2021, and a $1.25 trillion market capitalization as of June 26, 2021). A couple of months later, it recovered most losses, almost doubling in size in less than two months. *Id.* (estimating a $1.2 trillion market capitalization as of July 20, 2021, and a $2.35 trillion market capitalization as of September 7, 2021).

76. From 2017 through 2021, Bitcoin had on average eighteen days per year on which its price fluctuated more than *two* standard deviations from its mean. *See* Vildana Hajric & Katherine Greifeld, *Bitcoin Went Mainstream in 2021. It's Just as Volatile as Ever*, BLOOMBERG (Dec. 21, 2021, 5:30 AM), https://www.bloomberg.com/graphics/2021-bitcoin-volitility/ [https://perma.cc/LP9W-J8EP]. Bitcoin is much more volatile than other traditional currency substitutes such as gold, with an average intraday price change of 4.7%, compared to 1.6% for gold. *See Gold or Bitcoin? Store-of-Value Debate Rages as Bitcoin Grows*, BLOOMBERG INTEL. (Oct. 25, 2021), https://www.bloomberg.com/professional/blog/gold-or-bitcoin-store-of-value-debate-rages-as-bitcoin-grows/ [https://perma.cc/3RA9-B93B].

77. Hajric & Greifeld, *supra* note 76.

78. Other factors, e.g., slow transaction times and high fees, also make Bitcoin a less than ideal form of payment. *See* PRASAD, *supra* note 64, at 130–34.

convenient form of payment with a stable value rose "stablecoins."[79]

2. What is a Stablecoin?

A "stablecoin" is a type of digital currency that, unlike other types of cryptocurrencies such as Bitcoin or Ethereum, is designed to have a stable value relative to a reference currency, thus allowing holders to use it as a useful method of exchange and form of payment. Stablecoins allow people to trade in other cryptocurrencies (e.g., Bitcoin, Ethereum) seamlessly, without having to engage in the expensive and slow process of converting fiat currency into Bitcoin for every trade, forming a "bridge between old-world money and new-world crypto."[80]

Stablecoins employ different mechanisms to maintain their "stable" value,[81] but most maintain their value by pegging themselves to a specific fiat/official currency (e.g., the dollar[82]) or to a specific bundle of assets that society finds otherwise valuable (e.g., gold[83] or, confusingly, AriZona Iced Tea[84]). Stablecoins thus strive to achieve price stability by using the issuer's

79. *See id.* at 148; *see also What Are Tether Tokens and How Do They Work?*, TETHER, https://tether.to/en/how-it-works (last visited Mar. 24, 2023) (describing how Tether tokens offer price stability because they are pegged to currencies).

80. Jeanna Smialek, *Why Washington Worries About Stablecoins,* N.Y. TIMES (Sept. 23, 2021), https://www.nytimes.com/2021/09/17/business/economy/federal-reserve-virtual-currency-stablecoin.html [https://perma.cc/EPT8-F3BX]; *see also* Werner Vermaak, *What Is a Stablecoin?* COINMARKETCAP: ALEXANDRIA (Feb. 2023), https://coinmarketcap.com/alexandria/article/what-is-a-stablecoin [https://perma.cc/B7VH-AMUH].

81. A small portion of stablecoins are not collateralized, deriving their stability from "algorithmic" qualities. This approach has long been criticized as theoretically unstable and for being vulnerable to "death spirals." The recent death spiral of TerraUSD and its sister currency Luna confirmed the reality of these fears. For a brief account of the collapse of TerraUSD, see Matt Levine, *Terra Flops*, BLOOMBERG (May 11, 2021, 1:44 PM), https://www.bloomberg.com/opinion/articles/2022-05-11/terra-flops [https://perma.cc/T4P6-WJAH].

82. The most popular stablecoins are pegged to the dollar and collateralized with cash and other "safe" dollar-denominated assets. *See, e.g.*, *What Are Tether Tokens*, *supra* note 79 ("Tether tokens are referred to as stablecoins because they offer price stability as they are pegged to a fiat currency. This offers traders, merchants and funds a low volatility solution when exiting positions in the market. All Tether tokens are pegged at 1-to-1 with a matching fiat currency (e.g., 1 USD₮ = 1 USD) and are backed 100% by Tether's reserves.").

83. For example, Pax Gold and Tether Gold are backed by gold. *See Top Tokenized Gold Tokens by Market Capitalization*, COINMARKETCAP, https://coinmarketcap.com/view/tokenized-gold/ [https://perma.cc/89NL-JYWE] (last visited Mar. 24, 2023).

84. Arguing that Arizona Ice Tea is an asset with a stable value, some have created tokens that are "pegged" to ice tea. Amanda Silberling & Anita Ramaswamy, *What's More Stable*

reserves to acquire collateral that would maintain a stable value—ideally cash, but usually also Treasury bills, and even corporate bonds.[85] In that way, if, for example, a cryptocurrency claims to be pegged 1-to-1 to the U.S. dollar, the issuer should have enough dollar-denominated collateral to back that peg and honor any redemptions.[86]

3. Why are Stablecoins Systemically Dangerous?

Stablecoins are now a significant and rapidly-growing[87] financial asset

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than Bitcoin or UST? Arizona Iced Tea, TECHCRUNCH (May 18, 2022, 5:37 PM), https://techcrunch.com/2022/05/18/usdtea-more-stable-than-bitcoin-crypto-stablecoin-arizona-iced-tea/ [https://perma.cc/KE2W-T47P].

85. Unsurprisingly, given their unregulated nature, stablecoin minters have not maintained adequate reserves. Tether, the world's largest stablecoin, was found to have lied about its reserves, only having adequate reserves to back up tokens in circulation about a quarter of the time. *See* Press Release, Commodity Futures Trading Comm'n, Release No. 8450-21, CFTC Orders Tether and Bitfinex to Pay Fines Totaling $42.5 Million (Oct. 15, 2021), https://www.cftc.gov/PressRoom/PressReleases/8450-21 [https://perma.cc/J389-3EC8]. Apart from not having adequate reserves, the CFTC also found that Tether held its reserves in assets other than dollars, including "non-fiat financial products." *Id.*

Currently, Tether's own reports reveal that it holds barely more than 7% of its reserves in cash, with about half of its reserves in commercial paper, secured loans, "Corporate Bonds, Funds & Precious Metals," and "Other Investments," without much detail as to the underlying liquidity or credit quality behind these investments. *See Transparency: Reserves Breakdown*, TETHER (Dec. 31, 2022), https://tether.to/en/transparency/#reports [https://perma.cc/Y6LH-U67L] (listing "Cash & Bank Deposits" as 9.66% of its "Cash & Cash Equivalents & Other Short-Term Deposits & Commercial Paper," which itself composes 82.13% of Tether's total reserves); MHA CAYMAN, INDEPENDENT ACCOUNTANT'S REPORT TO THE BOARD OF DIRECTORS AND MANAGEMENT, TETHER HOLDINGS LIMITED 1–3 (May 18, 2022), https://tether.to/en/transparency/#reports [https://perma.cc/Y6LH-U67L] (click "see more" under the "Independent Accountant Report" heading) (failing to provide detailed information on, for example, the creditworthiness of the secured loans and bonds on Tether's reserves); *see also* Jemima Kelly, *Tether Says Its Reserves Are Backed by Cash to the Tune of . . . 2.9%*, FIN. TIMES (May 14, 2021), https://www.ft.com/content/529eb4e6-796a-4e81-8064-5967bbe3b4d9 [https://perma.cc/66E4-WEHK] (discussing Tether's unsatisfactory 2020 report on its reserves).

86. Given their structure, some compare stablecoins to bank deposits or money market funds. *See* PABLO D. AZAR ET AL., FED. RSRV. BANK OF N.Y., STAFF REP. NO. 1034, THE FINANCIAL STABILITY IMPLICATIONS OF DIGITAL ASSETS 23 (2022), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1034.pdf [https://perma.cc/MF52-FVR2].

87. The second largest stablecoin, USDT increased 370% in market capitalization in just a year. Jacquelyn Melinek, *Fidelity and Others to Invest $400M in USDC Stablecoin Issuer Circle*, TECHCRUNCH (Apr. 12, 2022, 10:16 AM), https://techcrunch.com/2022/04/12/blackrock-fidelity-and-others-to-invest-400m-in-usdc-stablecoin-issuer-circle/ [https://perma.cc/34VE-MWW3].

class, with a handful of key tokens constituting most of the market.[88] Consider their size: The top three stablecoins—Tether, USDCoin, and Binance USD—have historically had a combined market capitalization of approximately $120 billion.[89] Again, that is roughly equivalent to the market capitalization of "too big to fail" banks like Morgan Stanley or Wells Fargo.[90] As such, stablecoins seem to already possess the magnitude to potentially roil financial markets, as top EU and U.S. officials have acknowledged, and are likely to present an even larger threat in the near future.[91]

But their magnitude is not their most salient characteristic. Stablecoins are a cornerstone of the larger crypto economy, and as such, they are of central importance when assessing and reducing risks.[92] Although

88. Scale and network effects are probably behind the concentration of the market around a couple of tokens. *See* PRES.'S WORKING GRP. ON FIN. MKTS., FED. DEPOSIT INS. CORP. & OFFICE OF THE COMPTROLLER OF THE CURRENCY, REPORT ON STABLECOINS 14 (2021) [hereinafter PWG STABLECOIN REPORT], https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf [https://perma.cc/P6SW-XPM3] ("For individual stablecoins, the potential for rapid growth may reflect economies of scale and scope; network effects that cause demand for a specific stablecoin to increase as more firms and consumers use the stablecoin; and first-mover advantages.").

89. The *entire* market cap for all stablecoins is estimated at $133 billion as of Mar. 24, 2023. I use $130 billion as a reasonable estimate for the aggregate stablecoin market cap as of the time of this Article's publication, however, because their market cap has been highly volatile in the last year. *See Top Stablecoin Tokens by Market Capitalization*, COINMARKETCAP, https://coinmarketcap.com/view/stablecoin/ (last visited Mar. 24, 2023).

90. *See* discussion *supra* note 71.

91. *See* Janet L. Yellen, Secretary, Treasury Dep't, Remarks from Secretary of the Treasury Janet L. Yellen on Digital Assets (Apr. 7, 2022), https://home.treasury.gov/news/press-releases/jy0706 [https://perma.cc/C6JJ-MUE4] ("Digital assets have grown explosively, reaching a market cap of $3 trillion last November . . . . As banks and other traditional financial firms become more involved in digital asset markets, regulatory frameworks will need to appropriately reflect the risks of these new activities."); Fabio Panetta, Executive Board Member, Eur. Cent. Bank, For a Few Cryptos More: The Wild West of Crypto Finance, Speech at Columbia University (Apr. 25, 2022), https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220425~6436006db0.en.html [https://perma.cc/X3TM-SR5H] ("[T]he crypto market is now larger than the sub-prime mortgage market was when . . . it triggered the global financial crisis. And it shows strikingly similar dynamics."); AZAR ET AL., *supra* note 86, at 1 ("As the digital asset ecosystem grows, becomes more interconnected with the traditional financial system, and mimics products and structures of traditional finance, it creates new potential challenges to financial stability.").

92. FIN. STABILITY BD., ASSESSMENT OF RISKS TO FINANCIAL STABILITY FROM CRYPTO-ASSETS 11–14 (2022), https://www.fsb.org/wp-content/uploads/P160222.pdf [https://perma.cc/7DYD-KQJ2].

stablecoins might still compose less than 5% of the crypto economy[93] (depending on the market's daily whims, on aggregate comprising around $130 billion at the time of this writing), they are inextricably interconnected to the broader crypto market. They are an essential asset in the crypto market because of their high liquidity—a rarity among other crypto assets.[94] Relatedly, stablecoins have a central role as a facilitator of the larger crypto ecosystem, which crucially depends on them for efficient trading and price discovery.[95] Moreover, stablecoins are used as a financial indicator of the overall crypto economy's health.[96] As a result, chaos in the stablecoin market could roil the larger—and even more systemically important—crypto sector.[97]

In turn, a decline in the crypto market could easily spread to the broader economy,[98] just as the downturn in relatively obscure derivatives spread out

93. *See* Robert McCauley, *How Stablecoins Are Destabilising Crypto*, FIN. TIMES (May 12, 2022), https://www.ft.com/content/0a70d30b-9dec-4b33-aebc-75f7a0f11900 [https://perma.cc/3YED-AM8F] (noting that stablecoins' market capitalization was 3% of the crypto market and that, although "[t]he share has risen since," it "still is not large").

94. Daily trading activity for some stablecoins is considerably higher than for cryptocurrencies with much larger market capitalizations, such as Bitcoin or Ethereum. *See, e.g.*, *24 Hour Volume Rankings (Currency)*, COINMARKETCAP, https://coinmarketcap.com/currencies/volume/24-hour/ (last visited Mar. 24, 2023) (showing that Tether had a much higher daily trading volume than Bitcoin and Ethereum); *Historical Snapshot - 22 May 2022*, COINMARKETCAP (May 22, 2022), https://coinmarketcap.com/historical/20220522/ [https://perma.cc/Q4A5-PM52] (showing that Tether had a daily trading volume of almost $41 billion, $9 billion more than the daily trading volumes of Bitcoin and Ethereum combined); *Historical Snapshot - 15 May 2022*, COINMARKETCAP (May 15, 2022), https://coinmarketcap.com/historical/20220515/ [https://perma.cc/9SXH-7GM4] (same).

95. McCauley, *supra* note 93.

96. *See* Bryce Elder, *There Are 99 Problems and Tether Ain't $1*, FIN. TIMES (May 12, 2022), https://www.ft.com/content/7ced3098-84a3-4c22-85ec-ac323d6d70e0 [https://perma.cc/RZ4J-JBPL] ("[A]n ugly demise for the Terra stablecoin . . . has caused synchronised panic across the crypto space . . . ."); *see also supra* Section II.A (recounting the role of different financial instruments, such as CDOs and money-market funds, in amplifying the chaos started by mortgage backed securities, leading to the Great Recession).

97. *See* EUR. CENT. BANK, FINANCIAL STABILITY REVIEW, MAY 2022, at 45 (2022), https://www.ecb.europa.eu/pub/pdf/fsr/ecb.fsr202205~f207f46ea0.en.pdf [https://perma.cc/7DYD-KQJ2] ("A failure of Tether may pose a threat to the stability of crypto-asset markets, as it provides a substantial amount of trading liquidity for buying and selling of other crypto-assets. A run on Tether could disrupt trading and price discovery in crypto-asset markets, which could turn disorderly. Contagion effects for the broader financial system arising from a potential "crypto crash" still seem limited . . . , although individual investors may suffer significant losses."); Panetta, *supra* note 91 (explaining that "a loss in faith in the value of crypto-assets" could "spill over to broader financial markets").

98. *See* FIN. STABILITY BD., *supra* note 92 at 14. The economy's current weakness makes it more vulnerable to these dynamics. *See* discussion *supra* notes 56–63.

to the larger financial markets in 2008.[99] In particular, retail investors could be a large vector for a broad financial contagion fueled by a crypto collapse.[100] Large institutional investors such as financial institutions could also amplify the panic, as they are increasingly investing large sums in the crypto economy.[101] Moreover, as top regulators fear, further adoption and integration of digital assets into the rest of the economy in the near future will amplify old and create new contagion vectors, increasing the odds that a relatively targeted shock in the stablecoin market could destabilize the broader economy.[102]

4. Crypto Runs

Unlike Bitcoin or Ethereum, stablecoins are generally not "decentralized." Stablecoins' most important quality—their stability—*requires* a central issuer or authorized agent willing to validate and settle transactions, by upholding the cryptocurrency's peg or holding the necessary reserves.[103] (That is also practically the case even for "algorithmic" or seemingly decentralized stablecoins).[104]

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99. *See* discussion *infra* note 105.

100. *Id.*; *see also* Perrin, *supra* note 68 (finding that one in six Americans has interacted with crypto); Panetta, *supra* note 91 (stating that one in ten Europeans has invested in cryptocurrencies).

101. *See* Martin Arnold, *Crypto Links with Banks Pose Threat to Financial Stability, Says ECB*, FIN. TIMES (May 24, 2022), https://www.ft.com/content/5124fe2d-0f37-4173-89ba-fe9812e09e67 [https://perma.cc/KX7G-6A6H] (noting increasing institutional investment in cryptocurrencies).

