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The Private Law of Stablecoins

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The Private Law of Stablecoins

Kara Bruce,* Christopher K. Odinet,** & Andrea Tosato***

Stablecoins are one of the cornerstones of the crypto world. They've attracted significant attention from major players over the past few years, ranging from Wall Street to kitchen-table investors, and even the White House. As a less volatile alternative to crypto-assets like bitcoin, stablecoins have the potential to change the way we make payments, unlock the groundwork needed for more blockchain-based applications, and even reorient the economy toward private money. But how stable are these stablecoins, really? Can they be relied upon in the way their many proponents claim? And how much of the popular beliefs about stablecoins match their realities? That's where we come in. In this Article, we show, for the first time, just how unreliable and unstable this latest crypto innovation really can be.

This Article makes two important contributions to the legal literature. First, the few and nascent works on stablecoins provide an imperfect and overly simplistic descriptive account of this market. Here, we explain the diversity of business models and issuer configurations that characterize the stablecoin landscape. But setting forth this taxonomy is more than merely

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upgrading descriptive accounts—creating this world map is critical to understanding the various cracks in the stablecoin market and the ways coinholders are likely to suffer harm when a stablecoin collapses.

Second, through our novel study of key underlying documents, such as stablecoin-issuer corporate records, audit reports, protocol white papers, and user terms of service, this project reveals just how vulnerable stablecoin holders really are as they place their hopes (and sometimes their life savings) in this opaque and fragile market, rife with contradictory claims. In doing so, we break new ground by providing the first comprehensive private law analysis of stablecoins, including a menu of private ordering solutions aimed at creating transactional structures that would better protect stablecoin holders. By complementing the financial regulation and public law analysis in this nascent field, we lay the foundation for more inclusive and balanced normative solutions.

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INTRODUCTION

“*Stablecoins* are the future.”¹ They can serve as “a means to simplify and enable novel forms of exchange in the digital economy.”² If widely adopted, stablecoins “could serve as the basis of an alternative payments system oriented around new private forms of money.”³ Indeed, they resolve crypto’s “volatility problem” and “will unlock the groundwork needed for blockchain-based global payment systems.”⁴

At least, that’s the pitch.

Ever since Mark Zuckerberg announced in 2019 that Facebook would launch its own dollar-pegged digital currency *Libra*,⁵ politicians, market commentators, investors, and financial regulators have been in a craze over the promise and peril of the crypto-asset known as the *stablecoin*.⁶

1. Sean Stein Smith, *Bitcoin Payments Are Great, But Stablecoins Are the Future of Crypto—Visa Is Just the Beginning*, FORBES: DIGIT. ASSETS (Mar. 31, 2021, 7:12 AM), <https://www.forbes.com/sites/seansteinsmith/2021/03/31/bitcoin-payments-are-great-but-stablecoins-are-the-future-of-crypto--visa-is-just-the-beginning/?sh=55871cc312771> [https://perma.cc/HZR5-7GXX]; *Why Stablecoins Are the Future of Crypto*, INVESTING.COM (Mar. 15, 2021), <https://www.investing.com/news/cryptocurrency-news/why-stablecoins-are-the-future-of-crypto-2446560> [https://perma.cc/M7SD-FDZ8].

2. Douglas Arner et al., *Stablecoins: Risks, Potential and Regulation* 7 (Monetary & Econ. Dep’t, Bank for Int’l Settlements, BIS Working Paper No. 905, 2020), <https://www.bis.org/publ/work905.pdf> [https://perma.cc/2A6A-HBB3].

3. Governor Lael Brainard, *Private Money and Central Bank Money as Payments Go Digital: An Update on CBDCs*, Address at the Consensus by CoinDesk (May 24, 2021), <https://www.federalreserve.gov/newsevents/speech/brainard20210524a.htm> [https://perma.cc/HQ8A-C6XL].

4. Wayne Chang et al., *Stablecoins: Solving the Cryptocurrency Volatility Crisis*, O’REILLY (Apr. 25, 2019), <https://www.oreilly.com/content/stablecoins-solving-the-cryptocurrency-volatility-crisis/> [https://perma.cc/WW72-SZ7T].

5. Julia Boorstin, *Facebook Launches a New Cryptocurrency Called Libra*, CNBC (June 18, 2019, 11:12 AM), <https://www.cnbc.com/2019/06/17/facebook-announces-libra-digital-currency-calibra-digital-wallet.html> [https://perma.cc/H9SR-BQWV].

6. Brian Fung, *One of the Hottest Things in Cryptocurrency Right Now: Stablecoins*, WASH. POST (Nov. 1, 2018, 8:07 AM), <https://www.washingtonpost.com/technology/2018/11/01/one-hottest-things-cryptocurrency-right-now-stablecoins/> [https://perma.cc/RKP9-66MW].

Stablecoins are reliable,⁷ transparent,⁸ liquid,⁹ and democratizing¹⁰—they are the future.¹¹

None of this is actually true. While the market for stablecoins has doubtlessly exploded over the past few years,¹² those who invest, use, and place their faith in these coins almost certainly do not appreciate what’s going on behind the scenes. Using an original dataset of stablecoin terms of service and a distinctly private law-rooted methodology, this Article shows just how unreliable, non-transparent, and non-democratizing the existing stablecoin market really is and brings into sharp relief the precarious position of people dealing in these crypto-assets. Stablecoin holders will likely be surprised to discover that, in most cases, they have very limited rights against the issuers of these coins and the flimsiest of claims to their assets in the event of the issuer’s bankruptcy. Even worse, coinholders will be shocked to learn that, in some cases, there is either no identifiable issuer at all or no assets backing their stablecoin.¹³ As shown by the recent TerraUSD collapse,¹⁴ these “stable” crypto-assets can crumble overnight, leaving their holders with nothing more than worthless entries on a digital ledger.

7. See, e.g., *Gemini Dollar*, GEMINI, <https://www.gemini.com/dollar> [<https://perma.cc/LK4B-632J>] (“The 1:1 USD-backed stablecoin built by a secure, reliable, and regulated cryptocurrency exchange.”).

8. See, e.g., *Transparency*, TETHER, <https://tether.to/en/transparency/> [<https://perma.cc/4QUK-VTLR>].

9. See, e.g., Jeremy Fox-Green, *Liquidity Matters*, CIRCLE: USDC TRUST AND TRANSPARENCY (June 13, 2022), <https://www.circle.com/blog/usdc-trust-and-transparency-liquidity-matters> [<https://perma.cc/336J-XD86>] (“USDC is always redeemable 1 for 1 for US dollars. Any amount. Always. Period.”).

10. Stephen Stonberg, *Cryptocurrencies Are Democratizing the Financial World. Here's How*, WORLD ECON. F. (Jan. 22, 2021), <https://www.weforum.org/agenda/2021/01/cryptocurrencies-are-democratising-the-financial-world-heres-how/> [<https://perma.cc/K5VA-KHUF>].

11. Saeed Hassan, *Stablecoins Are the Future of Remittances, Says MoneyGram CEO*, BITCOINIST (May 2022), <https://bitcoinist.com/stablecoins-are-the-future-of-remittances-says-moneygram-ceo/> [<https://perma.cc/T7CE-8U7K>].

12. See *infra* Part II.

13. See *infra* Part III.

14. Andrew Ross Sorkin et al., *A Stablecoin ‘Death Spiral’*, N.Y. TIMES: DEALBOOK (May 12, 2022), <https://www.nytimes.com/2022/05/12/business/dealbook/terra-crypto-stablecoin.html> [<https://perma.cc/WP8B-7AGA>]; Krisztian Sandor & Ekin Genç, *The Fall of Terra: A Timeline of the Meteoric Rise and Crash of UST and LUNA*, COINDESK (Aug. 19, 2022, 10:20 AM), <https://www.coindesk.com/learn/the-fall-of-terra-a-timeline-of-the-meteoric-rise-and-crash-of-ust-and-luna/> [<https://perma.cc/JRE4-FVLA>]; Gian M. Volpicelli, *Terra’s Crypto Meltdown Was Inevitable*, WIRED (May 12, 2022, 7:26 PM), <https://www.wired.co.uk/article/terra-luna-collapse> [<https://perma.cc/5KR2-NLSQ>].

But what are stablecoins? These are digital assets that sit atop the same kinds of blockchain networks that support familiar crypto-assets, such as bitcoin, ether, and NFTs, but with one critical difference.¹⁵ The value of a stablecoin is tied to an ostensibly stable peg, such as a national currency, gold, or some other reference asset.¹⁶ This feature is what some proponents argue makes stablecoins less volatile than their more famous crypto cousins and, thus, superior for a range of financial/practical/commercial use cases.¹⁷ The most popular stablecoins in the world are pegged to the U.S. dollar.¹⁸ This means that one stablecoin should equal the value of one U.S. dollar. The mechanisms for holding this value steady vary markedly across the stablecoin landscape. For most of the leading stablecoins, however, holders can redeem their coins with the issuer for fiat currency.¹⁹ To make good on these redemption requests, stablecoin issuers hold reserves that they can quickly liquidate to meet redemption demand.²⁰ These consist of a mix of cash, treasury bonds, corporate bonds, secured loans, certificates of deposit, precious metals, commercial paper, and even other crypto-assets, among sundry other items.²¹ But the truth is, only some stablecoin issuers actually hold sufficient reserve assets to honor their redemption obligations.²² In many cases, assurances of stability and resiliency are more illusory than these issuers would have you believe. In fact, for some stablecoins, there is no issuer at all; rather, there is only automated software.²³

To date, the legal literature on stablecoins has centered around two goals. The first has been to give an accurate descriptive account of stablecoins, and the second has been to address the normative question of what kinds of public law solutions stablecoins might require. But these contributions have been

15. When capitalized, we refer to the Bitcoin network. When not capitalized, we refer to bitcoin as tokens.

16. See *infra* Section I.A.2.

17. See *infra* Section I.A.

18. See *infra* Section I.A.

19. See *infra* Part II (discussing the redemption rights provided by the leading stablecoin issuers).

20. See *infra* Section I.A.

21. See *infra* Section I.A.

22. See, e.g., Press Release, N.Y. Att’y 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-bitfinex-illegal> [<https://perma.cc/YFB8-578A>] (“The OAG’s investigation found that, starting no later than mid-2017, Tether had no access to banking, anywhere in the world, and so for periods of time held no reserves to back tethers in circulation at the rate of one dollar for every tether, contrary to its representations.”).

23. See *infra* Section I.A.

incomplete as to the first goal and have offered an unbalanced normative perspective as to the second.

On the one hand, the descriptive accounts are often overly simplistic and imperfect.²⁴ For example, some scholars writing on this topic have described all stablecoin issuers as “unregulated banks.”²⁵ We argue, however, that this assessment fails to appreciate the diversity which characterizes the stablecoin landscape. It does not adequately acknowledge that there is a distinction between *centralized* stablecoins, which are issued by a single, determinate entity, and *decentralized* stablecoins, which are controlled by a software that coinholders use at their own peril.²⁶ It also fails to appreciate that, even when there is a single entity issuing a stablecoin, the stabilization mechanism adopted to keep this stablecoin pegged to its reference asset might result in a structure and business model which is entirely different from that of banks.²⁷ Stablecoins that implement a dual-coin structure are a notable example.²⁸ Much of the rest of the legal literature consists of either short-form essays, practitioner-oriented writings, or articles that deal with stablecoins in other contexts, such as central bank digital currencies.²⁹

24. For the economics literature on stablecoins, see Lawrence Schmidt et al., *Runs on Money Market Mutual Funds*, 106 AM. ECON. REV. 2625, 2625–57 (2016); Gary B. Gorton & Jeffery Zhang, *Taming Wildcat Stablecoins*, 90 U. CHI. L. REV. (forthcoming 2022); Richard K. Lyons & Ganesh Viswanath-Natraj, *What Keeps Stablecoins Stable?* (Nat’l Bureau Econ. Rsch., Working Paper No. 27136, 2020), https://www.nber.org/system/files/working_papers/w27136/w27136.pdf [<https://perma.cc/5KK8-MBC2>]; Christian Catalini & Alonso de Gortari, *On the Economic Design of Stablecoins* (Aug. 5, 2021) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3899499 [<https://perma.cc/66UX-NDY4>]; Jean Barthelemy et al., *Stablecoins and the Real Economy* (Nov. 29, 2021) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3973538 [<https://perma.cc/X5BS-8K3B>].

25. Gorton & Zhang, *supra* note 24, at 6.

26. See *infra* Section I.A.

27. See *infra* Section I.A.

28. See *infra* Section I.A.

29. Marissa Lee, *Stablecoin: Yet Another Layer of Cryptocurrency Complexity*, 38 AM. BANKR. INST. J. 36, 36 (2019); Anastasia Melachrinou & Christian Pfister, *Stablecoins: A Brave New World*, 4 STAN. J. BLOCKCHAIN L. & POL’Y 264, 264 (2021); Ryan Clements, *Built To Fail: The Inherent Fragility of Algorithmic Stablecoins*, 11 WAKE FOREST L. REV. ONLINE 131, 131 (2021); Jess Cheng, *How to Build a Stablecoin: Certainty, Finality, and Stability Through Commercial Law Principles*, 17 BERKELEY BUS. L.J. 320, 320 (2020); Harrison Dent, *International Trade Law Concerns with China’s Digital Currency: How Sovereign-Issued Stablecoin Can Destabilize International Trade*, 51 GEO. J. INT’L L. 919, 919 (2020); Marco Dell’Erba, *Stablecoins in Cryptoeconomics: From Initial Coin Offerings to Central Bank Digital Currencies*, 22 N.Y.U. J. LEGIS. & PUB. POL’Y 1, 1 (2020).

On the other hand, the policy account—both in the U.S. and abroad—has too narrowly focused on public law.³⁰ The leading contribution comes from a report, known as the PWG Report, which was issued by the President’s Working Group on Financial Markets (“PWG”).³¹ The PWG report proposes regulations for both stablecoin issuers and crypto wallet providers.³² The most significant recommendation, however, is that Congress pass “legislation [that] limit[s] stablecoin issuance, and related activities of redemption and maintenance of reserve assets, to entities that are insured depository institutions.”³³ Essentially, the report recommends bringing stablecoin activities exclusively into the banking regulatory perimeter, thereby precluding nonbank companies (which are the current purveyors of stablecoins) from issuing stablecoins at all.³⁴ The noted financial regulation scholar Arthur Wilmarth supports this idea of imposing a public banking law regime on certain stablecoins—specifically those that are asset-backed and promise a par redemption.³⁵ But here again, the focus remains on the public law aspects of stablecoins.³⁶ Adopting a piecemeal approach, the current

30. For policy papers on stablecoins, see *Stablecoins: Implications for Monetary Policy, Financial Stability, Market Infrastructure and Payments, and Banking Supervision in the Euro Area*, EUROPEAN CENT. BANK (Sept. 2020), <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op247~fe3df92991.en.pdf> [<https://perma.cc/RT6P-46ZB>]; INVESTIGATING THE IMPACT OF GLOBAL STABLECOINS, G7 WORKING GROUP ON STABLECOINS (Oct. 2019), <https://www.bis.org/cpmi/publ/d187.pdf> [<https://perma.cc/QAU5-FF58>]; Arner et al., *supra* note 2; GLOBAL FINANCIAL STABILITY REPORT, INT’L MONETARY FUND 41–55 (Oct. 2021); Jon Frost et al., *An Early Stablecoin? The Bank of Amsterdam and the Governance of Money* (Monetary & Econ. Dep’t, Bank for Int’l Settlements, BIS Working Paper No. 902, 2020), <https://www.bis.org/publ/work902.pdf> [<https://perma.cc/5TX7-9ZZ9>].

31. Brian Barrett et al., *Stablecoins: Some Key Regulatory and Enforcement Initiatives of US Regulators*, JD SUPRA (Jan. 21, 2022), <https://www.jdsupra.com/legalnews/stablecoins-some-key-regulatory-and-9125561/> [<https://perma.cc/VV6V-8MND>]. The PWG consists of the Secretary of the Treasury, the head of the SEC, and the Chair of the CFTC.

32. *Id.*

33. REPORT ON STABLECOINS, PRESIDENT’S WORKING GRP. ON FIN. MARKETS, THE FED. DEPOSIT INS. CORP., & THE OFF. OF THE COMPTROLLER OF THE CURRENCY 16 (Nov. 2021), https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf [<https://perma.cc/RH2Z-D247>].

34. *Id.*

35. Arthur E. Wilmarth, *It’s Time To Regulate Stablecoins as Deposits and Require Their Issuers To Be FDIC-Insured Banks*, 41 BANKING & FIN. SERVS. POL’Y REP. NO. 2 at 1–20 (Feb. 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4000795 [<https://perma.cc/A937-VJBM>].

36. *See id.*; *see also Stablecoins*, *supra* note 31.

literature does not address comprehensively the unique private law issues of stablecoin transactions and the legal relationships they create (or don't).³⁷

This Article breaks new ground by providing the first comprehensive private law analysis of stablecoins. By complementing the financial regulation/public law analysis in this nascent field, we create the conditions for more inclusive and balanced normative solutions. In service to this end, our goal in this paper is two-fold. First, we offer a more complete and accurate description of the stablecoin market, which has attracted the attention of everyone from the White House to Wall Street to kitchen-table investors. The second—and more central aim—is to address (with solutions) the important question: what does it mean to own a stablecoin?

The timing for this project could not be more appropriate. For the past several years, the crypto market has been booming, with bitcoin's value reaching a high of \$67,000 per coin in the second half of 2021.³⁸ Non-fungible tokens (NFTs) of everything from a gif of a pop-tart cat with a rainbow tail to Twitter CEO Jack Dorsey's first tweet have sold for millions of dollars over the internet.³⁹ And the market capitalization for stablecoins has been growing by the billions.⁴⁰

But within the past six months, the ground has shifted. Crypto investments have recently plummeted by \$2 trillion.⁴¹ Several crypto service companies have faced financial distress and sought emergency loans to weather the

37. The closest research on point is a forthcoming paper by Adam Levitin that explores what would happen if a crypto exchange company entered bankruptcy proceedings. See Adam J. Levitin, *Not Your Keys, Not Your Coins: Unpriced Credit Risk in Cryptocurrency*, 101 TEXAS L. REV. (forthcoming 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4107019 [<https://perma.cc/V93L-98WD>]. However, this paper is about defining a crypto holder's rights as against an exchange company as to the crypto-asset itself. It does not address stablecoin holders' rights against a stablecoin company with respect to the reserve assets. See also Giuliano G. Castellano & Andrea Tosato, *Commercial Law Intersections*, 72 HASTINGS L.J. 999 (2021) (describing the legal phenomenon of "commercial law intersections" and highlighting the failures that occur when a piecemeal approach is adopted in regulating these areas of the law).

38. Megan DeMatteo, *Bitcoin Price History: 2009 to 2022*, TIME: NEXTADVISOR (June 9, 2022), <https://time.com/nextadvisor/investing/cryptocurrency/bitcoin-price-history/> [<https://perma.cc/H4JL-9AH8>].

39. Juliet M. Moringiello & Christopher K. Odet, *The Property Law of Tokens*, FLA. L. REV. (forthcoming 2022) (manuscript at 1) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3928901 [<https://perma.cc/58EZ-FH6S>].

40. See *infra* Part II.

41. Emily Nicolle & Olga Kharif, *A \$2 Trillion Free-Fall Rattles Crypto to the Core*, BLOOMBERG (June 26, 2022), <https://www.bloomberg.com/news/articles/2022-06-26/crypto-winter-why-this-bitcoin-bear-market-is-different-from-the-past#xj4y7vzkg> [<https://perma.cc/V9QL-M2J8>].

downturn.⁴² Some of these companies have outright failed.⁴³ One crypto hedge fund recently filed for bankruptcy.⁴⁴ And perhaps no other event has so well-defined what has been called the “crypto winter”⁴⁵ as the collapse of the stablecoin known as TerraUSD.⁴⁶ In early May, TerraUSD’s market cap was over \$60 billion; but within 24 hours around May 12, it lost 99% of its value.⁴⁷ To quote one TerraUSD investor: “I lost all my life savings . . . not sure what to do.”⁴⁸

Despite these events, crypto proponents remain positive and urge investors to “stay the course.”⁴⁹ But in the wake of this crash, now is the time to shed

42. See Ryan Browne, *Investors Worry Another Possible Crypto Collapse Will Bring Down Other Key Players*, CNBC (June 14, 2022), <https://www.cnbc.com/2022/06/14/celsius-liquidity-crisis-fuels-fears-of-crypto-market-contagion.html> [https://perma.cc/AKN6-AY43]; Taylor Locke, *Sam Bankman-Fried’s FTX is Offering Money to Crypto Platforms: ‘We Have a Responsibility to Consider Stepping in to Stem Contagion,’* FORTUNE (June 21, 2022), <https://fortune.com/2022/06/21/sam-bankman-fried-ftx-crypto-revolving-line-credit-blockfi-voyager-digital/> [https://perma.cc/4SHA-DBAL].