102. *See* AZAR ET AL., *supra* note 86, at 25 ("At present, the potential spillovers from runs on stablecoins that are backed by money market instruments represent the most salient financial stability risk. Should the digital financial system become more interconnected with the traditional system or expand its provision of financial services, financial stability risks could quickly become material.").

103. *See* PRASAD, *supra* note 64, at 155 ("Stablecoins use cryptographic technology to provide some degree of user anonymity, but the validation and settlement of transactions are handled by the issuer of the currency or an authorized party.").

104. Algorithmic stablecoins are generally decentralized, or "on-chain," but most collateralized stablecoins are not. However, some "decentralized" algorithmic stablecoins require the support of a "foundation" (e.g., Terra and Luna with the Luna Foundation), which practically means that they are similarly subject to the same bank run dynamics as more straightforwardly centralized tokens like Tether. *See* Kyle Barr, *Luna Foundation Tried to Prop Up Terra's Crumbling Base with Billions in Bitcoin, but It Still Failed*, GIZMODO (May 16, 2022), https://gizmodo.com/luna-foundation-terra-bitcoin-crypto-lfg-1848933191 [https://perma.cc/6U59-F2AA]; IRIS H-Y CHIU, REGULATING THE CRYPTO ECONOMY: BUSINESS TRANSFORMATIONS AND FINANCIALISATION 278–81 (2021) (discussing how Dai, an "on-

Given stablecoins' need for an issuer or an authorized agent, stablecoin issuers are not functionally different from a bank in many respects, holding reserves for depositors in productive assets that might not be immediately liquidated. As a result of this feature, stablecoin issuers are vulnerable to runs just like regular banks.[105] Stablecoin issuers are similarly vulnerable to bank-run-fueled fire sales,[106] as they hold non-cash collateral that would need to be quickly liquidated in a run.[107]

These "crypto-vulnerabilities" have not gone unnoticed by regulators worldwide. In the last two years, top regulators across the world—including Treasury Secretary Janet Yellen—have repeatedly warned about the risks these assets pose to the financial system.[108] In fact, Federal Reserve researchers recently concluded that, while a run on stablecoins might not currently present an extensive risk given limited links between the traditional financial system and the digital asset ecosystem, a run on stablecoins was the "most salient financial stability risk" arising from the digital asset ecosystem

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chain" or decentralized cryptocurrency, is still under the control of a governance body that "designs its policies and engages in crisis management.").

105. Yellen, *supra* note 91 ("In times of stress, this uncertainty could lead to a run."); FINANCIAL STABILITY REVIEW, *supra* note 97, at 45 ("A run on Tether could disrupt trading and price discovery in crypto-asset markets, which could turn disorderly."); PWG STABLECOIN REPORT, *supra* note 88, at 14 ("If stablecoin issuers do not honor a request to redeem a stablecoin, or if users lose confidence in a stablecoin issuer's ability to honor such a request, runs on the arrangement could occur that may result in harm to users and the broader financial system."); Matt Levine, *Crypto Could Be Contagious*, BLOOMBERG (May 12, 2022, 1:55 PM), https://www.bloomberg.com/opinion/articles/2022-05-12/crypto-crash-contagion-could-go-beyond-bitcoin-ethereum-tether [https://perma.cc/YT6G-GGDS] ("In that model, a run on the Tether bank—that is, a run on the crypto bank, on the safe assets of the crypto world—would be bad in much the same way a run on a real bank would be bad, or the way a run on the 2008 shadow banking system was bad: It would cut back on credit to real businesses and be bad for the economy.").

106. *See* Panetta, *supra* note 91 ("In a stress situation, a sudden surge in redemptions by stablecoin holders could lead to instability in various market segments. For example, Tether, one of the most popular stablecoins, promises 'stability' by investing in low-risk assets, such as commercial paper, and holds a large proportion of the stock of these instruments in circulation. Large-scale sales of these assets in response to a sudden increase in redemptions could generate instability throughout the commercial paper market. This phenomenon could spread to other stablecoins and related sectors, eventually finding its way to the banks that hold the stablecoins' liquidity.").

107. *See* discussion *supra* note 85.

108. *See, e.g.*, Kevin Reynolds, *Stablecoins 'Pose Serious Risks' to Financial Security, ECB's Lagarde Says*, COINDESK (Nov 30, 2020, 1:58 PM), https://www.coindesk.com/policy/2020/11/30/stablecoins-pose-serious-risks-to-financial-security-ecbs-lagarde-says/ [https://perma.cc/3BMP-D6JA]; *G7 Finance Ministers and Central Bank Governors' Statement on Digital Payments*, TREASURY DEP'T (Oct. 13, 2020), https://home.treasury.gov/news/press-releases/sm1152 [https://perma.cc/4KQ6-K3LU].

and could "quickly become [a] material" systemic risk.[109]

Current regulatory tools (such as deposit insurance or emergency lending) are not sufficient to address or respond to this vulnerability.[110] Moreover, in the United States, it is not even clear whether digital currencies are under the SEC or the CFTC's purview.[111] Even if the agencies' division of labor were clear, in light of recent U.S. Supreme Court action on administrative powers, there is serious doubt as to whether regulatory action on digital assets would be lawful absent further congressional delegation.[112] Moreover, the cross-border quality of digital currencies likely requires a solution that is comprehensive and integrated into an international regulatory framework.[113]

Despite increasing regulatory preoccupation with these vulnerabilities[114]—recently catalyzed by the collapse of Terra and Luna, certain de-Fi lenders, and FTX—comprehensive regulatory fixes are not imminent. For example, although it expressed the need for regulation "as a matter of urgency," the European Central Bank (ECB) clarified that Europe-

109. *See* AZAR ET AL., *supra* note 86, at 25.

110. *See infra* notes 252–257 and accompanying text.

111. Although Gary Gensler is trying to fill these regulatory gaps through a memorandum of understanding with the CFTC, it is unlikely to significantly address the underlying lack of regulatory authority vis-à-vis other jurisdictions. *See* Stefania Palma & Patrick Jenkins, *SEC Chair Urges 'One Rule Book' for Crypto to Avoid Gaps in Oversight*, FIN. TIMES (June 24, 2022), https://www.ft.com/content/b9466a10-a2a6-412d-acf4-086609283df2 [https://perma.cc/74ZE-6D3A].

112. *See* West Virginia v. EPA, 142 S. Ct. 2587 (2022) (requiring "clear congressional authorization" for agency actions with "economic and political significance"); Stefania Palma & Kiran Stacey, *Supreme Court Ruling Casts Doubt on Powers of US Regulators*, FIN. TIMES (Jul. 4, 2022), https://www.ft.com/content/6f832b0c-7a9d-4fd0-b190-d668602d520a [https://perma.cc/ULZ5-ZRJ7] (quoting the most senior Republican on the House Financial Services Committee, as arguing that the decision was "a warning to the Biden administration—and the regulatory state in general—that they cannot circumvent lawmakers," especially "when it comes to determining the rules of the road for the digital asset ecosystem").

113. Some of the most important stablecoins are organized under the laws of jurisdictions other than the United States. For example, Tether is organized under British Virgin Islands law, which governs its contractual obligations to tokenholders. *See Legal: Terms of Service*, TETHER (Sept. 2, 2022), https://tether.to/en/legal/ [https://perma.cc/E2BD-T4AF] ("These Terms of Service shall be governed by and construed and enforced in accordance with the Laws of the British Virgin Islands, and shall be interpreted in all respects as a British Virgin Islands contract."). U.S. regulators have recognized that an international cooperation thus "requires international cooperation." Yellen, *supra* note 91.

114. Ryan Browne, *Regulators Are Getting Nervous About Stablecoins After Terra's Stunning Collapse*, CNBC (May 13, 2022, 9:53 AM), https://www.cnbc.com/2022/05/13/regulators-anxious-about-stablecoins-like-tether-after-ust-collapse.html [https://perma.cc/NR7N-KB4Z].

wide rules are not expected to arrive until 2024 at the earliest.[115] Stateside, apart from collaborating on an inter-agency report ordered by the Biden administration regarding digital assets and in part addressing the systemic risks presented by digital currencies,[116] the Department of the Treasury sought to recommend legislation to fix these systemic vulnerabilities (as recommended by that report).[117] However, proposed legislation[118] has gone nowhere, and swift passage of legislation through a divided Congress is unlikely given widespread partisan disagreement on regulatory proposals on digital assets.[119]

As a result, despite the immediacy and magnitude of the systemic vulnerabilities posed by stablecoins and similar instruments, policymakers seem to have no good policies at their disposal to either adequately regulate or prevent the collapse of these assets. In addition, the probability of new fixes in the near future is very small.

II. MODELING BANK RUNS AND COOPERATION

A. Describing the Problem

Why do depositors run and *how* do bank runs work? Economists' modern views on financial crises and bank runs evolved as a reaction to

115. Arnold, *supra* note 101 (quoting the ECB).

116. Exec. Order No. 14067, Ensuring Responsible Development of Digital Assets 87 Fed. Reg. 14143, 14147 (Mar. 14, 2022), https://www.govinfo.gov/content/pkg/FR-2022-03-14/pdf/2022-05471.pdf [https://perma.cc/PPW7-F5AY].

117. Jacquelyn Melinek, *US Treasury Secretary Janet Yellen Pushes for Stablecoin Regulation by End of Year*, TECHCRUNCH (May 10, 2022), https://techcrunch.com/2022/05/10/us-treasury-secretary-janet-yellen-pushes-for-stablecoin-regulation-by-end-of-year/ [https://perma.cc/4MVX-Y7R7]; PWG STABLECOIN REPORT, *supra* note 88, at 16–18.

118. *See, e.g.*, *Toomey Introduces Legislation to Guide Future Stablecoin Regulation*, U.S. SENATE COMM. ON BANKING, HOUS. & URB. AFFS. (Dec. 21, 2022), https://www.banking.senate.gov/newsroom/minority/toomey-introduces-legislation-to-guide-future-stablecoin-regulation [https://perma.cc/C492-XLQ6].

119. *See* Palma, *supra* note 112 (quoting the most senior Republicans on the Senate Banking Committee and the House Financial Services Committee as being critical of current Democratic approaches to the regulation of digital assets through agency rulemaking). For example, a plethora of "bipartisan" bills have been introduced to designate a regulatory agency as the main regulator of crypto assets. Yet these bills have disagreed on who should be the overseer, some favoring the SEC, some the CFTC, or some creating a new regulator. *See* Tory Newmyer, *Crypto Industry Would Get Its Preferred Regulator Under New Bill*, WASH. POST (Apr. 28, 2022, 5:39 PM), https://www.washingtonpost.com/business/2022/04/28/crypto-regulator-cftc/ [https://perma.cc/7HDZ-U2U3].

Douglas Diamond and Phillip Dybvig's Nobel Prize-winning model.[120] In their seminal paper, Diamond and Dybvig illustrated the high economic costs of runs by showing that bank deposit contracts[121] have "an undesirable equilibrium (a bank run) in which all depositors panic and withdraw immediately, including even those who would prefer to leave their deposits in the bank if they were not concerned about the bank failing."[122]

This phenomenon can be explained by a simple prisoner's dilemma.[123] Assume a Bank has two Depositors. Further assume that the Bank is solvent—that is, its assets exceed its liabilities.[124] In the ordinary course of its business, the Bank has lent the Deposits to an Entrepreneur, who is investing the funds in a productive manner, but who will be unable to pay the bank in full if the Bank tries to recall the loan before it is due. The liquidity constraints[125] on the Bank mean that it is unable to pay *both* Depositors simultaneously, such that if the Bank were presented with a situation where it had to disburse both Deposits at the same time it would face insolvency, even after trying to recall its loan to the Entrepreneur.[126] As

120. *The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022*, THE NOBEL PRIZE (Mar. 25, 2023), https://www.nobelprize.org/prizes/economic-sciences/2022/summary/ [https://perma.cc/HMC2-D3DE].

121. Their economic logic can be extended to most financial instruments in which liquidity is an issue and in which creditors might be able to run the lending institution. *Id.*

122. Diamond & Dybvig, *supra* note 4, at 402. Other economists have provided alternative models of runs. *See, e.g.*, Gorton, *supra* note 11 (emphasizing the role of asymmetric information in fueling runs). However, for our purposes in exposing bank run dynamics, the Diamond-Dybvig model is simpler and more intuitive, apart from being the hegemonic bank run model. Changing the underlying intuition of how bank runs are modeled (for example, from Diamond-Dybvig to Gorton's model) changes neither the importance of the Doctrine nor its efficacy, as both models stress how suspending convertibility is a relatively efficient tool to stop bank runs, especially in the absence of other policy tools like deposit insurance. *See* discussion *supra* note 11.

123. A more elaborate demonstration of these dynamics is available in either Dybvig & Diamond or in Gorton's models, discussed *supra* note 11.

124. Insolvency is defined in this simple way to capture an economic intuition; this is not meant as a legal definition, which would be unnecessarily technical for purposes of this example.

125. The bank's liquidity constraints need not be due to a loan. They could also originate from the bank's failure to adequately assess its liquidity needs, either by deploying the deposits in the financial markets in a less-than-perfectly liquid investment or by lending the deposits to someone else. This is not an unusual assumption—rather, this is banking's standard business model.

126. Again, this need not be the case for the coordination problem to occur. If the bank simply invested the assets in a less-than-perfectly liquid asset, the bank might be forced to sell the asset at a "fire-sale" price. The assumption that there is a "fire-sale" price is an

a result of this liquidity issue, the Bank is unable to pay the *last* Depositor in full. Moreover, let's stipulate that the Depositors would be better off by letting their savings stay in the Bank rather than withdrawing them, as they would miss out on both the security of having their money in the Bank and the interest that accrues in the Bank, a preference that is reasonable to assume given the fact that they have Deposits in the Bank in the first place.

Even though both Depositors, and the Bank, would be better off by leaving the Deposits in the Bank (the cooperative equilibrium), utility-maximizing Depositors have an incentive to run on the Bank if they expect that the Bank is—or will be—insolvent: They do not want to be the last Depositor in a run. In slightly more technical language, Depositors want to cooperate, but being unable to, they are forced into running the bank (non-cooperative equilibrium). The costs of this decision are high for *everyone* involved: Depositors miss out on the accrual of interest; the last Depositor loses some of its initial Deposit, as the Bank is unable to fully redeem the Deposit; the Bank is forced into insolvency when it fails to fully pay the Depositors; and the Entrepreneur's productive investment might be halted as a result of the Bank pulling back its loan.

The model evidences an especially problematic issue—how self-interested and utility-maximizing actors *should* run a bank if they expect the bank to face insolvency *regardless* of how solvent the Bank actually is.[127] As such, financial panics are self-fulfilling, and expectations of bank insolvency can trigger the insolvency of a bank through a bank run. Moreover, game theory models that include liquidity shocks have shown that a mere change in consumer expectations might be enough to trigger a bank run.[128] As Diamond and Dybvig note, "bank runs cause real economic problems because even 'healthy' banks can fail, causing the recall of loans and the termination of productive investment."[129] Given the significant costs of a bank run (from both a macroeconomic[130] and microeconomic[131] perspective),

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assumption common to similar models and supported empirically by the Great Recession. *See* ROBERT GIBBONS, GAME THEORY FOR APPLIED ECONOMISTS 73–75 (1992) (detailing a simple model of a bank run); ALIBER & KINDLEBERGER, *supra* note 10, at 32–36 (discussing bank run and fire-sale dynamics in a historical context).

127. *See* Diamond & Dybvig, *supra* note 4, at 404 ("[A] bank run in our model is caused by a shift in expectations, which could depend on almost anything, consistent with the apparently irrational observed behavior of people running on banks.").

128. *Id.*

129. *Id.* at 402.

130. *See supra* Part I.A.

131. Consider the inefficiencies and welfare losses associated with the cooperative equilibrium vis-à-vis the non-cooperative equilibrium.

their significant negative externalities, and the loss of social welfare, there is an almost unassailable argument for government intervention in the face of a bank run.

B. Two Policy Approaches

There are generally two possible approaches to the coordination problem posed by financial panics of this sort.[132] On the one hand, a policymaker could adopt a "price" approach, and could allow the actors to engage in economic activity, but somehow change the payoff expectations in a way that a bank run would not be a rational utility-maximizing choice.

The price approach is preferred in most policies addressing systemic risk,[133] with examples including deposit insurance,[134] capital buffers for banks designed to change creditor expectations of default,[135] or the creation of a "lender of last resort."[136] These approaches can be considered functional equivalents of Pigouvian taxes on non-cooperative decisions or strategies.[137] Even though these policies can certainly be effective, enforcing these measures might be slow, generate considerable reputational risk for those who use them, or involve heavy transaction and implementation costs.[138]

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132. *See* Martin L. Weitzman, *Prices vs. Quantities*, 41 REV. ECON. STUD. 477 (1974) (using this framework and discussing the trade-offs between using prices versus quantities as policy-making instruments).

133. *See* TIMOTHY GEITHNER, STRESS TEST: REFLECTIONS ON FINANCIAL CRISES 518–19 (2014) (outlining the "price" response mechanisms to a financial crisis).

134. *See* Diamond & Dybvig, *supra* note 4, at 413–16 ("[T]here are circumstances when government provision of deposit insurance can produce superior contracts.").

135. *See* Russell Cooper & Thomas W. Ross, *Bank Runs: Deposit Insurance and Capital Requirements*, 43 INT'L ECON. REV. 55 (2002) (analyzing how capital requirements can prevent bank runs when combined with deposit insurance).

136. Diamond, *supra* note 4, at 413–16.

137. *See, e.g.*, Weitzman *supra* note 132; Enrico Perotti & Javier Suarez, *A Pigovian Approach to Liquidity Regulation*, INT'L J. CENT. BANKING, Dec. 2011, at 1 (exploring the effectiveness of various approaches to liquidity regulation).

138. For example, in March of 2008 the Federal Reserve Bank tried to stabilize the tri-party repo market by creating a "lender of last resort" in the repo market, the Primary Dealer Credit Facility (PDCF), employing the Fed's powers pursuant to section 13(3) of the Federal Reserve Act. *Primary Dealer Credit Facility (PDCF)*, BD. OF GOVERNORS OF THE FED. RSRV. (Mar. 18, 2020), http://www.federalreserve.gov/regreform/reform-pdcf.htm [https://perma.cc/B47G-SJ3K] (providing a high-level overview of the Primary Dealer Credit Facility established by the Federal Reserve in 2008). Although the PDCF might have helped to reduce the effect of the crisis on the repo markets around late 2008, financial institutions in serious need for liquidity *refused* to use the PDCF out of "fear of stigma" until Lehman Brothers

Perhaps more importantly, these policy tools usually depend on *rational*, *profit-maximizing*, and *informed* actors—strong assumptions to make in heavily-panicked markets.[139] Moreover, by the time these actions are implemented, the actors' searches for liquidity might trigger "fire sales" that further destabilize other connected markets, as happened in 2008.[140]

On the other hand, a policymaker could take a "quantity" approach and *enforce* cooperation by temporarily making it impossible for creditors to choose the non-cooperative equilibrium. This, for example, is exchanges' rationale behind halts on the trading of particular securities during times of high volatility.[141] In the context of the game theoretic model of the run, this approach is functionally equivalent to temporarily barring the Depositors from withdrawing, thus forbidding them from choosing the non-cooperative equilibrium, *regardless* of what their expected payoffs for doing so might be at the time. This enforcement does not need to be permanent; once creditors realize that the government is willing to act to prevent a bank run from happening, there would be no incentive for creditors to run because the cooperative equilibrium is the utility-maximizing outcome, thus calming the panic.[142]

Although quantity policies have historically proven effective, aside from antiquated laws approving the mandating of "bank holidays" until a

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collapsed, and instead sought liquidity in other markets, potentially leading to "fire sales" in the markets of other financial instruments. *See* ADAM COPELAND, ANTOINE MARTIN & MICHAEL WALKER, FED. RSRV. BANK OF N.Y., STAFF REP. NO. 506, REPO RUNS: EVIDENCE FROM THE TRI-PARTY REPO MARKET 38–40 (2014), http://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr506.pdf [https://perma.cc/8GFA-UTUK] (suggesting that no system-wide run on repo has occurred despite the financial instability since 2007-2009). As such, the creation of a lender of "last resort" might be both untimely—due to bureaucratic processes and delays—and ineffective—if the goal is to reduce bank runs and fire sales.

139. *See generally* GEORGE A. AKERLOF & ROBERT J. SCHILLER, ANIMAL SPIRITS: HOW HUMAN PSYCHOLOGY DRIVES THE ECONOMY, AND WHY IT MATTERS FOR GLOBAL CAPITALISM (2009) (analyzing how standard economic theory has neglected to account for essential human factors). *See also* Tommy Gärling et al., *Psychology, Financial Decision Making, and Financial Crises*, 10 PSYCH. SCI. PUB. INT. 1, 1–3 (2009) (evaluating the effect of people's cognitive limitations in financial crises).

140. *See supra* note 138 explaining the failure of the PDCF.

141. 17 C.F.R. § 240.6h-1 (2021). This is often done in times of panic. For example, the New York Stock Exchange closed for four days after the September 11 attacks, and for two days after Hurricane Sandy. *See* Alexander Osipovich, *After the 9/11 Attacks, Wall Street Bolstered Its Defenses*, WALL ST. J. (Sept. 7, 2021, 5:30 AM), https://www.wsj.com/articles/after-the-9-11-attacks-wall-street-bolstered-its-defenses-11631007001 [https://perma.cc/QLJ3-P4ZZ] (detailing Wall Street's response to the September 11 attacks and the ongoing threat of cyberattacks to trading operations).

142. *See* discussion *supra* note 11.

panic ceased,[143] there have been few modern policies directed at temporarily forcing the actors to cooperate until their panic (i.e., their expectations of insolvency) cease.[144] Although this approach might seem primitive, it provides policymakers with valuable alternative regulatory responses that are quick to implement and effective in countering financial shocks in the form of bank runs and financial panics,[145] at least until more tailored measures can be implemented. This Article advances such a "quantity" proposal, arguing that courts should promote cooperation by temporarily refusing to enforce the convertibility of deposit contracts during certain financial panics.

III. THE COOPERATIVE ENFORCEMENT DOCTRINE

Before we proceed, let's have a brief recap: Financial crises are incredibly costly, measured in both economic and human terms. Yet these crises recur, even with preventative policies in place, and they are often catalyzed or amplified by bank runs. Although traditional "price" policy tools such as deposit insurance proved effective in deterring runs in a traditional banking context, the development of new financial instruments—

143. *See, e.g.*, MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, A MONETARY HISTORY OF THE UNITED STATES, 1867-1960, at 324 (2008) (describing the 1933 financial panic); Franklin D. Roosevelt, *Proclamation 2039—Bank Holiday, March 6-9, 1933, Inclusive*, THE AM. PRESIDENCY PROJECT, https://www.presidency.ucsb.edu/documents/proclamation-2039-bank-holiday-march-6-9-1933-inclusive [https://perma.cc/V7U5-D9QT] (last visited Mar. 24, 2023) (ordering a four-day bank holiday in light of excessive withdrawals of gold and currency). The Doctrine's proposal to temporarily suspend the enforcement of certain contracts is a much less severe measure, and one that, historically, has shown to be more conducive to halting panics while other effective measures are instituted. *Cf.* FRIEDMAN & SCHWARTZ, *supra* note 2, at 166–67 (comparing the 1907 and 1930-1933 panics).

144. *But see* Rory Van Loo, *Digital Market Perfection*, 117 MICH. L. REV. 815, 879–80 (2019) (proposing a "stop" button on AI-guided automatic purchasing decisions as a way to prevent bank runs).

145. Economists have long approved of such "quantity" proposals to prevent and stop bank runs. *See, e.g.*, Diamond & Dybvig, *supra* note 4. In their seminal paper, Diamond and Dybvig noted that deposit contracts with a suspension of convertibility feature were more efficient than regular contracts and generated a more "stable" banking system. *Id.* at 410–11. In line with current banking orthodoxy, Dybvig and Diamond showed that deposit insurance and lender-of-last-resort policies were economically superior to the suspension of convertibility contracts, given their relative efficiency in dealing with situations in which there was uncertainty as to the intertemporal consumption preferences of depositors. *Id.* at 413–16. However, in cases where deposit insurance or lender-of-last-resort schemes are either unavailable or unworkable, deposit contracts with suspension-of-convertibility features, such as contracts where convertibility would be suspended under the Doctrine, are an instrument preferable to regular deposit contracts.

such as mortgage-backed securities, repo agreements, and stablecoins—led to the proliferation of novel financial relationships that are both (i) functionally analogous to banking and similarly vulnerable to runs, and (ii) systemically important. Unsurprisingly, innovation has outpaced regulatory oversight and control, and previously effective policies have proven outdated in their application to these new financial relationships, leaving our current financial system critically vulnerable to bank runs.

Against this backdrop, this Article advances the "Cooperative Enforcement Doctrine" (or "Doctrine"), a policy that could serve as a valuable alternative to currently available tools. Given the considerable social and individual welfare stakes,[146] courts are justified in preventing runs during crises.[147] By selectively enforcing contracts in a way that temporarily suspends convertibility or redeemability, courts could help prevent runs and assist in calming financial panics. Such a "quantity" policy functionally eliminates the uncooperative prisoner's dilemma result, just as other quantity policies (such as suspending convertibility or mandating a "bank holiday") would—albeit in a less overbroad and blunt fashion.[148]

Although courts have seldom been a protagonist in these macroeconomic decisions, there are three significant justifications for action.[149] First, the stakes of inaction are astronomical—there is a large public interest in halting bank run scenarios, even when faced with high costs.[150] Second, courts have the power, and perhaps an obligation, to prevent destructive financial crises pursuant to the public policy doctrine.[151] Third, given the Doctrine's significant and unique policy advantages over

146. Defined as the sum of the Depositors, the Entrepreneur, and the Bank's utility. Although some might argue that reducing convertibility might reduce the overall efficiency of the market, and would thus lead to reduced social welfare, this claim is empirical and highly dubious given the incredibly high costs of recessions. See *supra* Section I.A for several empirical measures of the high economic costs of recessions, and Part II for a theoretical description of the deadweight losses borne by society during crises.

147. *See* GORTON, *supra* note 17, at 107 (proposing a policymaking maxim he calls the "Livingston Doctrine").

148. As should be evident, the Doctrine only requires the selective non-enforcement of one, or perhaps a few, debt contracts while all debtors assimilate the information that the government is not going to enforce their debt contracts in a bank run. Therefore, the policy is more tailored than a *general* suspension of convertibility, as a court would only have to issue a few decisions before the information is assimilated by debtors as a whole. See *infra* Section IV.C for a discussion of the relative flexibility of the Doctrine relative to congressional action.

149. These justifications are framed in a consequentialist language, although deontological considerations also weigh in favor of the application of the Doctrine. *See infra* Section III.D.

150. *See supra* Sections I.A, II.A.

151. *See infra* Section III.C.

traditional policy responses by other government branches, it can serve a crucial gap-filling role in the government's toolbox, thus advising for court action even when other policymakers are available to act.[152]

This Part proceeds in four sections. Section A will further clarify the Doctrine, sketching its application and addressing the issue of moral hazard. Then, we will make the legal case for the Cooperative Enforcement Doctrine as public policy in three steps. By drawing on the public policy's roots in common law, the *Restatement (Second) of Contracts* (the "Restatement"), [153] and the *Uniform Commercial Code* (the "UCC"),[154] Section B will show that—despite limited academic and judicial criticism—public policy is a longstanding contract doctrine that is widely-accepted today, solidly buttressing the Doctrine. Section C will then analyze and apply the standards that courts use in deciding contractual disputes regarding public policy, focusing on New York and, to an extent, Delaware, due to their preeminent status as financial and corporate cynosures.[155] In examining the application of the Doctrine, this Article will show that the Doctrine is not merely plausibly *justifiable* under the doctrine of public policy, but perhaps required by it. Afterwards, Section D will briefly consider constitutional and normative concerns.

A. Defining the Doctrine

First: *how* would the Doctrine work? Assume the Bank discussed in Part II was the victim of a run. It is unimportant whether the run is predicated

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152. *See infra* Part IV.

153. RESTATEMENT (SECOND) OF CONTS. (AM. L. INST. 1981).

154. U.C.C. (AM. L. INST. & UNIF. L. COMM'N 1977).

155. Most transactions are structured under Delaware or New York law, given those jurisdictions' expertise on financial issues. Sophisticated players, and most companies, predominantly choose New York commercial and contract. Theodore Eisenberg & Geoffrey P. Miller, *The Flight to New York: An Empirical Study of Choice of Law and Choice of Forum Clauses in Publicly-Held Companies' Contracts*, 30 CARDOZO L. REV. 1475 (2009).

Delaware law is corporations' second favorite commercial and contract law, *id.* at 1475–76, and is also the most frequently chosen law for incorporation and merger transactions due to its reputation for sophistication and innovation, Roberta Romano, *The States as a Laboratory: Legal Innovation and State Competition for Corporate Charters*, 23 YALE J. ON REG. 209 (2016).

Consequently, New York and Delaware are the two most likely state laws governing this dispute, implying that most disputes would be resolved in state courts in New York or Delaware, or in federal courts were a contractual dispute to arise under diversity jurisdiction. Given that most financial institutions are based in New York City and that the district is known for its expertise in resolving financial disputes, it is likely that federal suits will be brought in the Southern District of New York (S.D.N.Y.), known for its technical sophistication.

on mistaken expectations by the Depositors or whether the Bank has liquidity constraints for some independent reason. In such a situation, the Depositors would go to the Bank to convert their deposit contracts[156] into cash. The Bank would realize that, despite being solvent, it was not liquid enough to immediately redeem the debt. Upon the Bank's refusal to redeem the debt, the Depositors could then either decide to wait (an unlikely possibility in a panic leading to a bank run),[157] or sue the Bank for breach of contract under the terms of the underlying debt.[158]

After such a suit is filed, a court would have to consider the Depositors' arguments and the Bank's claims regarding its solvency. Enter the Doctrine. The Bank would need to prove four elements to the court to qualify for relief under the Doctrine. First, the Bank should prove that the current financial system is distressed.[159] Second, the Bank should show that it is the victim of

156. As explained before, there is no need for the Depositors to be consumers and for the Bank to be a consumer bank issuing standard deposit contracts. Similar dynamics apply to other instruments and more sophisticated players. *See* GORTON, *supra* note 17, at 183.

157. It is unlikely that creditors would just wait in a bank run, because this is economically irrational based on the information available to them. *See* Diamond & Dybvig, *supra* note 4.

158. Alternatively, the Bank's creditors could go to a bankruptcy court, but as this would not be the ideal policy outcome. *See* Edward R. Morrison, Mark J. Roe & Christopher S. Sontchi, *Rolling Back the Repo Safe Harbors*, 69 BUS. LAWYER 1015 (2014).

As such, in a world recognizing the Doctrine, a defendant Bank would argue that it is not insolvent and would seek to relocate to a federal or state court (most likely S.D.N.Y. or Delaware, or New York state courts). For a similar proposal regarding forum removal and coordination across courts, see Marcel Kahan and Edward Rock, *When the Government is the Controlling Shareholder: Implications for Delaware*, 35 DEL. J. CORP. L. 409 (2010) (arguing that Delaware courts should decline to apply Delaware corporate law to suits against government-controlled companies, in favor of redirecting the suits to federal court).

159. This follows from the legal requirements of the public policy doctrine and is further necessitated by the Constitution's Contract Clause. *See infra* Section IV.C. However, a court should not set this standard too high; doing so might effectively bar the Bank from seeking or obtaining relief under the Doctrine until when it is too late, significantly reducing the applicability and effectiveness of the Doctrine while increasing the likelihood of a crisis.