43. Tomio Geron, *Celsius Stops All Withdrawals and Transfers*, PROTOCOL (June 12, 2022), <https://www.protocol.com/bulletins/crypto-firm-celsius-stops-withdrawals> [https://perma.cc/P4VL-TPFS].

44. Scott Chipolina & Adam Samson, *Crypto Hedge Fund Three Arrows Files For US Bankruptcy*, FIN. TIMES (July 2, 2022), https://www.ft.com/content/8e4538cc-e8c5-4cc2-9448-053074f72f67?accessToken=zwAAAYHJ4G0ykdOORTjM6MVMwtOUSAUwdPcvZw.MEYCIQC3fqI6jR1_u3CKfhx1HzEXOfogM43n2lsP2prtYgJNQIhAKHWshKeBJVAfw_vDsbVrc0ktLSjAN3YarLG3dTQCy9-&sharetype=gif?token=fd09a797-949b-426a-8031-1ddad4ff8ac2 [https://perma.cc/FM2W-GMN7].

45. See, e.g., Telis Demos, *Crypto Winter May Be Harsh for Coinbase*, WALL ST. J. (May 11, 2022, 11:34 AM), <https://www.wsj.com/articles/crypto-winter-may-be-harsh-for-coinbase-11652283240> [https://perma.cc/VMW6-8W8M].

46. See generally Matt Levine, *Terra Flops*, BLOOMBERG (May 11, 2022, 5:44 PM), <https://www.bloomberg.com/opinion/articles/2022-05-11/terra-flops> [https://perma.cc/5WB9-9BM2].

47. *Terra Luna Cryptocurrency Collapses 98%, Investors Lose Life Savings*, BUS. STANDARD (May 12, 2022, 5:34 PM), https://www.business-standard.com/article/finance/terra-luna-cryptocurrency-collapses-98-investors-lose-life-savings-122051200809_1.html [https://perma.cc/RW56-6X5U].

48. *Id.*

49. *4 Predictions of What Will Happen with Cryptocurrency in the Future*, YAHOO NEWS (May 11, 2022), <https://www.yahoo.com/video/4-predictions-happen-cryptocurrency-future-093438500.html> [https://perma.cc/FZZ7-GDR5]; Zach Humphries, *Crypto Crashing. Stay the Course!*, YOUTUBE (May 10, 2022), https://www.youtube.com/watch?v=_yEQC2tJ7Vo [https://perma.cc/96A5-84DG]; Ian Allison & Coindesk, *Fidelity CEO Says She Isn’t Giving Up On Crypto In Bear Market*, FORTUNE (June 10, 2022, 8:25 AM), <https://fortune.com/2022/06/10/fidelity-ceo-crypto-winter-bear-market/> [https://perma.cc/5XZT-

some light on the important (and increasingly foundational) component of the crypto ecosystem known as the stablecoin. Specifically what rights does a coinholder have if the stablecoin or its issuer collapses? To answer this question, we studied the terms of service for the leading stablecoin issuers and compared them with information found in the company audit/attestation reports and statements that their issuers make in their front-facing materials, including their websites, blogs, and in their FAQs.

Bottom line from our study: *bad news*. In most cases, coinholders will either have no recourse at all or they will come to the table alongside (and sometimes, even behind) a multitude of other creditors.⁵⁰ They will likely wait long periods of time and spend significant amounts of money waiting for a likely unsatisfactory resolution. Even individuals who may have recently had their coins redeemed may find their transactions undone through bankruptcy's muscular preferences procedure.⁵¹

But it doesn't have to be this way. We conclude this project by offering a menu of private law solutions aimed at giving stablecoin holders legal reasons to be confident in their stablecoin rights. To arrive at these solutions, we start in Part I with a comprehensive world map of stablecoins. We describe how they've developed over time, create a taxonomy to understand stablecoin design, and explain both how these firms generate profits and how people use stablecoins in trading crypto-assets, decentralized finance ("DeFi"), and retail transactions. Part II then turns to our study of the terms of service contracts for all the leading stablecoin issuers. Here, we dig deep into these arcane and largely unread contracts to understand what kinds of commitments the issuers and (at least nominally) coinholders make to each other. In this process, we collected and categorized the core topics, including the nature of the right of redemption, authority over and relationship to reserve assets, and efforts to exculpate the issuer from any legal liability, among others. In this Part we also compare what these issuers tell the public in their front-facing materials to what one finds in the fine print (spoiler: they often don't match). With the information from our study in hand, we move into Part III, where we show just how a coinholder would likely fare in a stablecoin collapse. Our analysis unwinds all the various possibilities and uses a spectrum approach to forecast the likely outcome for coinholders. Having problematized the market, Part IV answers the question of what to do about it. We show how existing public law regimes do not address the issues

45HJ]; Yasmin Amer, *Where Some See a Setback For Crypto, Others See Signs of a Maturing Industry*, WBUR (May 19, 2022), <https://www.wbur.org/news/2022/05/19/circle-bank-crypto-cryptocurrency-bitcoin-stablecoin> [<https://perma.cc/LJ7B-F37Z>].

50. See discussion *infra* Part III.

51. See *infra* Section III.C.5.

we identified in Part III. But in this Part IV, we show how private law solutions can do the job. And our solutions are more than speculative. In a political environment where there has been no progress on national crypto regulation (and no likelihood of it coming soon), our prescriptions are the most likely contenders for bringing some order to the stablecoin wild west.

I. STABLECOINS AND DECENTRALIZED FINANCE

The past five years have witnessed a paradigm shift in finance. Since the Renaissance, people have accessed financial services through multiple layers of agents and intermediaries, including banks, brokers, securities depositories, and clearinghouses.⁵² Distributed ledger technology (“DLT”) networks like Bitcoin, Ethereum, and Solana have enabled the development of payment services, credit facilities, investment products and digital commodities that can arguably be accessed directly, without the need for intermediaries and which compete with intermediated offerings.⁵³ Stablecoins are one of the cardinal elements of this emerging decentralized finance ecosystem.

A. Understanding Stablecoins

Stablecoins can be understood by exploring the following three propositions. First, stablecoins are a type of crypto-asset, of which the defining characteristic is that they are designed to have a stable price.⁵⁴ Second, there are multiple types of stablecoins, with technical and economic differences that have significant legal implications.⁵⁵ Third, stablecoin issuers can pursue diverse business models, markedly affecting how they manage these crypto-assets and, in turn, their interactions with coinholders.⁵⁶

52. See, e.g., RAYMOND W. GOLDSMITH, FINANCIAL INTERMEDIARIES IN THE AMERICAN ECONOMY SINCE 1900 (1985); HERMAN EDWARD KROOSS & MARTIN R. BLYN, A HISTORY OF FINANCIAL INTERMEDIARIES (1971); Peter Temin, *Financial Intermediation in the Early Roman Empire*, 64 J. ECON. HIST. 705, 705 (2004).

53. See generally *DeFi Beyond the Hype*, WHARTON BLOCKCHAIN AND DIGITAL ASSET PROJECT (May 2021), <https://wifpr.wharton.upenn.edu/wp-content/uploads/2021/05/DeFi-Beyond-the-Hype.pdf> [<https://perma.cc/E7MH-SGBV>].

54. See *infra* Section I.A.1.

55. See *infra* Section I.A.2.

56. See *infra* Section I.A.3.

1. Stablecoins v. Other Crypto-assets

Before delving into stablecoins, it is necessary to review the fundamental features of DLT networks and crypto-assets.⁵⁷

57. We do not attempt in these pages to explain the intricacies of DLT networks, blockchain data structures, and smart contracts—for that we point to the vast body of literature that has already developed on these subjects. Here we provide a sampling. See Kevin Werbach & Nicolas Cornell, *Contracts Ex Machina*, 67 DUKE L.J. 313, 313 (2017); Kevin V. Tu & Michael W. Meredith, *Rethinking Virtual Currency Regulation in the Bitcoin Age*, 90 WASH. L. REV. 271, 271 (2015); Omri Marian, *Are Cryptocurrencies Super Tax Havens?*, 112 MICH. L. REV. ONLINE 38, 38 (2013); Trevor I. Kiviat, *Beyond Bitcoin: Issues in Regulating Blockchain Transactions*, 65 DUKE L.J. 569, 569 (2015); Carla L. Reyes, *Moving Beyond Bitcoin to an Endogenous Theory of Decentralized Ledger Technology Regulation: An Initial Proposal*, 61 VILL. L. REV. 191, 191 (2016); Max Raskin, *The Law and Legality of Smart Contracts*, 1 GEO. L. TECH. REV. 305, 305 (2017); Joshua A.T. Fairfield, *Bitproperty*, 88 S. CAL. L. REV. 805, 805 (2015); Shaanan Cooney et al., *Coin-Operated Capitalism*, 119 COLUM. L. REV. 591, 591 (2019); Sarah Jane Hughes & Stephen T. Middlebrook, *Advancing a Framework for Regulating Cryptocurrency Payments Intermediaries*, 32 YALE J. ON REG. 495, 495 (2015); Eric D. Chason, *Cryptocurrency Hard Forks and Revenue Ruling 2019–24*, 39 VA. TAX REV. 279, 279 (2019); Jonathan Rohr & Aaron Wright, *Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets*, 70 HASTINGS L.J. 463, 463 (2019); Eric D. Chason, *Smart Contracts and the Limits of Computerized Commerce*, 99 NEB. L. REV. 330, 331 (2020); Usha R. Rodrigues, *Law and the Blockchain*, 104 IOWA L. REV. 679, 680 (2019); Michael Abramowicz, *Cryptocurrency-Based Law*, 58 ARIZ. L. REV. 359, 359 (2016); Kevin Werbach, *Trust, But Verify: Why the Blockchain Needs the Law*, 33 BERKELEY L.J. 487, 487 (2018); Eric D. Chason, *How Bitcoin Functions as Property Law*, 49 SETON HALL L. REV. 129, 129 (2018); Jeremy M. Sklaroff, *Smart Contracts and the Cost of Inflexibility*, 166 U. PA. L. REV. 263, 263 (2017); Jerry Brito, Houman Shadab, and Andrea Castillo, *Bitcoin Financial Regulation: Securities, Derivatives, Prediction Markets, and Gambling*, 16 COLUM. SCI. & TECH. L. REV. 144, 144 (2014); Jeanne L. Schroeder, *Bitcoin and the Uniform Commercial Code*, 24 U. MIAMI BUS. L. REV. 1, 1 (2016); Ronald J. Mann, *Reliable Perfection of Security Interests in Crypto-Currency*, 21 SMU SCI. & TECH. L. REV. 159, 159 (2018); Joshua Fairfield, *Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property*, IND. L.J. (forthcoming 2021), <https://ssrn.com/abstract=3821102> [<https://perma.cc/JJS4-MLMR>]; Hilary J. Allen, *\$=€=Bitcoin?*, 76 MD. L. REV. 877, 877 (2017); Moringiello & Odinet, *supra* note 39; ANTONY LEWIS, *THE BASICS OF BITCOINS AND BLOCKCHAINS* (2018); MICHAEL CASEY & PAUL VIGNA, *THE TRUTH MACHINE: THE BLOCKCHAIN AND THE FUTURE OF EVERYTHING* (2018); ADAM GREENFIELD, *RADICAL TECHNOLOGIES: THE DESIGN OF EVERYDAY LIFE* (2017); DAVID GERARD, *ATTACK OF THE 50 FOOT BLOCKCHAIN: BITCOIN, BLOCKCHAIN, ETHEREUM, & SMART CONTRACTS* (2017); PRIMAVERA DE FILIPPI & AARON WRIGHT, *BLOCKCHAIN AND THE LAW* (2018); KEVIN WERBACH, *THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST* (2018); CHRIS BRUMMER, *CRYPTOASSETS: LEGAL, REGULATORY, AND MONETARY PERSPECTIVES* (2019); STEPHEN P. WILLIAMS, *BLOCKCHAIN: THE NEXT EVERYTHING* (2019); HILARY J. ALLEN, *DRIVERLESS FINANCE: FINTECH'S IMPACT ON FINANCIAL STABILITY* (2022); DEL WRIGHT, JR., *A SHORT & HAPPY GUIDE TO BITCOIN, BLOCKCHAIN, AND CRYPTO* (2020); JOSHUA A.T. FAIRFIELD, *RUNAWAY TECHNOLOGY: CAN LAW KEEP UP?* (2021); JOSHUA A.T. FAIRFIELD, *OWNED: PROPERTY, PRIVACY, AND THE NEW DIGITAL SERFDOM* (2017).