Some critics might fairly argue that this standard is too "malleable"—there might always be experts claiming that we are experiencing a financial crisis and, as such, a court will never be able to tell whether we are close to one. Although individual experts might often have drastically differing opinions on economic conditions, economic institutions such as the IMF, the World Bank, central banks, and the Treasury Department usually provide reliable and generally consistent economic analysis, significantly mitigating the risk of false positives. Courts, especially New York, Delaware, and S.D.N.Y courts, deal with financial and economic information and with technical or expert testimony frequently, and they do so with competence. Furthermore, special masters could assist a court for matters that truly exceed a court's technical competence, as they already do in several contexts. Moreover, this skeptical criticism proves too much—it essentially covers *any* factual finding by *any* Court, i.e., all

a run.[160] Third, the Bank should show that, absent liquidity constraints, it is in *reasonably* good financial condition and that—absent liquidity issues and unexpected circumstances—the Bank could be *reasonably* expected to repay its debts.[161] Fourth, the Bank should show that it is in good faith compliance with applicable financial regulations.[162] All of these requirements would limit the applicability of the Doctrine and would ensure that courts would only enforce cooperation in times of economic emergency that require exceptional action and thus qualify for public policy treatment.[163]

The court would hear these arguments and, if satisfied that they are

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factual findings might be subject to multiple differing expert opinions that a judge eventually has to weigh.

160. This constraint is dictated by the public policy doctrine. A judge should not void contracts *unless* strong and specific public policy considerations are at stake. *See infra* Section V.B.

161. This follows from the economic justification of the doctrine and from its legal grounds in the public policy doctrine. *See* Livingston v. Bank of N.Y., 26 Barb. 304, 306 (N.Y. Supr. Ct. 1857) ("Banks of issue, it will thus be seen, where they are acting in good faith *and are 'clearly solvent,'* have a little time to breathe, after suspension, although not very long.") (emphasis added).

I stress the reasonability standard not only because of its roots in the equitable doctrines in general, but also because in times of financial stress it might be extremely complicated to determine whether a bank is *solvent*. Insofar as the crisis is systemic, "[t]he entire system cannot honor demands for cash, and the counterfactual of whether a firm would be solvent were it not for the crisis cannot be answered." *See* GORTON, *supra* note 17, at 196. While it might not be *impossible* to determine whether a bank would be solvent absent the panic, prudence in the face of the exigencies of a panic would require that a court quickly determine whether it is reasonable to assume that the Bank would be able to pay its debts over time. Taking too long to apply the Doctrine could seriously reduce its effectiveness in deterring runs and fuel a financial crisis. *See* FRIEDMAN & SCHWARTZ, *supra* note 143, at 167 (comparing the 1907-1908 bank runs and the 1929-1933 runs and finding that the restrictions of payments were successful in 1907-1908 and not in 1929-1933 because they occurred early—rather than late—in the crisis, preventing widespread bank failures).

162. This element of the test is derived from courts' insistence that they should not foster or abet illegal behavior, in this case, the violation of other financial regulations. *See, e.g.*, *Livingston*, 26 Barb. at 306 ("Banks of issue, it will thus be seen, *where they are acting in good faith* and are "clearly solvent," have a little time to breathe, after suspension, although not very long.") (emphasis added); Lewis & Queen v. N. M. Ball Sons, 308 P.2d 713, 717 (Cal. 1957) ("[W]hen the evidence shows that the plaintiff in substance seeks to . . . recover compensation for an illegal act, the court has both the power and duty to ascertain . . . that it may not unwittingly lend its assistance to the consummation or encouragement of what public policy forbids.").

Moreover, legislative pronouncements on the importance of not "bailing out" firms that disobey or evade the law similarly support a requirement of legal compliance. *See* Extensions of Credit by Federal Reserve Banks, 80 Fed. Reg. 78959 (Dec. 18, 2015) (to be codified at 12 C.F.R. pt. 201).

163. *See infra* Sections III.B–C.

reasonably met, inform the parties that, under Cooperative Enforcement Doctrine, the Bank would be granted a short period of time to obtain liquid assets to honor its obligations to its Depositors. Moreover, the court would further clarify that, during that specified period, it would not enforce other obligations against the Bank.[164]

By applying the Doctrine, a court would be giving a dual signal to the market. On the one hand, it would signal that the Bank seems to be financially healthy and that the panic is unjustified, which—apart from assuaging Depositors—should provide credence to the Bank's claims to the capital markets more generally;[165] unilateral suspensions by the Bank, absent governmental backing, might prove counterproductive in resolving liquidity issues by signaling a lack of solvency.[166] On the other hand, it would signal that a bank run scenario is highly unlikely (at least for the duration of the order) because the courts will—temporarily—not enforce redemptions, as that would risk throwing the Bank into insolvency.[167] Such a move should both halt the run and restore Depositors' confidence in the financial system.

An important aspect of applying the Doctrine is that the expectation of its application should be enough to deter the Depositors from running. That is, the Doctrine should work *even if* no Depositor actually filed a lawsuit, because the specter of its potential application should soothe Depositors by convincing them that no other Depositors would be lucky enough to get their deposits from the Bank before they do. That knowledge should prevent

164. This could be seen as functionally analogous to both temporary restraining orders and to automatic stays granted at the beginning of bankruptcy proceedings. This remedy is thus quite conventional and fits squarely within a court's broad equity powers. *Cf.* Owen W. Gallogly, *Equity's Constitutional Source*, 132 YALE L.J. 1213 (2023).

165. A "reputational" boost for the Bank might be especially important, given how expectations of insolvency alone might be the initial, or current, cause of the run of the Bank by panicked creditors. *See supra* Section II.A; Diamond & Dybvig, *supra* note 4; Gorton, *supra* note 11.

Moreover, the Great Recession evidenced how reputational concerns might doom policy effectiveness and how some banks might not take advantage of policies benefiting them fearing the reaction of the capital markets. See *supra* note 138 for a discussion of the PDCF and its shortcomings as a "lender of last resort."

166. Even though some debt contracts might provide lenders with rights to suspend withdrawals or redemptions, a unilateral suspension of withdrawals by a Bank—unlike a suspension due to the Doctrine—risks further spreading, rather than calming, the panic. In contrast to a court-directed suspension, a unilateral suspension might not be as valuable or credible solvency signal to the market, given the Bank's self-interested motives in suspending withdrawals. *See* Adam Samson et al., *Bitcoin Tumbles as Crypto Lender Celsius Halts Withdrawals*, FIN. TIMES (Jun. 14, 2022), https://www.ft.com/content/25ac1667-9f50-4f16-b553-448ea4582613 [https://perma.cc/SCY4-AFVK].

167. See *supra* Section III.B for a discussion of the cooperation mechanism involved.

Depositors from panicking—just as knowledge of the existence of deposit insurance has historically prevented panics on insured deposits. As such, even when depositors might be worried about a bank's health, the "credible" invocation of the Doctrine by a bank should be enough to calm depositors—even in the absence of actual litigation.

Some might worry that the Doctrine would increase moral hazard in financial institutions, incentivizing risky behavior from institutions expecting a bailout. Although superficially plausible, this issue should not cause concern for three reasons. First, the third and fourth requirements of the Doctrine—i.e., that the Bank should be reasonably expected to be able to pay its debts and that the Bank is otherwise in compliance with applicable regulations—are meant to act as gatekeepers and to minimize the risk of moral hazard. Irresponsible risky behavior thus would not be "rewarded" by the Doctrine: banks unable to affirmatively show the court that they are in good financial health would not meet the third element of the test and would fail to qualify for the Doctrine, with bankruptcy a likely result. The dire consequences of a failure to qualify for the Doctrine would therefore have a deterrent effect, further incentivizing banks *ex ante* to comply with the overall regulatory scheme, likely enhancing the system's financial stability and decreasing the likelihood that banks would find themselves in a distressed situation.

Second, a strong form of this criticism proves too much. Moral hazard is a common unintended side effect of effective policies such as deposit insurance and can be addressed through regulation and post-crisis punishment for violations.[168] The success of these policies in deterring bank runs and maintaining relative financial stability shows that moral hazard can be effectively regulated.

Third, and relatedly, even if the Doctrine might, on the margin, increase moral hazard, that is not dispositive under a cost-benefit framework. The expected benefits of preventing a financial crisis greatly outweigh the expected costs of increased moral hazard by banks,[169] which—although undoubtedly real—are the subject of scholarly dispute about their

168. *See e.g.*, Harris Weinstein, *Moral Hazard, Deposit Insurance, and Banking Regulation*, 77 CORNELL L. REV. 1109, 1114 (1992) (describing how the existence of deposit insurance creates adverse incentives for banks and depositors, and recommending solutions to avoid such loss).

169. *See* GORTON, *supra* note 17, at 147–50 (discussing moral hazard in the context of Lehman Brothers and concluding that despite moral hazard's serious costs, there are regulatory measures to mitigate its effects and that stopping financial crises should be given priority due to their magnitude).

magnitude.[170] Therefore, the mere existence of marginal moral hazard is not a reason to deem the Doctrine economically undesirable; it is—at most—an argument for prudence in its application.

B. Public Policy as Grounds for the Doctrine

Now that we have a clear idea of what the Doctrine entails, we should consider both the legal support and the legal restrictions on the application of the Doctrine. A court seeking to apply the Doctrine has at its disposal an extensive menu of sources of legal authority. "Creative" statutory interpretation of existing regulations could provide an avenue for action in certain contexts. General equity principles could also provide suitable legal justifications for the temporary suspension of convertibility, for example. However, contract law is a cornerstone of these commercial relationships, and, consequently, to the claims and disputes over the obligations pursuant to these commercial relationships. Therefore, contract law is both the most theoretically and practically defensible situs for authority for the Doctrine.[171]

The law of contractual excuses provides several possible grounds for the enforcement of an efficient solution to the coordination problem presented by bank runs. Although the Doctrine could be buttressed by different contract doctrines,[172] this Article will focus exclusively on the strongest and most cogent ground for the Doctrine: public policy.

There is a long history of judicial non-enforcement and modification of contracts that are judged to be against public policy, in both England[173] and the United States.[174] Although criticized by some commentators as an

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170. The size and significance of moral hazard effects has been convincingly questioned by economic theorists, *see, e.g.*, Alan J. Marcus, *Deregulation and Bank Financial Policy*, 8 J. BANKING & FIN. 557 (1984), and empirical studies, *see, e.g.*, Natalya A. Schenck & John H. Thornton Jr., *Charter Values, Bailouts and Moral Hazard in Banking*, 49 J. REG. ECON. 172 (2016).

171. Readers familiar with international law might think of contract law as being the *lex specialis*. Consequently, a court should focus on contract law when seeking to apply the Doctrine.

172. The excuses of commercial impracticability, impossibility, and frustration of purpose could provide additional legal justifications. Moreover, it could be argued that there is a contractual incompleteness issue here, as the parties have not specified how they want the contract to operate in times where *all* contracts cannot be performed simultaneously.

173. *See* Percy H. Winfield, *Public Policy in the English Common Law*, 42 HARV. L. REV. 76 (1929) (showing the English common law roots of the public policy doctrine in contracts law).

174. *See generally* ELISHA GREENHOOD, THE DOCTRINE OF PUBLIC POLICY IN THE LAW OF

exercise of excessive judicial latitude (or activism)[175] for a long time,[176] considerations of public policy are and have been a fundamental and inseparable part of the law of contracts.[177] The three major authorities of contract law—longstanding common law precedent, the Restatement, and the UCC[178]—show that contract law not only allows, but might even require, courts to refuse to enforce contracts contrary to public policy.

> "Whatsoever a man may lawfully forbear, that he may oblige himself against; except where a third person is wronged, or the public is prejudiced by it."
>
> . . .
>
> It is the duty of all Courts of Justice to keep their eye steadily upon the interest of the public . . . and when they find an action is founded upon a claim injurious to the public, and which has a bad tendency, to give it no countenance or assistance in "foro civili."[179]

Courts on both sides of the Atlantic have long followed Justice Wilmot's[180] famous passage above in *Lowe v. Peers* establishing that contracts will be voided as against public policy if they are injurious to the public good.[181]While hardly new by then,[182] Judge Wilmot's decision was

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CONTRACTS: REDUCED TO RULES (1886) (showing the common law roots of the doctrine of public policy).

175. *See* Walter Gellhorn, *Contracts and Public Policy*, 35 COLUM. L. REV. 679 (1935) (explaining why courts voiding contracts on public policy grounds should seek to base their judgments on existing policy preferences rather than abstract judgments about the nature of the public good).

176. GREENHOOD, *supra* note 174, at 4 n.1.

177. *See* THERON METCALF, PRINCIPLES OF THE LAW OF CONTRACTS, AS APPLIED BY COURTS OF LAW 266–86 (1888).

178. Contract scholars have previously used these three sources as an adequate representation of the sources of contract law. *See* Alan Schwartz & Robert E. Scott, *Contract Interpretation Redux*, 119 YALE L.J. 926, 936 (2010) ("While a strong majority of U.S. courts continue to follow the traditional, 'formalist' approach to contract interpretation, some courts and most commentators prefer the 'contextualist' interpretive principles that are reflected in the Uniform Commercial Code and the Second Restatement.").

179. Low v. Peers, 97 Eng. Rep. 138, 143–44 (1770) (quoting Taylor v. Clarke, 2 Show. K.B. 345, 351 (1679)).

180. Judge Wilmot was a well-respected politician and distinguished Judge of the Supreme Court of England. *See generally* JOHN LATHERN, THE HON. JUDGE WILMOT: A BIOGRAPHICAL SKETCH (1881).

181. Crawford & Murray v. Wick, 18 Ohio St. 190, 202 (1868).

182. *See* WILLIAM SHEPPARD, THE TOUCH-STONE OF COMMON ASSURANCES, OR, A PLAIN AND FAMILIAR TREATISE, OPENING THE LEARNING OF THE COMMON ASSURANCES OR CONVEYANCES OF THE KINGDOME 132 (1648) ("And hence also it is that such conditions as are against the liberty of law, as that a man shall not marry, or the like, are void. *And hence also such as are against the public good.*") (emphasis added).

instrumental in linking principles of jurisprudence with the contractual doctrine of public policy by invoking "common law['s] . . . favourite dominant principle, 'Salus populi suprema lex.'"[183]

Even though Justice Wilmot's approach to public policy has indeed been gradually restrained over the years, in tandem with the overall decline of judge-made common law,[184] the doctrine nevertheless remains the law in the United States. Courts routinely void not only illegal contracts,[185] but also contracts that, if enforced, would significantly affect the public good.[186] Moreover, in applying the doctrine and "finding" public policy, courts will look to the common law.[187] That is why, even when faced with the daunting task of determining what "public policy" is, "courts must not be timid in voiding agreements which tend to injure the public good or contravene some established interest of society."[188]

In line with the common law, the Restatement notes that sometimes "a court . . . will refuse to enforce a promise or other term on grounds of public policy," when "the interest in freedom of contract is outweighed by some overriding interest of society."[189]

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183. Low, 97 Eng. Rep at 142 (quoting CICERO, DE LEGIBUS bk. 3, pt. 3, para. 8).

184. Steele v. Drummond, 275 U.S. 199, 205 (1927) ("It is only in clear cases that contracts will be held void. The principle must be cautiously applied to guard against confusion and injustice."). See Winfield *supra* note 173, at 90–91 for a discussion of *Egerton v. Brownlow* and on how—albeit, constrained by principles of judicial conservatism—the public policy doctrine survived the nineteenth century.

185. It should be noted that the non-enforcement of illegal contracts is *itself* a strong sign that contract law's reach is constrained by the limits of the "public good."

186. *See, e.g.*, Gaither v. Wall & Associates, Inc., 79 N.E.3d 620, 631 (Ohio 2017) ("The principle is well established that 'contracts which bring about results which the law seeks to prevent are unenforceable as against public policy' . . . . 'This rule stems from the legal principle which declares that no one can lawfully do that which has the tendency to be injurious to the public welfare.'" (citations omitted)).

187. *See, e.g.*, *In re* Baby, 447 S.W.3d 807, 823 (Tenn. 2014) (stating that, for purposes of a court's authority to invalidate a private contract that is contrary to public policy, "public policy of Tennessee 'is to be found in its constitution, statutes, judicial decisions and *applicable rules of common law*'" (emphasis added) (quoting Cary v. Cary, 937 S.W.2d 777, 781 (Tenn. 1996)); DeFrain v. State Farm Mut. Auto. Ins. Co., 817 N.W.2d 504, 512 (Mich. 2012) ("In ascertaining the parameters of our public policy, we must look to 'policies that, in fact, have been adopted by the public through various legal processes, and are reflected in our state and federal constitutions, our statutes, *and the common law*.'" (emphasis added) (quoting Rory v. Continental Ins. Co., 703 N.W.2d 23, 32 (Mich. 2005)). The Supreme Court has also turned to common law principles in analyzing questions of public policy relatively recently. *See* Town of Newton v. Rumery, 480 U.S. 386, 392 (1987).

188. Stamford Bd. of Educ. v. Stamford Educ. Ass'n., 697 F.2d 70, 73 (2d Cir. 1982) (citing Muscahany v. United States, 324 U.S. 49, 66 (1945)).

189. RESTATEMENT (SECOND) OF CONTS. ch. 8, intro. note (AM. L. INST. 1981).

Sections 178 and 179 flesh out this statement, further specifying when courts should refuse to enforce a contract because of public policy. Section 178 notes that contracts will be against public policy if "the interest in its enforcement is clearly outweighed in the circumstances by a public policy against the enforcement of such terms."[190] A court is usually in charge of such multi-factor balancing,[191] in accordance with section 178(2)–(3).

Although formally not binding, sections 178 and 179 are legally authoritative. They are widely cited in judicial decisions and are frequently deployed by judges as the dispositive analytical framework in determining whether a contract contravenes public policy, including by several federal circuit courts.[192] Furthermore, the Restatement's approach to public policy has been specifically cited and adopted by a variety of states,[193] even by states with considerably disparate legal traditions and political environments, such as Alaska,[194] Texas,[195] Illinois,[196] New York,[197] and Massachusetts.[198]

Finally, the UCC affords courts similar latitude to suspend or revoke the enforceability of certain contracts as against public policy *through* the doctrine of unconscionability.[199] Specifically, section 2-302 acknowledges a

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190. *Id.* § 178(1).

191. *Id.* § 178(1) cmt. b.

192. For example, in *Shadis v. Beal*, the Third Circuit affirmed (with the Supreme Court denying certiorari) a lower court decision voiding a no-attorneys'-fees clause as contravening public policy. 685 F.2d 824 (3d Cir. 1982), *cert. denied* 459 U.S. 970 (1982). The circuit court approved of the district court's balancing approach pursuant to section 178 and 179 of the Restatement. *Id.* at 833–34. The Second and Ninth Circuits have similarly followed the Restatement's balancing approach. *See, e.g.*, Bankers Tr. Co. v. Litton Sys., Inc., 599 F.2d 488, 492–94 (2d Cir. 1979); Bassidji v. Goe, 413 F.3d 928, 936–38 (9th Cir. 2005) (noting that under *Kaiser Steel Corp. v. Mullins*, 455 U.S. 72 (1982), federal courts are allowed to use a balancing approach of equitable considerations).

193. *See, e.g.*, Mincks Agri Ctr., Inc. v. Bell Farms, Inc., 611 N.W.2d 270, 275 (Iowa 2000); 1800 Ocotillo, LLC v. WLB Grp., Inc., 196 P.3d 222, 227 (Ariz. 2008).

194. Alaska State Emp. Ass'n v. Alaska Pub. Emp. Ass'n, 813 P.2d 669, 677 (Alaska 1991).

195. State v. Williams, 938 S.W.2d 456, 460–61 (Tex. Crim. App. 1997).

196. K. Miller Constr. Co., Inc. v. McGinnis, 938 N.E.2d 471, 477–78 (Ill. 2010).

197. Cowles v. Brownell, 538 N.E.2d 325, 330 (N.Y. 1989).

198. Joffe v. Wilson, 407 N.E.2d 342, 347–48 (Mass. 1980).

199. The Uniform Law Commission issued proposed amendments to the UCC that should clarify the UCC's application to digital assets. *See UCC, 2022 Amendments To*, UNIF. L. COMM'N, https://www.uniformlaws.org/committees/community-home?communitykey=1457c422-ddb7-40b0-8c76-39a1991651ac [https://perma.cc/J4QX-FSAD] (last visited Mar. 24, 2023). That being said, UCC Article 2, for example, is unlikely to govern the transactions at hand as these are not contracts for goods but deposit contracts. However, the UCC is still instructive, as courts often analogize to the UCC as a way to either interpret state law or to

court's power to "limit the application of any unconscionable clause as to avoid any unconscionable result."[200] That being said, courts have consistently interpreted *substantive* unconscionability as encompassing contracts perceived to be against public policy.[201] Consequently, contracts that contravene public policy, such as contracts which would lead to a financial crisis if enforced, are substantively unconscionable and thus unenforceable under section 2-302 of the UCC. As we can see, then, the common law, the Restatement, and the UCC all envision that courts might refuse to enforce contracts that are against public policy.

Some critics might argue that, despite this precedent, the public policy doctrine is by design too "restrained" to provide an appropriate legal buttress for the Doctrine. This vague criticism can be construed in two ways. If this is a *positive* criticism—i.e., a concern that the law on the excuse of public policy is, as a matter of fact, not really legally solid and therefore cannot serve as grounds for the Doctrine—then the examples that follow should convince the skeptic that courts have indeed followed the public policy doctrine for a long time and continue to do so. The discussion above illustrates how all three main sources of contract law have solidified the public policy doctrine as good law, at both the state and federal level. As such, a judge has the public policy doctrine as—at least—a *possible* and *available* legal ground for their decision to apply the Doctrine and halt a run. At most, this positive criticism would show that a judge should be prudent in anchoring the Doctrine in the public policy doctrine; the criticism does not prove that a judge is acting incorrectly, immorally, or illegally by invoking the Doctrine. Thus, the legal discussion that follows, elaborating on the necessity and propriety of applying the Doctrine, should dispose of this factual criticism.

Nonetheless, a dissatisfied critic might try to counter by rephrasing the

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establish what "public policy" means. *See, e.g.*, State *ex rel.* King v. B & B Inv. Grp., Inc., 329 P.3d 658 (N.M. 2014).

200. U.C.C. § 2-302 (AM. L. INST. & UNIF. L. COMM'N 1977); *see also id.* at § 2-302 cmt. 2 (explaining that one of the purposes of this provision is to allow the court to "simply limit unconscionable clauses so as to avoid unconscionable results").

201. *See, e.g.*, *King*, 329 P.3d at 670–72 (explaining that substantive unconscionability is found where the contract terms themselves are "illegal, *contrary to public policy*, or grossly unfair," and that "UCC's unconscionability doctrine . . . codifies the courts' broad remedial power to refuse to enforce an unconscionable contract, strike the offending clause, or limit the application of the offending clause to avoid an unconscionable result" (emphasis added) (citation omitted)); Sec. Serv. Fed. Credit Union v. Sanders, 264 S.W.3d 292, 297 (Tex. Ct. App. 2008) ("Courts may properly decline to enforce a contract . . . on the ground that it is against public policy and therefore substantively unconscionable.").

criticism, instead arguing that despite being available to a court, this Article has failed to show that the public policy doctrine is the *only* or *best* legal doctrine to be applied by a judge faced with a run. Notice, however, that this is not a factual concern, but is rather a *normative* critique stemming from a completely distinct theory of what law is, what judges do, and how judges should decide cases—a camouflaged orthodox formalist critique.[202] Answering such a critique would be neither productive nor possible in the constrained space of this Article.[203] Rather, it should suffice to point out that such strict formalism is uncommon in the law and that, under a less strictly formalist conception of the law, a judge need only have *possible* or *justifiable* grounds for a decision as long as that decision has a "desirable" result—a standard that this Article easily meets.

C. Public Policy as Necessitating the Doctrine

Acknowledging that judges indeed possess broad, albeit limited, powers to either selectively enforce or void these contracts as a matter of public policy is not the end of the inquiry into the appropriateness of the public policy doctrine as a legal buttress for the Cooperative Enforcement Doctrine. A court needs to find what the "public policy" is before determining that enforcing contracts that may be harmful to the economic wellbeing of the public is indeed against public policy. Therefore, this Section will discuss how bank runs are against public policy, and will show how both approaches to public policy—*textual* and *contextual*—support the Doctrine.

Courts have used two main standards in determining whether a contract is "against public policy." The first one, which we can call the *textual* approach, asks the court to bind its reasoning to existing explicit public policy decisions and declarations, preferably made by a legislature in the

202. This critique is "formalist" in the sense that it assumes (or requires) law to be determinate, non-contradictory, and clear in applying to every case.

203. That does not mean that such an endeavor is useless. For developed rebuttals of this formalist critique, see, for example, Oliver Wendell Holmes, *The Path of the Law*, 10 HARV. L. REV. 457 (1897), Felix Cohen, *Transcendental Nonsense and the Functional Approach*, 35 COLUM. L. REV. 822 (1935), and Richard A. Posner, *Legal Formalism, Legal Realism, and the Interpretation of Statutes and the Constitution*, 37 CASE W. RES. L. REV. 179 (1986). Critical Legal Studies has similarly rejected legal formalism's insistence on the determinacy and completeness of law as both factually implausible and normatively undesirable. *See generally* ROBERTO UNGER, THE CRITICAL LEGAL STUDIES MOVEMENT (2015).

form of statutes,[204] but also affording weight to prior judicial decisions.[205] The second approach, which we can call the *contextual* approach, defines public policy in its relationship to some established principles related to the pursuit of the public good.[206] These approaches are not mutually exclusive—in fact, courts frequently employ a combination of both when making a decision.[207]

There are strong grounds for the Doctrine under a textual approach, buttressed by strong support for the Doctrine's aims and methods in federal statutes and judicial decisions. Congress has long expressed an opposition to bank runs, in fact designing our current banking regulatory system with that aim in mind. The Federal Reserve was created after 1907's crippling bank runs "produced the strong demand for banking reform which finally led to the passage of the Federal Reserve Act."[208] Similarly, facing an acute banking crisis in the early 1930s that was not prevented by the Federal

204. See Walter Gellhorn, *Contracts and Public Policy*, 35 COLUM. L. REV. 679 (1935), for a similar taxonomy of public policy approaches, albeit one more focused on the source of the *statement* analyzed as constituting public policy.

205. See *supra* notes 187–188 for cases highlighting the importance of previous judicial decisions in determining the meaning of "public policy."

206. *See, e.g.*, Fomby-Denson v. Dept. of Army, 247 F.3d 1366, 1375 (2001) ("[T]he federal courts, as a matter of contract law, will not enforce an agreement if the agreement would require violation of established public policy norms . . . . [T]he public policy at issue [must be] 'well defined and dominant.'" (quoting W.R. Grace & Co. v. Loc. Union 759, 461 U.S. 757, 766)); *Stamford*, 697 F.2d at 73.

207. See, for example, *King*, 329 P.3d at 670–72, for a dual justification of the Court's decision—one based on its reading of a statute and one based on its considerations regarding the public good.

208. FRIEDMAN & SCHWARTZ, *supra* note 143 at 138; Donald L. Kemmerer, *The Federal Reserve System*, *in* AMERICAN FINANCIAL INSTITUTIONS 50, 53–55 (Herbert V. Prochnow ed., 1951) ("But the fault of the National Banking System that led, more than any other, to a demand for reform was the lack of a central bank. A total of 243 banks failed in the 1907-08 panic, 31 of them national banks. Worse records had been compiled in the 1890's, but this-on top of the experiences of the past-made people especially impatient.").

Reserve,[209] with panics that threatened to fuel system-wide bank runs,[210] President Franklin Roosevelt (and then Congress) enacted a bank holiday,[211] suspending the operations of all banks while the government implemented a policy response to stop the panic.[212] After the panic had waned, President Roosevelt and Congress sought to reform the banking system and end bank runs with the creation of the Federal Deposit Insurance Corporation, or

209. FED. DEPOSIT INS. CORP., A BRIEF HISTORY OF DEPOSIT INSURANCE IN THE UNITED STATES 20–24 (1998) https://www.fdic.gov/bank/historical/brief/brhist.pdf [https://perma.cc/N55S-PF2A] (describing the 1930-1933 panics and the Federal Reserve's unwillingness, and later inability, to stop the panics); Kemmerer, *supra* note 208, at 65 ("The Federal Reserve System assisted with open-market buying operations, and the Hoover Administration created the Reconstruction Finance Corporation. But all these efforts, and others too, were not enough."); FRIEDMAN & SCHWARTZ, *supra* note 143, at 11 ("Throughout the contraction, the System had ample powers to cut short the tragic process of monetary deflation and banking collapse. Had it used those powers effectively in late 1930 or even in early or mid-1931, the successive liquidity crises that in retrospect are the distinctive feature of the contraction could almost certainly have been prevented and the stock of money kept from declining or, indeed, increased to any desired extent. Such action would have eased the severity of the contraction and very likely would have brought it to an end at a much earlier date.").

210. A couple of days after the enactment of the bank holiday, President Roosevelt gave a speech, his first "fireside chat," explaining the rationale behind the holiday. *See Transcript of Speech by President Franklin D. Roosevelt Regarding the Banking Crisis, March 12, 1933*, FED. DEPOSIT INS. CORP. (Apr. 17, 2008), https://www.fdic.gov/about/history/3-12-33transcript.html [https://perma.cc/JB37-S62Z] ("Because of undermined confidence on the part of the public, there was a general rush . . . . A rush so great that the soundest banks could not get enough currency to meet the demand. The reason for this was that on the spur of the moment it was, of course, impossible to sell perfectly sound assets of a bank and convert them into cash except at panic prices far below their real value. . . . Your Government does not intend that the history of the past few years shall be repeated. WE do not want and will not have another epidemic of bank failures."); *see also* Ray B. Westerfield, *The Banking Act of 1933*, 41 J. POL. ECON. 721 (1933) (discussing the panic and the government's passage of the 1933 Act); FED. DEPOSIT INS. CORP., *supra* note 209, at 24.

211. *See Roosevelt*, supra note 143. Congress' passage of the Emergency Banking Act, in effect codifying President Roosevelt's 1933 bank holiday, similarly exemplifies the legislature's concern with financial panics, and its willingness to suspend banking activities to address and calm the panic. Emergency Banking Act, Pub. L. No. 73-1, 48 Stat. 1 (stating "that a serious emergency exists and that it is imperatively necessary speedily to put into effect remedies of uniform national application" including the national suspension of the banking operations of all banks).

212. *See* Kemmerer, *supra* note 208, at 66 ("The action of the government in closing all banks in March 1933 and only reopening those which passed inspection helped to restore confidence in banks. But it was felt that something also had to be done to reduce the nation's large number of bank failures and to prevent the 'runs' which were so dramatically tragic and fatal in every panic. The 1933 law established a temporary Federal Deposit Insurance Corporation, and the 1935 law made it permanent."); FRIEDMAN & SCHWARTZ, *supra* note 143, at 420–22; FED. DEPOSIT INS. CORP., *supra* note 209, at 24.

FDIC.[213]

Yet Congress has not merely expressed its public policy preferences in the banking context. The passage of the Securities Exchange Act of 1934, and especially its inclusion of market manipulation as a crime,[214] evidence Congress' desire to promote the public welfare and to regulate—or even proscribe—private transactions in the financial markets that countered this goal.[215] This approach has been extended to financial regulations that authorize halting securities trading during massive selloffs as a way of stopping a run on the equity markets.[216] As such, the Doctrine carries on with the public policy embodied by these policy schemes, similarly seeking to stop financial panics in order to ensure cooperation and "protect . . . the public interest."[217]

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213. Congress then acted on Roosevelt's recommendation and passed the Banking Act of 1933, creating the FDIC as a mechanism to stop bank runs in the future. Westerfield, *supra* note 210, at 747–49; FED. DEPOSIT INS. CORP., *supra* note 209, at 25 ("After some semblance of order had returned to the financial system, efforts were renewed in Congress to enact deposit insurance legislation."); *id.* at 25–27 (summarizing the passage of the Act); FRIEDMAN & SCHWARTZ, *supra* note 143, at 440–41 ("Adopted as a result of the widespread losses imposed by bank failures in the early 1930's, federal deposit insurance, to 1960 at least, has succeeded in achieving what had been a major objective of banking reform for at least a century, namely, the prevention of banking panics.").

214. Securities Exchange Act of 1934, Pub. L. No. 73-291, 48 Stat. 881 (1932) (codified as amended at 15 U.S.C. § 78a et seq.); *see also* 15 U.S.C. § 78i (addressing market manipulation).