DLT is a new database technology that has a multitude of possible applications.⁵⁸ Historically, databases have been centralized, with a single entity in charge of creating and maintaining the original dataset (the “master”).⁵⁹ Partial or complete copies of this master may be made available to the public, but there can be no assurance of their accuracy over time.⁶⁰ Only the information in the master is determinative.⁶¹ Land registries, intellectual property registries, vehicle registries, as well as the financial accounts of corporations are notable examples of centralized databases.⁶²

DLT enables the creation of networks that support *distributed* databases.⁶³ Any participant in these systems can obtain a copy of the database which perfectly matches that held by all other participants.⁶⁴ Uniformity is ensured by an algorithm (commonly referred to as the consensus protocol) that incentivizes participants to update their copy of the database synchronously whenever new valid data entries are added.⁶⁵ Albert Wenger describes DLT databases as logically centralized (there is only one database) but organizationally decentralized (a potentially infinite number of participants can hold identical copies of the database).⁶⁶

The first successful DLT network was Bitcoin.⁶⁷ It was designed to forge “a purely peer-to-peer version of electronic cash”⁶⁸ that would be entirely non-reliant on sovereign entities, central banks, and intermediaries. At the

58. See generally Reyes, *Moving Beyond*, *supra* note 57, at 199; THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST, *supra* note 57, Ch. 1; DE FILIPPI & WRIGHT, *supra* note 57, Ch. 1–2.

59. See generally JANE GLEESON-WHITE, *DOUBLE ENTRY*, 1, 1–49 (2011); CASEY & VIGNA, *supra* note 57, at 1–17.

60. See generally JANE GLEESON-WHITE, *supra* note 59; CASEY & VIGNA, *supra* note 57, at 1–17.

61. See generally JANE GLEESON-WHITE, *supra* note 59; CASEY & VIGNA, *supra* note 57, at 1–17.

62. Odinet & Moringiello, *Tokens*, *supra* note 39; see also JANE GLEESON-WHITE, *supra* note 59; CASEY & VIGNA, *supra* note 57, at 1–17; ANDREA TOSATO, *Secured Transactions and IP Licenses: Comparative Observations and Reform Suggestions*, 81 LAW & CONTEMP. PROBS. 155, 160–72 (2018).

63. See generally THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST, *supra* note 57, at 1–33; DE FILIPPI & WRIGHT, *supra* note 57, at 1–33.

64. *Id.*

65. *Id.*

66. Albert Wenger, *Bitcoin: Clarifying the Foundational Innovation of the Blockchain*, CONTINUATIONS (Dec. 15, 2014), <http://continuations.com/post/105272022635/bitcoin-clarifying-the-foundational-innovation-of> [<https://perma.cc/8JXA-WRGN>].

67. See generally CASEY & VIGNA, *supra* note 57, at 1–17.

68. Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, <https://bitcoin.org/bitcoin.pdf> [<https://perma.cc/2KXF-ARTF>].

heart of Bitcoin lies a distributed database that has two primary functions. First, it records the existence of crypto-assets,⁶⁹ called bitcoins, which are created at regular time intervals.⁷⁰ Second, it records all the transactions in which bitcoins are transferred between participants in this network.⁷¹ By reviewing the Bitcoin distributed database, it is possible to account for all bitcoins ever created and trace every transaction that has occurred on this network. After a slow start, Bitcoin has progressively attracted a large user base and substantial capital inflows.⁷² At present, it is estimated that between 300,000 and 500,000 users either send or receive bitcoins every day.⁷³ More importantly, the network has demonstrated the resilience and viability of DLT and distributed ledgers.⁷⁴

Building on this success, DLT networks have evolved to implement a broader range of functionalities than those offered by Bitcoin. Ethereum is the archetypal example of this second generation of DLT networks. Operating as a distributed computational platform (the Ethereum Virtual Machine), Ethereum enables its users to run scripts (commonly referred to as *smart contracts*)⁷⁵ that can create a variety of cryptographic assets with diverse attributes (for example, they can be fungible or non-fungible) and transfer them through complex transactions.⁷⁶ This development has broadened the possible commercial application of crypto-assets far beyond their original use as a digital currency.

69. *Id.* at 2, 8.

70. *Id.* at 2–3, 6.

71. *Id.*

72. Schmidt et al., *supra* note 24; Gorton & Zhang, *supra* note 24; Lyons & Viswanath-Natraj, *supra* note 24; Catalini & de Gortari, *supra* note 24; Bathelemy et al., *supra* note 24.

73. *How Many People Own & Hold Bitcoin*, BUY BITCOIN WORLDWIDE, <https://www.buybitcoinworldwide.com/how-many-bitcoin-users/> [https://perma.cc/8GU9-X2B2].

74. See, e.g., Stephan Leible et al., *A Review on Blockchain Technology and Blockchain Projects Fostering Open Science*, FRONTIERS IN BLOCKCHAIN (Nov. 19, 2019), <https://www.frontiersin.org/articles/10.3389/fbloc.2019.00016/full> [https://perma.cc/2XEN-K6YK].

75. See Nick Szabo, *Formalizing and Securing Relationships on Public Networks*, FIRST MONDAY (Sept. 1, 1997), <https://journals.uic.edu/ojs/index.php/fm/article/view/548/469> [https://perma.cc/JP2N-UNAJ].

76. See generally Shaanan Cohny & David A. Hoffman, *Transactional Scripts in Contract Stacks*, 105 MINN. L. REV. 319, 336–41 (2020) (offering a concise and effective overview of the Ethereum Virtual Machine and its capabilities).

Today, crypto-assets can be divided into three functional categories.⁷⁷ First, crypto-assets that are intended to be used as a means of payment or value transfer (payment coins).⁷⁸ Second, crypto-assets that are designed to offer access to goods, services, or content (utility coins).⁷⁹ Third, crypto-assets that purport to operate as digital representations of either tangible or intangible assets which exist outside of DLT networks, such as a securities and money claims, but also real estate and art (asset coins).⁸⁰

Despite capturing the interest of the public and generating enormous hype, it has long been apparent that businesses and consumers generally do not use payment coins, such as bitcoin, litecoin, and dogecoin, as a digital currency.⁸¹

77. This tripartite classification of crypto-assets as payment tokens, utility tokens, and asset tokens has been widely adopted by regulators throughout the world. *See Supplement to the Guidelines for Enquiries Regarding the Regulatory Framework for Initial Coin Offerings (ICOs)*, SWISS FIN. MKT. SUPERVISORY AUTH. FINMA (Sept. 11, 2019), https://www.finma.ch/~media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/wegleitung-stable-coins.pdf?sc_lang=en&hash=178A9017323F2FB01B195BA446F41F19 [<https://perma.cc/TS5S-WWQQ>] [hereinafter FINMA]; INT'L MONETARY FUND, TREATMENT OF CRYPTO ASSETS IN MACROECONOMIC STATISTICS 8–13 (2018), <https://www.imf.org/external/pubs/ft/bop/2018/pdf/18-11.pdf>; ESMA SEC. & MKT. STAKEHOLDER GRP., OWN INITIATIVE REPORT ON INITIAL COIN OFFERINGS AND CRYPTO-ASSETS 4–5 (2018), https://www.esma.europa.eu/sites/default/files/library/esma22-106-1338_smsg_advice_-_report_on_icos_and_crypto-assets.pdf [<https://perma.cc/VK8S-VAC8>]; MONETARY AUTH. SING., A GUIDE TO DIGITAL TOKEN OFFERINGS 3 (2018), <http://www.mas.gov.sg/~media/MAS/Regulations%20and%20Financial%20Stability/Regulation%20Guidance%20and%20Licensing/Securities%20Futures%20and%20Fund%20Management/Regulations%20Guidance%20and%20Licensing/Guidelines/A%20Guide%20to%20Digital%20Token%20Offerings%20%2014%20Nov%202017.pdf> [<https://perma.cc/MAE9-Y82S>].

78. For example, bitcoin, litecoin, dogecoin, and Ripple XRP.

79. For example, Quarters and VCOINS. *See* Practical Law Corporate & Securities, *SEC Grants No-Action Relief to Blockchain Company Pocketful of Quarters (PoQ) for Utility Token Issuance*, WESTLAW (Aug. 1, 2019) [https://content.next.westlaw.com/practical-law/document/I21d9e2bdb2f111e9adfea82903531a62/SEC-Grants-No-Action-Relief-to-Blockchain-Company-Pocketful-of-Quarters-PoQ-for-Utility-Token-Issuance?viewType=FullText&transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://content.next.westlaw.com/practical-law/document/I21d9e2bdb2f111e9adfea82903531a62/SEC-Grants-No-Action-Relief-to-Blockchain-Company-Pocketful-of-Quarters-PoQ-for-Utility-Token-Issuance?viewType=FullText&transitionType=Default&contextData=(sc.Default)&firstPage=true) [<https://perma.cc/F68D-AYJA>]; Robert Plesnarski, *The SEC's Most Recent No-Action Letter on Digital Assets—Is the SEC Moving Beyond a Closed Box for Digital Asset Issuers?*, O'MELVENY & MYERS LLP (Nov. 24, 2020), <https://www.omm.com/resources/alerts-and-publications/publications/is-the-sec-moving-beyond-a-closed-box-for-digital-asset-issuers/> [<https://perma.cc/YCE7-9248>].

80. *See generally* Gorton & Zhang, *supra* note 24, at 3.

81. *See* David Yermack, *Is Bitcoin a Real Currency? An Economic Appraisal 2* (Nat'l Bureau Econ. Rsch., Working Paper No. 19747, 2014), https://www.nber.org/system/files/working_papers/w19747/w19747.pdf

There is a twofold explanation for this. First, individuals acquire these crypto-assets primarily as an investment which they hope will appreciate over time with increased participation in DLT networks—a behavior commonly referred to as “hodling.”⁸² Second, the price of these payment coins is extremely volatile.⁸³ For example, bitcoin was priced at about \$29,000 at the end of 2020, surged to almost \$67,000 by November 2021, and reverted to \$20,000 by June 2022; moreover, during 2021, bitcoin had a daily average volatility of 4.56%.⁸⁴ These fluctuations are due to the fact that the price of these crypto-assets is primarily driven by supply and demand and profoundly influenced by market sentiment.⁸⁵ Unlike traditional currencies, these payment coins are backed neither by assets nor by a government.⁸⁶ For businesses, the volatility of bitcoin and other similar coins renders them extremely uneconomical, if not outright unworkable, as a currency to price their goods, services, assets, and liabilities.⁸⁷

Stablecoins were designed to overcome these two obstacles. They constitute a crypto-asset class that possesses all the technological advantages of DLT networks—disintermediation, cryptographic security, transactional

[<https://perma.cc/YH7E-B2Z6>]; Florian Glaser et al., *Bitcoin - Asset or Currency? Revealing Users' Hidden Intentions*, EUROPEAN CONF. INFO. SYS. 1, 13 (2014), <https://ssrn.com/abstract=2425247> [<https://perma.cc/22TU-8V7M>]; Raphael A. Auer & David Tercero-Lucas, *Distrust or Speculation? The Socioeconomic Drivers of U.S. Cryptocurrency Investments* 29–31, (CESifo, Working Paper No. 9287, 2021), <https://www.cesifo.org/en/publications/2021/working-paper/distrust-or-speculation-socioeconomic-drivers-us-cryptocurrency> [<https://perma.cc/L6FA-A2V4>] (providing an exhaustive analysis of the socioeconomic factors driving investment in bitcoin and other crypto-assets); Dirk G. Baur et al., *Bitcoin: Medium of Exchange or Speculative Assets?*, 54 J. INT'L FIN. MKTS., INSTS. & MONEY 177, 185 (2017).

82. See Auer & Tercero-Lucas, *supra* note 81, at 4; see also Baur et al., *supra* note 81.

83. See Dirk G. Baur & Thomas Dimpfl, *The Volatility of Bitcoin and Its Role as a Medium of Exchange and a Store of Value*, 61 EMPIRICAL ECON. 2663, 2665 (2021).

84. *Bitcoin (BTC) Price Per Day from August 2015 to October 20, 2022 (in U.S. Dollars)*, STATISTICA, <https://www.statista.com/statistics/806453/price-of-ethereum/> [<https://perma.cc/DUC3-LCNA>] (last visited Oct. 30, 2022).

85. Adam Hayes, *What Factors Give Cryptocurrencies Their Value: An Empirical Analysis* 6, (New Sch. for Soc. Rsch., Dep't Econ., Working Paper 06/2014, 2014), https://www.economicpolicyresearch.org/images/docs/research/nssr_working_papers/NSSR_WP_062014.pdf [<https://perma.cc/U2LR-328M>].

86. See generally Igor Makarov & Antoinette Schoar, *Price Discovery in Cryptocurrency Markets*, 109 AEA PAPERS AND PROCEEDINGS 97, 97–99 (2019).

87. See generally Baur & Dimpfl, *supra* note 83.

transparency—but also the low volatility of traditional, government-backed currencies.⁸⁸

2. The Heterogeneity of Stablecoins

There is no universally agreed upon definition of a stablecoin.⁸⁹ The cardinal feature of these crypto-assets is that they are designed with the primary purpose of maintaining a stable price relative to a specified asset, or a basket of assets (generally referred to as the *peg*).⁹⁰ Beyond this common denominator, however, there is enormous diversity.⁹¹ Over the past five years, a dazzling number of stablecoins have emerged, experimenting with a vast range of economic models, technological solutions, and organizational arrangements.⁹² For present purposes, it is not helpful to conduct an exhaustive census of this heterogenous landscape. We leave that to

88. Shobhit Seth, *Is Stablecoin the Answer to All Cryptocurrency Problems?*, INVESTOPEDIA (July 20, 2022), <https://www.investopedia.com/tech/stablecoin-answer-all-cryptocurrency-problems/> [<https://perma.cc/UK2D-H4HM>].

89. Institutions provide various definitions. See FIN. STABILITY BD., REGULATION, SUPERVISION AND OVERSIGHT OF “GLOBAL STABLECOIN” ARRANGEMENTS 12 (2021), <https://www.fsb.org/wp-content/uploads/P071021.pdf> [<https://perma.cc/LRA7-BNTF>]; Erik Feyen et al., *What Does Digital Money Mean for Emerging Market and Developing Economies?* 1 (Bank for Int’l Settlements (BIS), Working Paper No. 973, 2021), <https://www.bis.org/publ/work973.pdf> [<https://perma.cc/X5KF-F7ZG>]; Dirk Bullmann et al., *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, 230 EUROPEAN CENT. BANK OCCASIONAL PAPER SERIES 1, 10–11 (2019); FINMA, *supra* note 77, at 1–4; INT’L TELECOMM. UNION, TAXONOMY AND DEFINITION OF TERMS FOR DIGITAL FIAT CURRENCY 10 (2019) (Focus Group Technical Report). Further, scholars have their own definitions. See Jesse Lund, *Stable Coins: Enabling Payments on Blockchain Through Alternative Digital Currencies*, IBM SUPPLY CHAIN & BLOCKCHAIN BLOG (July 17, 2018), <https://www.ibm.com/blogs/blockchain/2018/07/stable-coins-enabling-payments-on-blockchain-through-alternative-digital-currencies/> [<https://perma.cc/T6S6-XJVP>]; Craig Calcaterra et al., *Stable Cryptocurrencies: First Order Principles*, 3 STAN. J. BLOCKCHAIN L. & POL’Y 62, 62–63 (2019).

90. See Bullmann et al., *supra* note 89, at 9.

91. This heterogeneity is acknowledged by regulators worldwide. See *Global Stablecoin Initiatives*, BD. INT’L ORG. SEC. COMM’NS 3–4 (Mar. 2020), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD650.pdf> [<https://perma.cc/BR7E-TV8W>].

92. For a recent census of major stablecoin projects, see Amani Moin et al., *A Classification Framework for Stablecoin Designs*, CORNELL U. & AVA LABS 1, 22–24 app. B (Sept. 18, 2019), <https://arxiv.org/pdf/1910.10098.pdf> [<https://perma.cc/EV8M-6F4E>].

economists and computer scientists.⁹³ Rather, largely adopting the classification suggested by Amani Moin, Emin Gün Sirer, and Kevin Sekniqi,⁹⁴ we decompose the leading (and unquestionably most important) stablecoins into three constitutive elements, describe the most common design choices of issuers, and highlight their private law reverberations.

a. The Issuer

The first constitutive element of a stablecoin is its *issuer*. In contrast to the ethos of the DLT ecosystem, the majority of stablecoins are centralized, as they are controlled by a single entity.⁹⁵ For example, USDT is issued by Tether Holdings Limited—a company incorporated in Hong Kong with several subsidiaries worldwide and, in turn, is owned by iFinex Inc., a corporation registered in the British Virgin Islands.⁹⁶ The corporate structure behind USDT is famously opaque, has changed over time, and has been the subject of much speculation.⁹⁷ USDC is issued by Circle International Financial, a Delaware corporation with multiple subsidiaries and branches.⁹⁸ PAXG and GUSD are issued by the Paxos Trust Company and the Gemini Trust Company, respectively; both are licensed as New York limited trust

93. The body of scholarship on stablecoin classifications is vast and expanding at a rapid pace. See Thomas Boltshauser & Jean-Marc Seigneur, *Stablecoin DC Architecture Analysis (2021 Version)*, GENEVA INT'L TELECOMM. UNION 4–5 (2021); HENRI ARSLANIAN, *THE BOOK OF CRYPTO: THE COMPLETE GUIDE TO UNDERSTANDING BITCOIN, CRYPTOCURRENCIES AND DIGITAL ASSETS* 23–24 (2022); Haseeb Qureshi, *Stablecoins: Designing a Price-Stable Cryptocurrency*, HACKERNOON (Feb. 9, 2018), <https://hackernoon.com/stablecoins-designing-a-price-stable-cryptocurrency-6bf24e2689e5> [<https://perma.cc/4NDK-SU9G>]; Ingolf G.A. Pernice et al., *Monetary Stabilization in Cryptocurrencies—Design Approaches and Open Questions*, CRYPTO VALLEY CONF. ON BLOCKCHAIN TECH. (May 28, 2019), <https://arxiv.org/pdf/1905.11905.pdf> [<https://perma.cc/RJ5N-5DC7>].