215. In explaining the "necessity for regulation" as provided in this title, Congress indicated that the Act was borne out of a concern with "[n]ational emergencies, which . . . adversely affect the general welfare, are precipitated, intensified, and prolonged by manipulation and sudden and unreasonable fluctuations of security prices and by excessive speculation." 15 U.S.C. § 78b(4).

216. *See* 17 C.F.R. § 240.6h-1 (establishing regulatory halt requirements for security futures products); *see also* Notice of Filing and Immediate Effectiveness of Proposed Rule Change Delaying the Operative Date of a Rule Change to NYSE Rule 80B, 78 Fed. Reg. 8662, 8663 at 5 (Feb. 6, 2013) ("[This] proposal . . . furthers the objectives of Section 6(b)(5) of the [Securities and Exchange] Act [of 1934], in particular, in that it is designed to . . . promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest."); *supra* note 213 (discussing the 1933 panic and the passage of the Emergency Banking Act and the Banking Act of 1933).

217. *See* discussion *supra* note 216. *See also* GORTON, *supra* note 17, at 98–124 (recounting the long American tradition of refusing to enforce debt contracts during financial crises). A textualist critic might point out that there is no "Cooperation Enforcement Act" and that Congress' denial to explicitly create such a statute *forecloses* the possibility of the Doctrine being buttressed in the actual policy preferences of Congress. However, the negative inference works the other way: The existence of a longstanding tradition giving the courts the

The Doctrine also finds explicit support in United States case law of the public policy doctrine, as developed by judicial opinions at both the federal and the state levels. Courts have been enforcing a principle like that of the Cooperative Enforcement Doctrine for more than a century.[218] In *Livingston v. Bank of New York*, a New York court refused to enforce debt contracts during a bank run on the ground that doing so would make a bank insolvent, such a result being against New York's public policy.[219] In *Home Building & Loan Association v. Blaisdell*, the Supreme Court held that in the analogous context of mortgage contracts, the government has both the power to, and an interest in, not enforcing contracts that would affect the social welfare during times of economic emergency.[220] The Court commented that even "[i]n the absence of legislation" explicitly empowering courts, courts could exercise their powers to alter these contracts on "equitable grounds where they were found to be unfair."[221] Moreover, the Court noted that its equitable powers were "firmly established" and that they could not be "frustrated even by the engagement of the debtor entered into at the time of the mortgage."[222] Therefore, there is a strong argument that Congress and the Supreme Court have already *explicitly* indicated their opposition to bank runs—and thus their implicit endorsement of policies like the Doctrine—in times of economic distress as a matter of public policy.

A court wishing to buttress the Doctrine in public policy principles could also easily meet the *contextual* standard. The contextual standard draws on "principles" or "norms" of public policy, usually with reference to

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power to apply the Doctrine and the courts' extensive history of applying the public policy doctrine in the face of congressional inaction, if anything, shows that Congress has approved of the Doctrine.

Moreover, this argument critically depends on a normative claim about the role of the courts in a democracy—it is not just an argument on interpretative grounds. A purely positive textualist argument would fail because the literature is full of cases and legal sources (such as the Restatement and UCC) adopting the contextual standard of public policy. As such, the argument begs the question with respect to an important and contentious premise, one that cannot be discussed within the confines of this Article.

218. Gorton does a superb job of tracing the *Livingston*'s rationale as a cornerstone of financial regulation up to the Great Recession. *See* GORTON *supra* note 17.

219. Livingston v. Bank of N.Y, 26 Barb. 304, 306 (N.Y. 1857).

220. Home Bldg. & Loan Ass'n v. Blaisdell, 290 U.S. 398, 440–41 (1934); *see infra* Section IV.C for a discussion of the constitutional boundaries of the Cooperative Enforcement Doctrine.

221. *Blaisdell*, 290 U.S. at 446–47.

222. *Id.*

the public good.[223] Although disfavored in certain legal circles under a slippery slope rationale, such an approach is consistent with (and is common in) current law,[224] and not mutually exclusive with the textual standard. Consider how the Tennessee Supreme Court formulated the standard:

> Public policy is the present concept of public welfare or general good. Public policy is practically synonymous with public good and *unless the private contract is in terms of such a character as to tend to harm or injure the public good, public interest on public welfare* or to violate the Constitution, laws, common or statutory, or judicial decisions of the State, it is not violative of public policy nor void on that account.[225]

As we explored above, (i) all three branches of the federal government have a strong and explicit policy of trying to prevent bank runs (and so do the states most likely to implement the Doctrine);[226] (ii) this opposition has been consistent and well-defined enough to be considered a "principle" or a

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223. Although disfavored by some critics, this approach has been law for centuries. *See, e.g.*, *Public Policy*, BLACK'S LAW DICTIONARY 1245 (7th ed. 1999) (defining public policy as "principles and standards regarded by the legislature or by the courts as being of fundamental concern to the state and the whole of society," and as "the principle that a person should not be allowed to do anything that would tend to injure the public at large"). Although technically distinct, this approach is conceptually equivalent to the Restatement's approach. *See supra* Section III.B (discussing the common law and Restatement approaches to public policy).

224. This approach is supported by the Restatement and the UCC. *See supra* Section III.B. It is also grounded on Supreme Court precedent. *See, e.g.*, *Blaisdell*, 290 U.S. at 446–47; *see also infra* Section III.D (discussing the Contracts Clause and courts' limitations in voiding or selectively enforcing contracts as contravening public policy).

225. Lazenby v. Universal Underwriters Ins. Co., 383 S.W.2d 1, 5 (Tenn. 1964) (emphasis added).

226. New York has a long history of opposing bank runs, *see, e.g.*, Livingston v. Bank of N.Y., 26 Barb. 304, 306 (N.Y. 1857), and its courts continue to refuse to enforce contracts opposite to public policy, *see* 64th Assoc., L.L.C. v. Manhattan Eye, Ear & Throat Hosp., 813 N.E.2d 887, 889 (N.Y. 2004) ("Ordinarily, courts are not involved in the oversight or approval of contracts and will enforce them unless illegal, *against public policy* or deficient in some other respect." (emphasis added)); Beth Israel Med. Ctr. v. Horizon Blue Cross & Blue Shield of N.J., Inc., 448 F.3d 573, 580 (2d Cir. 2006) ("Under New York law. . . . [c]ontracts for an illegal purpose or contrary to public policy are not enforceable."). Similarly, Delaware continues to recognize preventing bank runs as a public policy matter. See Cohen v. State *ex rel.* Stewart, 89 A.3d 65, 97 (Del. 2014) ("Most importantly, there were strong public policy reasons justifying the Court of Chancery's refusal to delay the entry of the Rehabilitation Order . . . . [The company]'s board feared a 'run on the bank' that would further deplete [the company]'s assets. The record evidence was overwhelming that [the company]'s financial condition was precarious, and its own board had come to the belated realization that [the company] was insolvent.").

"norm" of public policy;[227] and (iii) pursuing the Doctrine furthers the public good, because the expected benefits of avoiding a run far outweigh the costs of preventing it.[228] Therefore, under both standards, federal and state public policy requires preventing a bank run that could unleash a larger crisis, thus counseling courts to apply the Doctrine.

D. Constitutional and Normative Considerations

Does the Constitution constrain the application of the Doctrine? The Contracts Clause does state that "[n]o State shall . . . pass any . . . Law impairing the Obligation of Contracts."[229] Even though the Contracts Clause is a substantial restraint on state action, it should not seriously limit the Doctrine for several reasons. First, the Contracts Clause's "prohibition is aimed at the *legislative* power of the state, and not at the decisions of its courts."[230] Second, the Contracts Clause prohibition "is not an absolute one,"[231] and merely requires an assessment of "reasonableness."[232] Finally, and perhaps more on point, the Supreme Court has held that the government can, in order to avoid an emergency from "economic causes,"[233] employ "reasonable means to safeguard the economic structure upon which the good of all depends" as a "rational compromise between individual rights and public welfare."[234] Given the Doctrine's reasonable implementation

227. FRIEDMAN & SCHWARTZ, *supra* note 143, at 11–12 ("In banking, the major change was the enactment of federal deposit insurance in 1934. . . . [I]t is of the greatest importance for the subsequent monetary history of the United States. Since the establishment of the Federal Deposit Insurance Corporation, bank failures have become a rarity.").

228. *See supra* Section I.A (estimating the actual costs of financial crises); Section II.A (modeling the costs of bank runs); *infra* notes 239–246 and accompanying text (discussing the costs of preventing a run through the Doctrine).

229. U.S. CONST. art. I, § 10.

230. *See* New Orleans Waterworks Co. v. La. Sugar Refin. Co., 125 U.S. 18, 30 (1888) (emphasis added). This original construction is still often used by Courts, *see., e.g.*, Nowicki v. Contra Costa Cnty. Emps.' Ret. Ass'n, No. 17-CV-00629, 2017 WL 2775040, at *13 (N.D. Cal. June 27, 2017), and is in harmony with how contiguous clauses of Article I, Section 10 are interpreted, *see, e.g.*, Rogers v. Tennessee, 532 U.S. 451, 462 (2001) (affirming that the ex post facto law prohibition of the constitution applies mainly to the legislature, not the courts).

231. U.S. Tr. Co. of N.Y. v. New Jersey, 431 U.S. 1, 21 (1977) (quoting Home Bldg. & Loan Ass'n v. Blaisdell, 290 U.S. 398, 428 (1934)).

232. *Blaisdell*, 290 U.S. at 428, 430–31.

233. *Id.* at 439–40.

234. *Id.* at 442–43. Even at the historic cusp of the Court's de-regulatory agenda, *Lochner* acknowledged that freedom of contract did not go so far as to prevent regulation for the

mechanisms and the considerable economic costs of a financial crisis, constitutional considerations should not unduly constrain a court seeking to apply the Doctrine—even with the current ideological composition of the Court.

Although the Constitution might not bar the application of the Doctrine, some might intuitively oppose the Doctrine on analogous normative freedom-of-contract grounds, likely following deontological commitments or consequentialist considerations. These critiques are part of vast debates that predate the Doctrine and are outside of the scope of this Article; however, for the sake of completeness, this Article will outline some preliminary responses to these criticisms.

Insofar as this argument follows from a critic's deontological commitments to an inviolate (or seemingly inviolate) "freedom of contract," this Article lacks a full response. It should suffice here to quickly note that generally (i) the criticism fails insofar as the moral force of its argument is derived from *legal* notions of freedom of contract, because the law generally endorses all kinds of restrictions on freedom of contract, especially in emergencies;[235] (ii) inviolate deontological commitments of this type usually crumble when countered with a trolley-type problem (e.g., saving one life for the sake of many?) of catastrophic proportions, such as a financial crisis;[236] and (iii), as Justice Holmes noted, inviolate contract rights are incompatible with our system of rights (and generally with our current regulatory system) because "[o]ne whose rights, such as they are, are subject to state restriction, cannot remove them from the power of the state by making a contract about them."[237]

"general welfare." *See* Lochner v. New York, 198 U.S. 45, 53, 57 (1905) (striking down a maximum working hours law as improperly interfering with freedom of contract because the law involves "neither the safety, the morals, nor the welfare, of the public, and that the interest of the public is not in the slightest degree affected by such an act").

235. *See supra* Section III.D. Even deontological contract theorists concede that contract law "is after all, a practical institution. . . . Such a regime cannot correspond exactly to what the morality of promising requires." CHARLES FRIED, CONTRACT AS PROMISE: A THEORY OF CONTRACTUAL OBLIGATION 152 (2d ed. 2015). They similarly recognize that unconscionable contracts need not be enforced by the state, because "[r]espect for their autonomy may mean that the law will not interfere with [an unconscionable] arrangement, but surely it does not require that judges, jurors, and bailiffs involve themselves in enforcing its implementation." *Id.* at 155.

236. *See generally* DEREK PARFIT, ON WHAT MATTERS (2011). *But see* Barbara H. Fried, *What Does Matter? The Case for Killing the Trolley Problem (Or Letting It Die)*, 62 PHIL. Q. 505, 512–17 (2012) (criticizing Parfit's emphasis of trolley problems, and arguing that a more important challenge to deontology is its inability to deal with risk).

237. Hudson Cnty. Water Co. v. McCarter, 209 U.S. 349, 357 (1908).

Most importantly, it is unclear a key premise of the criticism is true—the Doctrine might not actually conflict with the parties' contractual intent or "freedom" to contract. Several of the instruments discussed here explicitly contemplate restrictions on redeemability upon governmental interventions.[238] In addition, the public policy doctrine is, in fact, an implicit part of every contract as an integral part of the law governing the contract.

A consequentialist criticism is most likely to be couched in the welfarist analysis standard in Law and Economics literature. That analysis would balance the expected marginal costs and benefits of the Doctrine to determine whether the additional restriction on freedom is justifiable.[239] Indeed, the marginal costs of applying the Doctrine would not be insignificant. The Doctrine would impose, inter alia, (i) *ex ante* contracting costs on parties dealing in risky financial instruments, as parties incorporate knowledge of the Doctrine into lengthier and costlier negotiations, with secondary macro-level efficiency costs;[240] (ii) some *ex post* costs to depositors, as they would not obtain liquidity at the desired time and might incur secondary costs (e.g., litigation costs); (iii) moral hazard costs, which should be negligible, as discussed above;[241] and (iv) unspecified but possible dignitary harms.

These costs, however, do not seem to outweigh the expected benefits of increased marginal protection against financial crises—crises that, as discussed previously, cost trillions of dollars and impose significant human suffering.[242] Moreover, from a dynamic perspective, the microeconomic efficiency losses resulting from a perceived decrease in contractual freedom are likely dwarfed by the macroeconomic advantages of a less panic-prone financial system.[243] Furthermore, recessions caused by financial crises are not just temporary blips in the economic performance of the economy—they

238. For example, Tether's terms of service explicitly contemplate suspended redeemability upon governmental intervention, dispelling the notion that the parties did not foresee, contemplate, or agree to the application of the Doctrine. *See Terms of Service*, *supra* note 113. Moreover, it is arguable that the contract is merely incomplete, and that *ex ante* the parties would agree to a contract that would enforce cooperation in times of crisis, as simple game theory models would suggest, therefore making the Doctrine not an intervention against the will of the parties, but rather an intervention in its favor. *Cf.* FRIED, *supra* note 235, at 157–59.

239. *See, e.g.*, RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW (2014).

240. It is also possible that there would be a marginal increase in interest rates on instruments to which the Doctrine would apply.

241. *See supra* notes 168–170 and accompanying text (discussing moral hazard costs).

242. *See supra* Section I.A.

243. *Cf.* LISTOKIN, *supra* note 17, at 168–70 (discussing how policies need to balance these tradeoffs).

might change overall economic efficiency by fundamentally affecting the labor supply, for example—thus underscoring the benefits of preventing a recession from both a static and dynamic perspective.[244]

The history of bank runs and banking regulation suggests that society frequently determines that the benefits of crisis prevention or mitigation policies exceed their costs.[245] Although these calculations are indeed empirical matters, it is quite unlikely that the transaction and friction costs imposed on some actors in the economy (e.g., depositors) do not outweigh the significant costs of a financial crisis,[246] as analyses of similar policies have found.[247] Although there are legitimate concerns about fairness of the distributions of benefits and burdens at an individual level, that is not a reason to reject the Doctrine outright; it is merely a reason to complement the Doctrine with policies that re-distribute its costs and benefits in a fair manner (e.g., tax transfers or judicial remedies).

IV. THE DOCTRINE CONTEXTUALIZED AND COURTS AS MACROECONOMIC POLICYMAKERS

As we have seen, there are some systemic vulnerabilities that are neither covered by proactive preventative regulation (e.g., traditional banking regulation) nor redressable through executive or legislative reactive measures (e.g., emergency lending). This Part will systematically assess the Doctrine against traditional policies and policy actors that could potentially respond to those systemic vulnerabilities, stressing the Doctrine's comparative advantages over those traditional policies and discussing how these unique features would complement our existing policy toolkit.