94. See Moin et al., *supra* note 92, at 1–2.

95. See *Stablecoin List—A Database of All Stablecoin Providers*, BLOCKDATA, <https://www.blockdata.tech/markets/use-cases/stablecoins> [<https://perma.cc/M85B-U7PG>] (last visited Oct. 30, 2022).

96. The corporate structure behind USDT is opaque and has changed significantly over time. See David Yaffe-Bellany, *The Coin That Could Wreck Crypto*, N.Y. TIMES (June 17, 2022), <https://www.nytimes.com/2022/06/17/technology/tether-stablecoin-cryptocurrency.html> [<https://perma.cc/E6VA-TTBZ>].

97. See Elizabeth Howcroft, *Explainer: What Are Stablecoins, the Asset Rocking the Cryptocurrency Market?*, REUTERS (May 12, 2022, 9:01 AM), <https://www.reuters.com/business/finance/what-are-stablecoins-asset-rocking-cryptocurrency-market-2022-05-12/>.

98. *USD Coin (USDC)*, CIRCLE, <https://www.circle.com/en/usdc> [<https://perma.cc/5S7D-49CK>].

companies.⁹⁹ Centralized issuers have complete control over the design, creation (often referred to as *minting*), destruction (often referred to as *burning*), and operation of their stablecoins.¹⁰⁰ Crucially, from the perspective of coinholders, these entities constitute identifiable counterparties with which coinholders can interact pursuant to publicly available terms of service and, possibly, enter into a contractual relationship with defined rights and obligations.¹⁰¹

However, not all coinholders enjoy a counterparty relationship with respect to their stablecoins—a component that would be critical if these stablecoins collapsed. Over the past few years, the emergence of DLT networks with distributed computational capabilities has made a decentralized model possible.¹⁰² A group of software developers, typically collaborating on the basis of an open-source model, deploy a bundle of smart contracts (often collectively referred to as a “protocol”) that creates a stablecoin and manages every aspect of its operation automatically, pursuant to its code.¹⁰³ Updates and modifications to the protocol and, in turn, the stablecoin are effectuated following whatever internal governance arrangement has been adopted by the software developers, ranging from democratic voting of protocol users to technocratic decisions of the project founder.¹⁰⁴ The largest decentralized stablecoins are DAI and FRAX, which are controlled by the MakerDAO and Frax protocols, respectively, on the Ethereum network.¹⁰⁵ For example, a person can obtain DAI by transferring certain types of crypto-assets—typically with volatile prices—to wallets controlled by the MakerDAO protocol.¹⁰⁶ The governance of this protocol requires that changes to its code must be voted on by holders of another crypto-asset called Maker Token (MKR).¹⁰⁷

99. *Pax Gold (PAXG)*, PAXOS, <https://paxos.com/paxgold/> [<https://perma.cc/2JRJ-QDYC>]; *Gemini Dollar (GUSD)*, GEMINI, <https://www.gemini.com/dollar> [<https://perma.cc/LD4W-DGRX>]. See generally *infra* Section IV.B.3.

100. See *infra* Sections II.A–B.

101. See *infra* Sections II.A–B.

102. See generally Aaron Wright, *The Rise of Decentralized Autonomous Organizations: Opportunities and Challenges*, 4 STAN. J. BLOCKCHAIN L. & POL'Y 152, 152–53 (2021); *DeFi Beyond the Hype*, *supra* note 53, at 1–5.

103. See *DeFi Beyond the Hype*, *supra* note 53, at 9–10; see also *infra* Section III.A.

104. See *DeFi Beyond the Hype*, *supra* note 53, at 5–6; see also *infra* Sections II.A–B.

105. For the market capitalization of DAI and FRAX, see *Top Stablecoin Tokens by Market Capitalization*, COINMARKETCAP, <https://coinmarketcap.com/view/stablecoin/> [<https://perma.cc/4PSK-BW63>] (last visited Oct. 30, 2022).

106. See *The Maker Protocol: MakerDAO's Multi-Collateral Dai (MCD) System*, MAKERDAO, <https://makerdao.com/da/whitepaper> [<https://perma.cc/32LZ-BMXM>].

107. *Id.*

Crucially, MakerDAO and all similar protocols are software made available to the public which individuals use entirely at their own risk.¹⁰⁸ Coinholders do not enter into any formal or informal agreement with the software developers in charge of these protocols. Moreover, there are typically express liability disclaimers, as is custom with open-source projects. This bears out in the MakerDAO white paper, described in Part II below.¹⁰⁹ The implications of this model, discussed in Part III, are clear: if DAI collapses, coinholders would have *no* rights to recover the crypto-assets transferred in the purchase of DAI, no counterparty to sue, and virtually no recourse.¹¹⁰ This aspect of decentralized stablecoin models is absent in the existing legal literature.

b. The Peg

The second constitutive element of a stablecoin is its *peg*.¹¹¹ The choice of the reference asset is one of the most salient for a stablecoin project as it determines its volatility in absolute terms.¹¹² As the price of stablecoins is designed to move in unison with that of their peg, choosing a volatile reference asset results in a volatile stablecoin. At present, almost all stablecoins are pegged to either a currency or a precious metal.¹¹³ In the former group, the U.S. dollar is the most common choice.¹¹⁴ The largest stablecoins by market capitalization, including USDT, USDC, DAI, FRAX, BUSD, TUSD, and USDP, are all pegged to the U.S. dollar on a 1:1 basis:

108. See *infra* Sections II.A–B.

109. See *infra* Section II.B.

110. See *infra* Part III.

111. See Moin et al., *supra* note 92, at 2–4.

112. *Id.*

113. A few smaller projects are looking to other possible reference assets. For example, Saga is attempting to peg its stablecoin to the IMF's special drawing rights and has also considered using the consumer price index. See Will Kenton, *Special Drawing Rights (SDRs): Definition and Requirements*, INVESTOPEDIA (Jan. 10, 2022), <https://www.investopedia.com/terms/s/sdr.asp> [<https://perma.cc/AFP7-HCUN>].

114. As of June 2022, the aggregated market capitalization of stablecoins pegged to the USD constitute 99% of the overall market capitalization of stablecoins pegged to fiat currencies. See *Stablecoins*, THE BLOCK, <https://www.theblock.co/data/decentralized-finance/stablecoins/share-of-fiat-backed-stablecoin-supply-in-usd-by-currency> [<https://perma.cc/8B64-WVYN>] (last visited Oct. 30, 2022). Nonetheless, there are also stablecoins pegged to other currencies. For example, Tether issues stablecoins linked to the Euro, the Chinese Yuan, and the Mexican Peso. See *Transparency*, TETHER (June 30, 2022), <https://tether.to/en/transparency/#reports> [<https://perma.cc/K75N-WH97>]. Meanwhile, StraitsX issues a stablecoin to the Singaporean Dollar. See *StraitsX Singapore Dollar (XSGD)*, STRAITSX, <https://www.straitsx.com/sg/xsgd> [<https://perma.cc/RME3-RWGD>] (last visited Oct. 22, 2022).

one coin equals \$1.¹¹⁵ The reasons for this choice are that the U.S. dollar is considered a reliable store of value internationally, is the world's reserve currency, has low volatility, and is used to set reference prices for commodities as well as other widely traded assets.¹¹⁶ In the group of stablecoins tied to precious metals, gold is the favored peg, with PAXG, XAUT, and G-COIN as notable examples;¹¹⁷ there are also projects that use platinum and silver as their reference assets, yet their market capitalization is significantly smaller.¹¹⁸ Though precious metals have a history of price fluctuations far exceeding those of fiat currencies, the purported strength of these stablecoins is that they enable their holders both to store value in an asset not linked to a government and to enjoy the technological strengths of DLT.¹¹⁹

c. The Stabilization Mechanism

The third constitutive element of a stablecoin is its *price stabilization mechanism*. To retain a stable price relative to their peg, issuers implement mechanisms to absorb any volatility caused by holders freely trading their coins in the open market.¹²⁰ This is the most diverse component of stablecoins and has the most far-reaching private law implications.¹²¹

At present, three stabilization mechanisms are prevalent in the market. The first involves issuers holding reserves of valuable assets and committing both

115. Madana Prathap, *Top 6 Stablecoins in the Crypto Market—What Are They, How They Work and Why They Have Governments Worried*, BUS. INSIDER INDIA (Dec. 24, 2021), <https://www.businessinsider.in/investment/news/top-6-stablecoins-in-the-crypto-market-what-are-they-how-to-they-work-and-why-they-have-governments-worried/articleshow/87667452.cms> [<https://perma.cc/6SKB-7EU6>].

116. See Paul Krugman, *Working Out: Why the Dollar Dominates*, N.Y. TIMES (Apr. 15, 2022), <https://www.nytimes.com/2022/04/15/opinion/us-dollar-dominance.html>.

117. See *How G-Coin Tokens Are Unique*, MEDIUM (May 6, 2022), <https://g-coin.medium.com/how-g-coin-tokens-are-unique-22030640bd37> [<https://perma.cc/7L6P-D248>]; Charles Cascarilla, *Pax Gold Whitepaper*, PAXOS 1, 3 (Sept. 5, 2019), <https://paxos.com/wp-content/uploads/2019/09/PAX-Gold-Whitepaper.pdf> [<https://perma.cc/3XPV-469P>]; *Tether Gold—A Digital Token Backed by Physical Gold*, TETHER OPERATIONS LTD. 1, 7 (Jan. 28, 2022), <https://gold.tether.to/Tether%20Gold%20Whitepaper.pdf> [<https://perma.cc/A8JX-746K>].

118. See *What Are SilverTokens (SLVT)?*, SILVERTOKEN, <https://silvertoken.com/silvertokens/> [<https://perma.cc/Y249-RFET>]; *History*, PALLADIUMCOIN, <https://palladiumcoin.com/history> [<https://perma.cc/S52P-24XU>].

119. See generally *What is Paxos Gold? (PAXG)*, KRAKEN, <https://www.kraken.com/en-learn/what-is-paxos-gold-paxg> [<https://perma.cc/SJ8B-JAGQ>].