The Part will proceed in three sections. Section A will examine how the

244. *See* Danny Yagan, *Employment Hysteresis from the Great Recession*, 127 J. POL. ECON. 2505 (2019), https://doi.org/10.1086/701809 (finding that a 1-percentage point-larger 2007-2009 local unemployment shock caused working age individuals to be 0.4 percentage points less likely to be employed at all in 2015); LISTOKIN, *supra* note 17, at 70–72 (discussing the hysteresis caused by the Great Recession).

245. *See supra* Section III.D (discussing the government's public policy against bank runs).

246. *See supra* Part II for a simplified model of bank runs and financial crises.

247. *See* Bruce C. Greenwald & Jeremy C. Stein, *Transactional Risk, Market Crashes, and the Role of Circuit Breakers*, 64 J. BUS. 443 (1991) (developing a model analyzing how circuit breakers could have allowed for enhanced price discovery and increased liquidity before the 1987 crash). *See* INT'L ORG. OF SEC. COMM'NS, REPORT ON TRADING HALTS AND MARKET CLOSURES 19–21 (2002), http://www.iosco.org/library/pubdocs/pdf/IOSCOPD138.pdf [https://perma.cc/HC6A-DTA7] (noting that there is mixed empirical evidence on the costs and benefits of different trading suspension mechanisms).

flexible and broad scope of applicability of the public policy doctrine means that the Doctrine can address vulnerabilities that existing and feasible new policy tools are incapable of covering. We will then discuss the relatively fast speed at which the Doctrine can be implemented, a crucial advantage in responding to rapidly escalating panics in Section B. Section C will review how, from a comparative institutional perspective, action by the courts brings along implementation and fit advantages over other policy alternatives.

A. Flexibility and Scope

Perhaps most importantly, the doctrine of public policy and its equitable contours grant policymakers a broad scope of action that is lacking under current regulatory options, which are constrained by their rigid legal frameworks and functional particularities and have thus fallen behind adequately covering innovative or "opaque" instruments. As a result, the Doctrine could act as an important gap-filling measure when traditional regulatory approaches prove incomplete, inadequate, or inconsistent, giving policymakers an effective tool to redress a liquidity crisis and a stopgap measure while they implement other policies.

Consider the salient case of stablecoins—an increasingly important category of digital asset—which, as we discussed in Section I.C., are considered by regulators systemically important but are inadequately regulated. Currently, one of the main problems vexing regulators is jurisdiction and the potential for the extraterritorial application of domestic law.[248] Who exactly gets to regulate the digital world? Regulatory nexus could be established based on, for example, the legal location of the assets, the place of incorporation of the financial entity, or the residence of the

248. *See, e.g.*, John Breslin et al., *Crypto-Assets - Regulation and Common Law: Where Are We Now and What Is the Direction of Travel?* 37 J. INT'L BANK. L. & REGUL. 231 (2022) (surveying the patchy and diverging regulatory frameworks across the European Union, the United Kingdom, Liechtenstein, Switzerland, and the United States and concluding that the current regulatory architecture fosters "inconsistency, forum-shopping and complexity" and that a "broadly uniform international directive is required"); Freya (Fangheng) Zhao, *Initial Coin Offerings and Extraterritorial Application of U.S. Securities Laws*, 139 BANKING L.J. 174, 183 (2022) (examining the S.E.C.'s extraterritorial application of U.S. securities law regarding ICOs and stating that "the ICOs' efforts to avoid the jurisdiction of the U.S. securities laws have mostly turned out to be futile" because the "SEC is not shy about reaching beyond the U.S. water's edge to regulate offshore ICOs, as evidenced by its investigation of the DAO and the actions against PlexCorps, Block.one, Telegram, and Ripple"); Tulip Trading Ltd. v. Bitcoin Ass'n for BSV [2022] EWHC (Ch) 667 (Eng.) (deciding whether an English court has jurisdiction over a Seychelles company with ties to England and determining whether the Seychelles company is resident or domiciled in England).

parties.[249] As such, a single transaction might face regulatory overlaps (or regulatory gaps), as different countries take different approaches to regulatory nexus.

In addition, countries are currently adopting divergent regulatory regimes to advance divergent aims (e.g., lax regulation aimed at attracting the crypto industry, like El Salvador,[250] or overly restrictive regulation aimed at protecting consumers, like New York State[251]). The lack of uniformity as to the scope and content of regulation thus results in a patchy, inconsistent, and manipulable regime of preventative or proactive regulation.

Further, in a crisis, traditional reactive or response regulatory tools might not be effective because of their functional or legal rigidity and jurisdictional constraints. Common and previously used regulatory tools would be unavailable to stop a run on certain stablecoins. First, unlike with traditional bank deposits, stablecoins are not covered by deposit insurance. Second, the Federal Reserve's powers, although broad in an emergency, would not be sufficient to stop a run. Stablecoin issuers are not banks, and therefore are not eligible for lender-of-last-resort measures that other financial institutions might fall back on in times of limited liquidity.[252] The Fed also does not have the power to provide liquidity to and stabilize the

249. *See, e.g.*, *Tulip Trading*, EWHC 667.

250. Guided by its pro-crypto President, Nayib Bukele, El Salvador is seen as one of the most "crypto-friendly" jurisdictions. The country has declared Bitcoin legal tender, bought significant amounts of Bitcoin as part of its currency reserves, and sought to create a "Bitcoin City." *See* Rowan Moore, *Crypto Is Starting to Lose Its Cool - Just Look at El Salvador*, THE GUARDIAN (May 21, 2022, 10:00 AM), https://www.theguardian.com/commentisfree/2022/may/21/bitcoin-losing-its-cool-look-at-el-salvador [https://perma.cc/5CF2-EHSW].

251. New York State has been at the forefront of the aggressive regulation of cryptocurrencies. After an investigation by the New York State Attorney General found similar illegal activities to the ones found by the CFTC, the Attorney General's Office practically forbade Tether from selling to New York State residents—a stronger move than the one taken by the CFTC. Press Release, N.Y. Atty. Gen., Attorney General James Ends Virtual Currency Trading Platform Bitfinex's Illegal Activities in New York (Feb. 23, 2021), https://ag.ny.gov/press-release/2021/attorney-general-james-ends-virtual-currency-trading-platform-bitfinexs-illegal [https://perma.cc/K72P-BYX5]; *see also supra* note 85 (describing the CFTC's investigation).

252. *See* 12 U.S.C. § 347b (2020) (limiting advances to individual member banks under the Fed's 13B powers). According to the often-cited Bagehot "principle," in liquidity crises, the Fed should "(1) lend as widely as possible; (2) against good collateral; and (3) at a high rate of interest." *See* Eric A. Posner, *What Legal Authority Does the Fed Need During a Financial Crisis?*, 101 MINN. L. REV. 1529, 1533 (2017). Apart from not being eligible for lending, restrictions on the Fed's authority—namely its inability to lend on an unsecured basis under section 10B of the Federal Reserve Act—would likely ensure that as a practical matter these loans would not be available to stablecoin issuers.

price of stablecoins by engaging in open-market transactions, as these assets are outside the scope of authority to engage in open-market operations.[253] Even the Fed's broad lending emergency powers under section 13(3) of the Federal Reserve Act,[254] through which it provided significant liquidity to systemically important non-banks during the 2008 financial crisis (e.g., AIG),[255] are unavailable after post-Great Recession restrictions on emergency lending.[256] Similarly, powers traditionally used by the Treasury to stop a run or to provide last-minute liquidity to a specific market are likely inadequate to stop a bank run on stablecoins.[257] Third, bankruptcy is also not

253. *See* Federal Reserve Act § 14, 12 U.S.C. 348a, 353–359 (generally limiting open-market operations to transactions in assets like gold, governmental obligations, and certain bills of exchange).

254. 12 U.S.C. 343 (2020).

255. *See* GEITHNER, *supra* note 133, at 246; Starr Int'l Co. v. United States, 856 F.3d 953, 959–60 (recounting that the government invoked section 13(3) to stabilize AIG, but finding that it exceeded its powers in doing so).

256. The original version of section 13(3) allowed the Fed to lend to "any person" in "exceptional and exigent circumstances," for example, AIG; however, since Dodd-Frank, the Fed is not allowed to lend to "any person" and must make any credit facility or program of "broad-based eligibility." *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376, 2113 (2010); Posner, *supra* note 252, at 1575–78 (criticizing the narrowing of the Fed's powers).

These powers were recently invoked by the Fed to provide additional liquidity and credit to certain sectors of the economy during the early days of the pandemic. *See* Press Release, Bd. of Governors of the Fed. Rsrv., Federal Reserve Announces Extensive New Measures to Support the Economy (Mar. 23, 2020), https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm [https://perma.cc/964D-387V]. Subsequent restrictions on the Fed's section 13(3) powers merely restricted its ability to re-deploy programs or facilities funded by the Coronavirus Aid, Relief, and Economic Security (CARES) Act. 12 U.S.C. § 343(3) (2020). As such, it should not further restrict the Fed's powers to start *new* programs. *See* Douglas Landy, *Unlucky: Do the Recent Changes to the Federal Reserve's Powers Under Section 13(3) of the Federal Reserve Act Inhibit Future Action?*, WHITE & CASE (Jan. 7, 2021), https://www.whitecase.com/publications/alert/unlucky-do-recent-changes-federal-reserves-powers-under-section-133-federal [https://perma.cc/A6A4-8BGE].

257. For example, its powers under the Exchange Stabilization Fund to engage in open-market transactions, although broad, require that the objective of the transaction be stabilizing the value of the *dollar* vis-à-vis the purchased asset—not the opposite. As such, open market transactions meant to merely stabilize the value of certain assets would be outside of Treasury's authority. *See* Posner, *supra* note 252, at 1557–58 (discussing the questionable legal grounds for Treasury's purchases of money-market funds during the 2008 financial crisis). Treasury's additional authority under the Emergency Economic Stabilization Act (EESA), Pub. L. 110-343, 122 Stat. 3765 (Oct. 3, 2008), would similarly not seem to cover these transactions, as its unclear stablecoin issuers are "financial institutions" covered under the statute, *cf.* Posner, *supra* note 252, at 1557–60 (discussing how Treasury exceeded limitations on its EESA authority by lending to GM and Chrysler).

an option, as it is rarely an adequate initial response to an escalating panic.[258]

The Doctrine would thus be a crucial gap-filler responsive measure in a stablecoin crisis, for example. Despite stablecoins being a relatively novel invention, a traditional contract relationship—analogous to that of our Bank and Depositor—still exists between the issuer and the tokenholder.[259] Accordingly, the Doctrine could work to stop redemptions and withdrawals in the same way that it would in a more traditional bank-run context, regardless of how "technologically revolutionary" the underlying instrument is. Again, the Doctrine could work either through an actual lawsuit or through a change in depositors' expectations due to the Doctrine's credible application, preventing a run even in the absence of a lawsuit.

Traditional response mechanisms are constrained by clear territorial limitations or political considerations; however, a court could apply (or, importantly, could be foreseen to apply) the Doctrine in a wide set of circumstances. Personal jurisdiction is likely, as presumably the run is effectuated partly by citizens of the state in which a bank is seeking to apply the Doctrine or in a state where its assets are located. Subject-matter jurisdiction should not be an obstacle either, because state courts like New York's State Supreme Court are courts of general jurisdiction,[260] and federal courts would presumably have diversity jurisdiction over the action.[261]

Traditionally, most financial relationships were governed by New York or Delaware law,[262] solidly supporting the application of the Doctrine to

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258. *See* William C. Dudley, President & Chief Exec. Officer, Fed. Rsrv. Bank of N.Y., Principles for Financial Regulatory Reform, Remarks at the Princeton Club of New York, New York City (Apr. 07, 2017), https://www.newyorkfed.org/newsevents/speeches/2017/dud170407 [https://perma.cc/7ZDK-J6DM] ("Put simply, in today's legal and regulatory regime, there is a large potential liquidity gap. There is not a credible liquidity backstop for a broker-dealer in bankruptcy."). Moreover, bankruptcy is definitionally an over-broad policy response, as it would modify all or even most of the Bank's financial obligations—much more than the Doctrine would. Additionally, bankruptcy law's exceptions to automatic stays and "safe harbor" provisions for certain financial instruments could become "loopholes" under which panicked creditors could start or amplify a run. *See, e.g.*, Morrison et al., *supra* note 158.

259. That is the case for most stablecoins, including some stablecoins that are "on-chain," as their protocols are designed by, and in times of crises managed by, the token issuers. *See* discussion *supra* note 104.

260. N.Y. CONST. art. VI, § 7(a) ("The supreme court shall have general original jurisdiction in law and equity and the appellate jurisdiction herein provided.").

261. *See* 28 U.S.C. § 1332(a) (providing conditions for diversity jurisdiction in federal court). These disputes often involve parties in different locations (although complete diversity might present a problem in some suits) and amounts much greater than the $75,000 amount in controversy requirement. *See id.*

262. *See, e.g.*, Eisenberg & Miller, *supra* note 155.

those contractual relationships.[263] That being said, some novel instruments have started to choose the law of other jurisdictions (e.g., British Virgin Islands[264] or Hong Kong[265]), and to require arbitration of any disputes. These changes notwithstanding, the Doctrine should remain an applicable alternative. First, under the law of both Hong Kong[266] and the British Virgin Islands (BVI) (and that of many other former-British common law jurisdictions),[267] illegal contracts, which include contracts against public policy, are not enforceable. As such, in applying the governing law to the contract, an arbitral tribunal could provide an initial backstop to the run by refusing an award under the public policy doctrine, in alignment with the Doctrine. [268] Second, even if the arbitral panel issued an award that would further fuel the bank run in contravention of public policy, arbitral awards need to be enforced *somewhere*. When presented with an award, a court could refuse its recognition or enforcement if doing so would contravene the forum jurisdiction's public policy.[269] As a result, for example, even if an

263. *See supra* Section III.B (describing New York and Delaware case law).

264. For example, Tether's terms of service are governed by British Virgin Islands' law. *See Terms of Service*, *supra* note 113.

265. Binance USD, the third largest stablecoin (after Tether and USD Coin), is registered in the Cayman Islands, yet its contractual relationships are covered by Hong Kong law. *See Binance Terms of Use*, BINANCE § X(2) (Feb. 8, 2023), https://www.binance.com/en/terms [https://perma.cc/F7PE-L2U9].

266. *See* MICHAEL J. FISHER & DESMOND G. GREENWOOD, CONTRACT LAW IN HONG KONG 328–29 (2007).

267. *See, e.g.*, Alex Potts, Richard Evans, & Norman Hau, *Illegality as a Defence Under Cayman Islands, British Virgin Islands, and Bermuda Law: A Comparison with English Law and Hong Kong Law*, CONYERS (July 2021), https://www.conyers.com/publications/view/illegality-as-a-defence-under-cayman-islands-british-virgin-islands-and-bermuda-law-a-comparison-with-english-law-and-hong-kong-law/ [https://perma.cc/HVA2-835K] (noting that the U.K.'s approach on the defense of public policy or illegality has extended to Bermuda and the Cayman Islands).

268. For example, an arbitral tribunal constituted in Hong Kong deciding a claim against Binance USD would do so under Hong Kong International Arbitration Centre (HKIAC) rules, which provide that the tribunal shall apply the law of the contract in resolving the dispute. *See* H.K. INT'L ARB. CTR., 2018 HIAC ADMINISTERED ARBITRATION RULES § 36.1, at 42 (2018), https://www.hkiac.org/sites/default/files/ck_filebrowser/PDF/arbitration/2018_hkiac_rules.pdf [https://perma.cc/QDQ8-EPKR]. That would, in turn, require that a tribunal consider whether enforcing the contract is illegal under Hong Kong law before issuing an award on the contractual dispute.

269. The New York Convention instructs arbitral tribunals to respect public policy by allowing contracting states to refuse to recognize or enforce an award that contravenes the contracting state's public policy. Convention on the Recognition and Enforcement of Foreign Arbitral Awards art. V, ¶ 2(b), *opened for signature* June 10, 1958, 330 U.N.T.S. 3, 42

arbitrator in Hong Kong issued an arbitral award against Binance, if a party sought to enforce it in New York a court could refuse enforcement as violative of public policy pursuant to the Doctrine.

The Doctrine's wide scope of applicability—due to its legal groundings in the fundamental but broad public policy exception—makes it an essential response alternative in a policymaker's toolkit, even in addressing panics caused by exotic or unregulated instruments. Even exotic instruments operating in cyberspace—and their even-more-exotic future progeny—require contracts to work.