120. See Moin et al., *supra* note 92, at 6–8.

121. *Id.* at 7–12 (for a complete survey); see also Bullmann et al., *supra* note 89, at 9–11 (suggesting that the stabilization mechanism is the cardinal element of any stablecoin).

to mint and redeem their stablecoins at a predetermined rate.¹²² The three largest stablecoins by market capitalization, USDT, USDC, and BUSD, are built on this price stabilization system.¹²³ Issuers hold large asset pools and undertake, on one hand, to supply one of their coins to anyone who tenders \$1 and, on the other hand, to allow coinholders to redeem their coins in return for \$1.¹²⁴ In principle, this structure suppresses price fluctuations through economic incentives.¹²⁵ Specifically, if the market price of one of these stablecoins dips below the price at which its issuer offers to redeem it, arbitrageurs will acquire stablecoins in the open market and immediately redeem them with their issuer.¹²⁶ Vice-versa, if the market price of one of these stablecoins ventures above the issuer's fixed minting price, arbitrageurs will obtain coins from the issuer and then sell them at a profit in the open market.¹²⁷

This stabilization mechanism is not novel. It can be traced as far back as the 17th century when several prominent European banks issued deposits backed by precious metal coins,¹²⁸ and it also underpinned the Bretton Woods accord, under which the US dollar was pegged to gold.¹²⁹ Its viability is dependent on market participants trusting that the issuer has sufficient resources to honor its commitment to mint and, especially, redeem stablecoins at the predetermined rate. It follows, as we describe in Parts II and III, that the contractual terms pursuant to which issuers promise to perform these operations and manage their reserves are key.¹³⁰

Establishing a robust custodial structure for their reserves and choosing which assets to hold are fundamental design choices. For example, Tether keeps its reserves in a financial institution domiciled in the Cayman Islands

122. See Moin et al., *supra* note 92, at 7–8 (describing that some issuers of stablecoins pegged to commodities limit the minting of new coins but not their redeemability, creating a “lower bound on the price of the stablecoin but not an upper bound”).

123. See *Top Stablecoin Tokens*, *supra* note 105 (for the capitalization of stablecoins); see also *infra* Sections II.A–B.

124. It should be noted that Tether has a history of also releasing coins in tranches without clear visibility of whether an equivalent amount of dollars has been tendered. See John M. Griffin & Amin Shams, *Is Bitcoin Really Un-Tethered?*, 75 J. AM. FIN. ASS'N 1913, 1918 (2020).

125. See Moin et al., *supra* note 92, at 7–8.

126. *Id.* at 7.

127. *Id.*

128. See Jon Frost et al., *supra* note 30.

129. James Chen, *Bretton Woods Agreement and the Institutions It Created Explained*, INVESTOPEDIA (Mar. 21, 2022), <https://www.investopedia.com/terms/b/brettonwoodsagreement.asp> [https://perma.cc/87NK-HG79].

130. See *infra* Parts II–III.

and holds a range of assets, including cash, treasuries, secured loans, and crypto-assets in an omnibus account.¹³¹ Paxos maintains its reserves in FDIC insured banks and exclusively holds US dollars and US treasuries.¹³² Issuers of stablecoins pegged to precious metals typically have reserves in-kind, keep their assets with specialized custodians, and may segregate the metals backing the coins of each stablecoin holder.¹³³ Taking a different approach, decentralized issuers hold their reserves directly through DLT structures which do not rely on financial institutions as custodians. For example, the reserves backing DAI are exclusively comprised of crypto-assets held in wallets controlled by the MakerDAO protocol.¹³⁴

Another fundamental matter for issuers implementing this stabilization mechanism is the ratio of reserves held to stablecoins minted. Some projects hold or purport to hold assets sufficient to meet redemptions for all their stablecoins at any moment in time (this model is commonly described as *fully-collateralized*).¹³⁵ Others hold assets which significantly exceed the value of their stablecoins in circulation (this model is commonly referred to as *over-collateralized*); this is typically the choice of issuers with reserves mostly comprised of volatile assets, especially crypto-assets.¹³⁶ Others still hold only *fractional reserves*, whereby the issuer mints stablecoins the aggregate value of which exceeds that of their reserves.¹³⁷

A second mechanism to stabilize the price of a stablecoin involves a *dual coin structure*.¹³⁸ Issuers create a primary coin (this is the stablecoin), the price of which is tied to the peg and, alongside it, create a secondary coin which is designed to absorb volatility swings in the primary coin.¹³⁹ One implementation of this dual coin model is the *seigniorage shares* system.¹⁴⁰ Under this model, if the price of the stablecoin dips below its peg, the issuer auctions the secondary coin in exchange for stablecoins; thereafter, the issuer withdraws from circulation the stablecoins acquired through this auction,

131. See *infra* Section II.C.

132. See *infra* Section III.C.1.

133. Notably, this is the structure adopted by G-Coin. See *How G-Coin Tokens Are Unique*, *supra* note 117.

134. See MakerDAO, *supra* note 106.

135. See Moin et al., *supra* note 92, at 7–8; see also *infra* Sections II.B–C.

136. See Moin et al., *supra* note 92, at 3–6.

137. *Id.* at 6 (explaining the ways in which this might be implemented).

138. See *id.* at 8–10.

139. *Id.*

140. *Id.*; Robert Sams, *A Note on Cryptocurrency Stabilisation: Seigniorage Shares* 1, 3–4 (Apr. 28, 2015), <https://blog.bitmex.com/wp-content/uploads/2018/06/A-Note-on-Cryptocurrency-Stabilisation-Seigniorage-Shares.pdf> [<https://perma.cc/GMQ9-JD6Q>].

contracting supply and causing the price to increase back to the peg.¹⁴¹ If the price of the stablecoin pushes above that of the peg, the issuer mints additional stablecoins and distributes them to the holders of the secondary coin.¹⁴² This intervention expands supply of the stablecoin by reducing its price and concurrently incentivizes market participants to hold the secondary coin.¹⁴³

A variation of this system aims to soak up price volatility in the primary coin by linking it to the secondary coin through a mechanism of dynamic, bilateral exchanges.¹⁴⁴ For example, the stablecoin is pegged to the U.S. dollar on a 1:1 basis and its holders can exchange it for \$1 worth of the secondary coin at any moment in time by interacting with an automated system (i.e., a smart contract).¹⁴⁵ The issuer allows the price of the secondary coin to float freely based on market demand. In this structure, if the price of the primary coin dips below \$1, arbitrageurs will, presumably, acquire it and exchange it for \$1 worth of the secondary coin, netting a profit.¹⁴⁶ Conversely, if the price of the stablecoin rises above \$1, arbitrageurs will presumably do the opposite: acquire \$1 worth of the secondary and immediately trade it for the primary coin, expanding its supply and ultimately lowering its price.¹⁴⁷

Notably, as there are no asset reserves backing the primary coin, the viability of dual-coin stabilization mechanisms is contingent on the secondary coin retaining value. Issuers only commit to enable holders of the primary coins to exchange them for secondary coins and, in some cases, to support the price of the secondary coin through economic incentives, including access to services, voting rights linked to the governance of a DLT network, and others.¹⁴⁸ Implicitly, holders accept that a collapse in value of the secondary coin may result in their stablecoin losing its peg. In recent past, multiple projects built on dual-coin stabilization mechanisms have failed catastrophically, with far reaching implications which we discuss in Part III.¹⁴⁹

141. Moin et al., *supra* note 92, at 8.

142. *Id.*

143. *Id.*

144. *See id.* (discussing the dual coin designs of USDX and Celo).

145. *See id.* (specifically discussing USDX's design).

146. *See id.* (“[W]hen USDX is trading at a price of less than \$1, people are incentivized to redeem it for \$1 worth of LHT . . .”).

147. *See id.*

148. *See generally* Moin et al., *supra* note 92 (for a complete list of possible incentives).

149. *See infra* Part III. *See generally* Clements, *supra* note 29, at 137–39 (providing a comprehensive analysis of IRON/TITAN, a stablecoin adopting this type of dual-coin stabilization mechanism).

A third price stabilization mechanism relies on algorithms that, operating as a quasi-central bank, absorb market price swings by shrinking and expanding the amount of stablecoins in circulation.¹⁵⁰ This approach is based on the theory that crypto-asset volatility can be counteracted by elastically adjusting their supply; “the idea is that an X% change in coin price, followed by an X% change in coin supply, will return coin price to its initial value”¹⁵¹ For example, Ampleforth (AMPL) is a stablecoin pegged to the USD on a 1:1 basis.¹⁵² Every 24 hours, the algorithm controlling this crypto-asset re-adjusts the number of coins of each holder (this process is commonly referred to as “rebasing”¹⁵³). The software increases or decreases the number of coins of each holder proportionally, depending on whether the price of AMPL has ventured above or below \$1 respectively.¹⁵⁴ The rebasing process is elastic and non-dilutive, as it only affects the number of coins of each holder and not their share of the overall supply of AMPL.¹⁵⁵ The challenge for stablecoins implementing this stabilization mechanism is that the only value buttressing these crypto-assets is their scarcity, the stabilization algorithm itself, and, possibly, economic incentives provided by their issuers. If market participants lose confidence in this value proposition, these stablecoins inevitably collapse—leaving their holders with no recourse against their issuers.

3. Stablecoin Business Models

The heterogeneity of stable coins extends to the approaches adopted by issuers to generate returns. A first pathway is to charge fees for the issuance, redemption, and transfer of coins.¹⁵⁶ For example, Tether imposes a

150. See Moin et al., *supra* note 92, at 10; see also Clements, *supra* note 29, at 136–37. See generally Kenji Saito & Mitsuru Iwamura, *How To Make a Digital Currency on a Blockchain Stable*, 100 FUTURE GENERATION COMPUTER SYSTEMS 58 (2019).

151. Sams, *supra* note 140, at 2.

152. See *About the Ampleforth Protocol*, AMPLEFORTH DOCS, <https://docs.ampleforth.org/learn/about-the-ampleforth-protocol> [<https://perma.cc/Y2Y8-PQK9>] (May 2022).

153. See *id.* (“In the case of AMPL, rebases occur once daily”).

154. See *id.*

155. See *id.* (“The Ampleforth protocol’s supply changes are proportional and non-dilutive. If a user owns Y% of the network before a rebase, the user will always own Y% of the network unless the user buys or sells more AMPL.”).