B. Speed

Unsurprisingly, in times of crisis, response speed is of the essence,[270] especially if the response seeks to stop a risk from spreading and systemically endangering the whole financial system,[271] or if the debt contracts at issue have very short terms (e.g., repo contracts, convertible notes).[272] A considerable advantage of the Doctrine is its implementation by the courts, giving it a general institutional advantage in speed over measures implemented by the executive or legislative branches, which tend to have slower responses.

Any policy directly changing the enforcement of contracts would likely need to be enacted as a statute, therefore requiring congressional action.[273]

(entered into force June 7, 1959). U.S. courts have recognized the public policy exception, although they have sought to construe it narrowly. *See* Parsons & Whittemore Overseas Co., Inc. v. Societe Generale De L'Industrie Du Papier (RAKTA), 508 F.2d 969, 974 (2d Cir. 1974). Commentators, however, differ on whether a narrow construction is apposite. *See, e.g.*, Leonard V. Quigley, *Accession by the United States to the United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards*, 70 YALE L.J. 1049, 1070–71 (1961).

270. *See, e.g.*, FRIEDMAN & SCHWARTZ, *supra* note 143, at 167 (attributing the success of the 1907-1908 restrictions on bank deposits to the fact that they occurred early, unlike the 1929-1933 restrictions); Dudley, *supra* note 258 (noting how, for example, the bankruptcy regime would be too slow to stop a liquidity crisis from unfolding and spreading).

271. For an account of the importance of fast response mechanisms and the time lags involved in responding to a run, see GEITHNER, *supra* note 32, at 514–19. For a brief summary of the rapid succession of events that started the Great Recession, see Nick Mathiason, *Three Weeks That Changed the World*, THE GUARDIAN (Dec. 27, 2008, 7:01 PM), http://www.theguardian.com/business/2008/dec/28/markets-credit-crunch-banking-2008 [https://perma.cc/Y8Q3-KL27].

272. *See* Dudley, *supra* note 258.

273. *See* discussion on constitutional limitations *supra* Section III.D.

As experienced during the Great Recession,[274] political paralysis and excessive partisan disputes can affect a policy's effectiveness (by watering down the law due to political compromises), and its enactment (due to the use of procedural measures to slow a bill's passing).[275] This is especially true in times of increased polarization, when not even a party controlling every level of government can seem to implement a legislative agenda.[276] Even absent political disfunction, congressional action often requires studying, drafting, debating, and modifying a law, frequently resulting in a considerable response lag to the crisis at hand.[277] Moreover, when it comes to economic policy, the legislature's policy responses are necessarily slow because they are not self-implementing—laws, especially economic programs, are interpreted, implemented, and executed by executive agencies.[278] Consequently, congressional action is not an ideal mechanism to respond to a rapidly unfolding crisis.

Executive responses (the most likely actor in a crisis)[279] would similarly suffer from time delays. First, any executive action affecting the obligation of contracts would be likely unconstitutional,[280] and thus vulnerable to lawsuits seeking to enjoin it—especially from a Court hostile to expansive executive action. Moreover, if close to an election, political calculations might mean the Executive might hesitate in responding as fast as necessary, especially if the actions in question were politically controversial.[281] Finally,

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274. *See, e.g.*, Josh Bivens, *Why Is Recovery Taking So Long—and Who's to Blame?*, ECON. POL'Y INST. (Aug. 11, 2016), http://www.epi.org/publication/why-is-recovery-taking-so-long-and-who-is-to-blame/ [https://perma.cc/5QF3-F77C] (arguing that Congressional Republicans are at fault for preventing and delaying local, state, and federal governments to aggressively address the Great Recession through fiscal policy).

275. *See generally* STEVEN S. SMITH, JASON M. ROBERTS, & RYAN J. VANDER WIELEN, THE AMERICAN CONGRESS (2011) (describing how bills are getting increasingly longer, more technical, and are harder to pass given heightened partisanship and the use of procedural moves); LISTOKIN, *supra* note 17, at 37–38 (discussing disadvantages of implementing fiscal policy through the legislature). For a look at Congress' responsibility for the 1980's "junk bond" crisis, see ALIBER & KINDLEBERGER, *supra* note 10, at 154–56.

276. *See, e.g.*, Edward-Isaac Dovere, *GOP Wonders: Can It Get Anything Done?*, POLITICO (Mar. 25, 2017), http://www.politico.com/story/2017/03/republicans-health-care-failure-agenda-future-236495 [https://perma.cc/6AD8-TFHR].

277. *See* LISTOKIN, *supra* note 17. Listokin does note, for example, that this problem might be less significant in parliamentary systems than in the United States. *Id.*

278. *See, e.g.*, Jonathan Macey, *Executive Branch Usurpation of Power: Corporations and Capital Markets*, 115 YALE L.J. 2416 (2006).

279. *See* Posner & Vermeule, *supra* note 18.

280. *See supra* Section III.D.

281. Tim Geithner, ex-Secretary of the Treasury, noted the difficulty of acting in times of

even if the Executive had the authority to act and acted quickly through an executive order, this order would presumably be directed at bureaucratic administrative agencies, which would then have to interpret and devise specific policy mechanisms to enforce the President's order, potentially delaying its implementation and increasing the chance of policy failure. This is also the case with the Federal Reserve, which—although ostensibly an agency that is impermeable to politics and independent of fickle political pressures—has consistently acted in a largely political manner, seeking to avoid legislative pushback or censure.[282]

Judicial action is comparatively less prone to suffer from these issues. First, the courts are ideally positioned to respond to a bank run, given that both the Bank and its Depositors would look for a court as an *initial* forum for resolving a dispute. Consequently, courts do not face the information lags that other branches would face in being alerted to a specific problem in the financial system. Secondly, although it would be naïve to argue that the courts are not influenced by political considerations, the judiciary is less affected by them relative to other branches as a structural matter—political pressures are less direct, coalition compromising less necessary, and partisan abuses of procedural mechanisms less salient, therefore potentially reducing the effect of politics on the speed of the response. Finally, the courts have the institutional knowledge required to quickly respond to emergencies without the use of excessive bureaucratic mechanisms—courts order these types of remedies frequently when issuing preliminary injunctions, temporary restraining orders, or bankruptcy stays.

Some might point out that, in some situations, *actually* going to court to enforce a right would not promptly follow a panic. In these situations, the argument goes, the Doctrine would be too little too late—by the time the parties are in front of a judge, the run would have already destabilized the Bank. Remember, however, that the Doctrine should work even before a court has actually entered judgment by changing Depositors' expectations. When the application of the Doctrine becomes credible (e.g., upon a Bank's well-supported reply to Depositors' claims for a withdrawal, indicating the Bank's intent to seek the application of the Doctrine), a panic should cease,

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financial crisis: "Herein lies the paradox. In a brutal financial crisis like ours, actions that seem reasonable—letting banks fail, forcing their creditors to absorb losses, balancing government budgets, avoiding moral hazard—only make the crisis worse." Moreover, "the actions necessary to ease the crisis seem inexplicable and unfair." TIMOTHY F. GEITHNER, STRESS TEST: REFLECTIONS ON FINANCIAL CRISES 509 (2014).

282. *See generally* SARAH BINDER & MARK SPINDEL, THE MYTH OF INDEPENDENCE: HOW CONGRESS GOVERNS THE FEDERAL RESERVE (2017).

because each Depositor knows that other Depositors will not be able to get their deposits out before them. This is not a theoretical supposition—this is how deposit insurance has stopped runs on banks.[283] Moreover, recent runs have shown that depositors are quick to seek court action and a judge inclined to apply the Doctrine could quickly prevent a run by signaling that the Doctrine might apply.[284]

C. Implementability and Fit

By enlisting the courts as a macroeconomic agent, the Doctrine has another comparative advantage over more traditional policy responses—a judicial decision applying the Doctrine would face fewer implementation and fit issues than hypothetical alternative actions by other actors.

Unlike judicial decisions, congressional and executive policies face significant implementation problems even after these bodies have deliberated and agreed on set policies.[285] Even if Congress overcame its frequent dysfunction and quickly passed a law enacting the Doctrine, the effective implementation of the Doctrine would still hinge on the cooperation and assistance of other actors (e.g., the Executive and the courts), thereby increasing the likelihood of institutional conflict leading to implementation failure. Congressional and executive actions are also vulnerable to cooption or manipulation by an agency, potentially reducing policy effectiveness.[286] A court would not face such implementation drawbacks in issuing a decision

283. *See, e.g.*, discussions *supra* notes 4, 135, 209.

284. A class-action lawsuit was filed less than ten days after speculations of a panic began on FTX. *See* Jody Godoy, *FTX's Bankman-Fried, Tom Brady and Other Celebrity Promoters Sued by Crypto Investors*, REUTERS (Nov. 17, 2022, 3:58 AM), https://www.reuters.com/legal/ftx-founder-bankman-fried-sued-us-court-over-yield-bearing-crypto-accounts-2022-11-16/ [https://perma.cc/X72H-SGVH].

285. Unlike most comparative institutional analyses, I will not discuss a "market solution," as that would either involve banks cooperating by themselves or "letting the fire burn itself out"—both equally unattractive options. *See* FRIEDMAN & SCHWARTZ, *supra* note 2, at 305 n.4 (discussing how J.P. Morgan failed in his attempt to get a bank pool to stop the panic in 1929); ALIBER & KINDLEBERGER, *supra* note 10, at 240–45 (discussing the unattractive option of benign neglect).

286. That is especially the case with laws that are passed during financial crises, which tend to be broadly and vaguely worded, giving a lot of discretion to administrative agencies that might be victims of agency capture. *See* Skeel, *supra* note 18, at 637; *see also* Matthew D. McCubbins, Roger G. Noll & Barry R. Weingast, *Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies*, 75 VA. L. REV. 431 (1989); Jonathan R. Macey, *Organizational Design and Political Control of Administrative Agencies*, 8 J.L., ECON. & ORG. 93 (1992).

between two parties.[287]

Additionally, a court has an institutional advantage on policy fit between the problem and the governmental response. Unlike judicial decisions, which adjudicate issues between two parties with limited precedential scope, avoiding over- or under-enforcement problems in statutes or rulemaking is a herculean (and time-intensive) task. By definition, laws are categorical and general in their policy determinations,[288] proscribing or prescribing a *set* of actions rather than a *specific* action. A vague and generally applicable policy (e.g., "no contract that would fuel a bank run will be enforced in times of crisis") instituted by a legislature or by an agency would be so open to interpretation that it would cause over- and under-enforcement issues. Under-enforcement would reduce effectiveness—banks would still be forced into insolvency by market panics.[289] Over-enforcement, on the other hand, might be constitutionally problematic,[290] incentivize risky behaviors, and significantly increase moral hazard issues.[291] Additionally, over-enforcement could reduce overall confidence in private parties' ability to contract without excessive government intervention, and could even fuel financial instability by introducing unpredictability into the general market as concerns over the enforcement of contracts broaden. In light of these

287. As Komesar argues, it is true that as complexity and numbers increase, the courts might be less attractive from an institutional choice perspective, due to courts' limited resources. KOMESAR, LAW'S LIMITS, *supra* note 18, at 52. However, these general concerns are inapposite in the situation this Article envisages for the application of the Doctrine. If a court were applying the Doctrine at an early stage of a run, the number of depositors and the complexity of their claims would be low, therefore not presenting an intractable problem for the courts—certainly not a problem bigger than class action litigation, which courts have experience handling. Moreover, at that stage of a run, other actors (e.g., administrative agencies, Congress) are not well-suited to resolve the dispute, as a decision might be politicized or escalated into a larger discussion about "bailouts." *See, e.g.*, ALIBER & KINDLEBERGER, *supra* note 10, at 246 (discussing how concerns about being called "Mr. Bailout" motivated Secretary of Treasury Paulson to allow Lehman Brothers to fail, escalating the 2008 crisis). At that stage, given their relative competence in resolving this kind of dispute and insulation from the political process, the courts would seem to be a comparatively good actor to implement a policy stopping a run.

288. *See* LON L. FULLER, THE MORALITY OF LAW 34 (1977).

289. *Cf. supra* note 138 (discussing how insufficient uptake of liquidity failed to rescue the repo market); FRIEDMAN & SCHWARTZ, *supra* note 143, at 167 (comparing the 1907-1908 bank runs and the 1929-1933 runs and finding that the restrictions of payments were successful in 1907-1908 and not in 1929-1933 because they occurred early—rather than late—in the crisis, preventing widespread bank failures).

290. *See supra* Section III.D (discussing of the constitutional limitations on a policy potentially impairing the obligation of contracts).

291. *See* GORTON, *supra* note 17, at 134–50.

potential problems, a policy with a targeted application is *especially* advantageous during crises.[292]

A judicial decision is comparatively better at measuring the right policy fit. A court's "policy" decisions are more flexible and subject to discretion[293]—they can be easily tailored to a *specific* set of often unprecedented facts (such as a bank/specific financial instrument combination[294])—and its decisions' precedential effect can be constrained in the drafting process. Courts have experience in drafting opinions with an eye to ensuring the right fit and breadth of precedential effect and, consequently, they are comparatively the most competent[295] and legitimate[296] actor to implement these measures.[297] Given how extraordinary and potentially wide-ranging the suspension of the convertibility of debt contracts could be, erring on the side of an actor with a capacity for effective implementation and tailored policymaking is a wise choice.

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292. The difficulty of right-sizing governmental responses to financial crises provides an apt analogy, with Obama under-responding and Biden over-responding (at least according to Summers). *See* Martin Wolf, *Larry Summers: 'I'm Concerned That What is Being Done is Substantially Excessive,'* FIN. TIMES (Apr. 12, 2021), https://www.ft.com/content/380ea811-e927-4fe1-aa5b-d213816e9073 [https://perma.cc/8R4A-N3VE] (summarizing the disagreement).

293. Moreover, they are relative to the other two branches shielded from the political process and relative to administrative agencies shielded from systemic bias. *See* KOMESAR, LAW'S LIMITS, *supra* note 18, at 37–39.

294. The potential ability to stop runs from affecting all markets or several banks is essential to stopping the spread of runs (because in the absence of *potentially* expansive policies creditors do not have an incentive to run to the next market looking for liquidity) and fire-sales.

295. New York and Delaware courts often deal with complex commercial contractual disputes. *See* discussion *supra* note 155. Courts need not be specialized to be able to competently adjudicate complex or technical disputes. *See* Jed Rakoff, *The Eleventh Annual Albert A. Destefano Lecture on Corporate, Securities & Financial Law at the Fordham Corporate Law Center: Are Federal Judges Competent? Dilettantes in an Age of Economic Expertise*, 17 FORDHAM J. CORP. & FIN. L. 1 (2012).

296. Courts are likely to have the most legitimacy vis-à-vis the parties, as they would be the usual forum for adjudicating contractual disputes and provide an optimal venue for rehearsing the parties' arguments.

297. *See, e.g.*, LISTOKIN, *supra* note 17, at 88–91 (discussing how the European Court of Justice finely crafted a judicial decision rejecting a seemingly legitimate challenge to an emergency measure taken by the European Central Bank (ECB) in response to the Great Recession, but narrowing the decision so as to maintain some limits on the ECB's monetary policy powers).

CONCLUSION

Our modern financial system remains vulnerable to bank runs. Recent developments have underscored how traditional policy tools would be unable to prevent a run on innovative crypto-era instruments, such as stablecoins, and are likely to prove ineffective in preventing runs on many of the future instruments that technologists and financiers will inevitably create. In light of these evolving yet ever-present vulnerabilities, this Article advanced a forgotten approach to runs—the selective non-enforcement of debt contracts in times of crisis. The Doctrine is a proven, effective, legally solid, easily implementable, and readily available alternative that could help policymakers stop a bank run from triggering or amplifying a financial crisis.

More broadly, an exposition of the Doctrine, and how it was forgotten by experts and policymakers, adumbrates how several tenets of our contemporary thinking on bank runs and financial stability—for example, our recalcitrant focus on preventative, rather than responsive, measures or on executive and congressional, rather than judicial, action—should be reconsidered if we are to stop the crypto runs of today and, perhaps more importantly, the runs on the novel assets of tomorrow.