156. The fees charged by stablecoin issuers are distinct from the fees that users might have to pay to effectuate transactions on a particular DLT network. For example, Ethereum requires

transaction minimum of \$100,000 both for minting and redeeming USDT and charges a 0.1% fee for these operations.¹⁵⁷ Stablecoins pegged to commodities often have particularly high fees due to the significant expenses incurred in maintaining reserves in kind. For example, G-Wallet Corp., the issuer of a stablecoin (G-Coin) pegged to gold and backed by gold reserves on a 1:1 basis, charges coinholders a fee of 0.2% per annum to cover the cost for renting storage vaults,¹⁵⁸ as well as a 5% fee for gold redemptions below 1 kilogram.¹⁵⁹ It should be noted that issuance, redemption, and transfer fees can have a negative impact on the stability of a stablecoin.¹⁶⁰ Most stabilization mechanisms, directly or indirectly, rely on arbitrageurs stepping in to take advantage of any price deviation of a stablecoin from its peg. If fees are charged, arbitrageurs will only take action to the extent that spread between the price of the stablecoin in question and its peg is greater than the fees charged by the issuer.

A second avenue through which issuers can generate returns is to actively trade their own stablecoin. They can participate in the market as arbitrageurs, profiting when the price of their coins diverges from the peg. Issuers can also act as market-makers by facilitating trades involving their own stablecoin and taking advantage of the bid/ask spread; this can be especially lucrative if issuers operate their own exchange, as is the case with Gemini and

payment of a variable fee (called *gas*) for any transaction carried out on the network. Gas is charged to prevent malicious actors from clogging the network. The measure of this fee varies depending on the complexity of the operation and availability of resources at that moment in time. If A wants to transfer 100 USDT to B on the Ethereum network, gas payment is required. See Cohney & Hoffman, *supra* note 76, at 337–38 (describing the Ethereum gas system a “complexity tax”); see also Bruce Mizrach, *Stablecoins: Survivorship, Transactions Costs and Exchange Microstructure*, ARXIV (Jan. 5, 2022), <https://arxiv.org/pdf/2201.01392.pdf> [<https://perma.cc/TR9X-8YLL>] (providing an empirical analysis of gas paid when transferring USDC and USDT on Ethereum).

157. See *Fees, TETHER* <https://tether.to/en/fees/#:~:text=150%20USD%20in%20Tether%20Tokens,of%20a%20robust%20verification%20process> (last visited July 12, 2022).

158. See *What Fees Are Associated With My Account?*, G-COIN, <https://support.gcoin.com/en/articles/3216101-what-fees-are-associated-with-maintaining-my-account> (last visited July 12, 2022).

159. See *What Options Do I Have to Redeem My G-Coins for Physical Gold? Is There a Cost?*, G-COIN, <https://support.gcoin.com/en/articles/3216102-what-options-do-i-have-to-redeem-my-g-coins-for-physical-gold-is-there-a-cost> [<https://perma.cc/K2YF-T73M>].

160. See Moin et al., *supra* note 92, at 14–15.

Binance.¹⁶¹ However, these activities are capital intensive and involve assuming significant trading risks in loosely regulated markets. It is emblematic that many issuers which have trodden this pathway have incurred substantial losses and even destabilized their own stablecoin.¹⁶²

A third pathway to generate returns involves the use of reserves as investment capital. Issuers that mint and redeem stablecoins at a predetermined rate effectively accept funds with an obligation to return them on demand, at an uncertain future moment in time.¹⁶³ This pool of assets can be lent for profit or invested in debt securities, equities, commodities, or other crypto-assets.¹⁶⁴ This strategy can be very profitable since issuers typically do not owe interest on the funds they receive from stablecoin holders.¹⁶⁵ For example, Tether and Circle invest the reserves backing USDT and USDC in a variety of assets, including cash, commercial paper, fiduciary deposits, reverse repo notes, treasury bills, secured loans, corporate bonds, funds, precious metals, and other investments including crypto-assets.¹⁶⁶ *Table 1* shows Tether's reserve asset composition as of January 18, 2023.¹⁶⁷

161. See generally Dan Ashmore, *An Introduction to Stablecoins*, FORBES ADVISOR, <https://www.forbes.com/advisor/investing/cryptocurrency/stablecoins/> [https://perma.cc/D7BJ-9XFB]; *How Do Stablecoin Issuers Make Money?*, PYMNTS (June 5, 2022), <https://www.pymnts.com/cryptocurrency/2022/how-do-stablecoin-issuers-make-money/> [https://perma.cc/56TA-JDLB]; Aleks Larsen, *The Business of Stablecoins*, BLOCKCHAIN CAP., <https://blockchain.capital/the-business-of-stablecoins/> [https://perma.cc/MZ6X-WQHT]; Tim Copeland, *Stablecoin's Secret*, DECRYPT (Oct. 31, 2018), <https://decrypt.co/3874/stablecoins-secret-how-they-make-profits> [https://perma.cc/LT7D-R9A2].

162. Ashmore, *supra* note 161.

163. Sungyu Kwon, *How Do Stablecoins Make Money?*, BENZINGA (June 2, 2022), <https://www.benzinga.com/money/how-do-stablecoins-make-money> [https://perma.cc/W6WQ-BWU7]; Larsen, *supra* note 161.

164. Larsen, *supra* note 161.

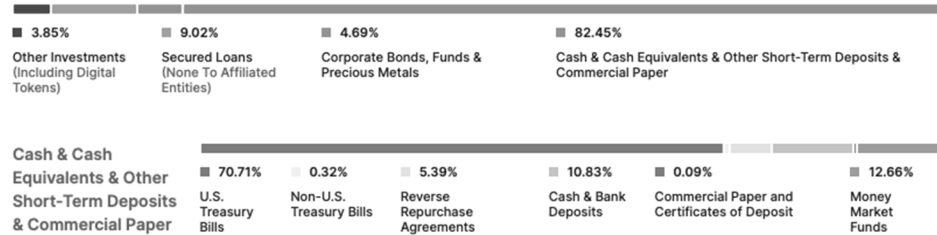
165. Arner et al., *supra* note 2, at 14.

166. See *Transparency*, *supra* note 8.

167. See *id.* (Jan. 18, 2023 screen shot on file with Authors).

Table 1¹⁶⁸

Tether Reserve Asset Breakdown

Reserves Breakdown

Another option available to issuers is to pursue a loss leader strategy.¹⁶⁹ The stablecoin is operated unprofitably, with the aim of attracting large numbers of users into the broader ecosystem which generates earnings. In this model, issuers create profits as payment processors, exchanges, custodians, broker-dealers, and lenders. A stablecoin is synergistic with these activities and can thus be an effective onramp. For example, Gemini, Binance, and other operators of large crypto platforms all issue stablecoins, for which they charge minimal or no fees, but which are integral to their broader portfolio of services.¹⁷⁰

Thus, the business model adopted by issuers is highly consequential. Depending on the pathways pursued to generate profits, the capacity of a stablecoin to absorb volatility and its overall robustness can be significantly impacted. Despite the salience of these characteristics, this province of the world of crypto is characterized by minimal information disclosure and transparency. Typically, it is only after a stablecoin collapses that it becomes clear how its issuers were generating profits. Such an environment clearly raises a multitude of concerns. From a private law perspective, the contractual nexus between issuers and holders and whether holders have proprietary claims in the assets of the issuers are the crucial issues.

168. *Transparency*, TETHER (Sept. 30, 2022), <https://tether.to/en/transparency/#reports> [<https://perma.cc/UN54-5EUD>].

169. See generally Attila Ambrus & Jonathan Weinstein, *Price Dispersion and Loss Leaders*, 3 THEORETICAL ECON. 525, 525 (2008).

170. For Gemini and GUSD, see *Gemini Dollar*, GEMINI, <https://www.gemini.com/dollar> [<https://perma.cc/9RJH-LQSJ>]. For Binance and BUSD, see *BUSD*, PAXOS, <https://paxos.com/busd/> [<https://perma.cc/7PBA-55MB>]. For Binance's business model, see *Binance to Auto-Convert USDC, USDP, TUSD to BUSD (Binance USD)*, BINANCE (Sept. 5, 2022), <https://www.binance.com/en/support/announcement/e62f703604a94538a1f1bc803b2d579f> [<https://perma.cc/BYZ9-JWR8>].

B. The Stablecoin Market

At eight years of age, the stablecoin market is still in its childhood. Between 2014 and 2018, this crypto-asset class was little known, little understood, attracted limited capital, and had few applications.¹⁷¹ Over the past four years, however, stablecoins have multiplied, attracted large capital inflows, and markedly expanded their use cases.¹⁷² Below, we detail this remarkable growth. First, we chart the surge in stablecoin numbers, market capitalization, and trading volumes. Thereafter, we analyze the type of transactions in which these crypto-assets are deployed.

1. Market Capitalization and Trading Volumes

The market for stablecoins was birthed in 2014, when Tether launched USDT.¹⁷³ For four years, this project was the only successful specimen of this crypto-asset category¹⁷⁴ until it was joined by Dai, USDC, GUSD and USDP.¹⁷⁵ Stablecoins pegged to precious metals made their debut in late 2019.¹⁷⁶ As of June 2022, there are more than 50 actively-traded stablecoins.¹⁷⁷ The leading issuers by market capitalization and trading volume are Tether Holdings Limited (issuer of USDT), Circle Internet Financial, Inc. (issuer of USDC), Binance Holdings Limited, in partnership with Paxos Trust Company, LLC (issuer of the PaxDollar/USDP and BUSD), Techteryx, Ltd. (issuer of TUSD), the protocol MakerDAO (issuer of DAI), the protocol FRAX (issuer of FRAX), Gemini Trust Company, LLC (issuer

171. For a brief early history, see *The History of Stablecoins: The Reason They Were Created*, ORIGINSTAMP, <https://originstamp.com/blog/the-history-of-stablecoins-reasons-they-were-created/> [https://perma.cc/2P3M-84GK].

172. See *infra* Section I.B.

173. Christian Catalini et al., *Some Simple Economics of Stablecoins 7* (MIT Sloan Working Paper No. 6610-21, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3985699 [https://perma.cc/68US-5AGJ]; *The Rise of Stablecoins*, COINMETRICS, <https://f.hubspotusercontent00.net/hubfs/5264302/The%20Rise%20of%20Stablecoins.pdf> [https://perma.cc/2WRF-3BZM].

174. Between 2014 and 2017 a few other stablecoin projects were launched but were short-lived. See Jonathan Bier, *A Brief History of Stablecoins*, BITMEX (July 2, 2018), <https://blog.bitmex.com/a-brief-history-of-stablecoins-part-1/> [https://perma.cc/U2XF-SGFW].

175. Catalini et al., *supra* note 173, at 8.

176. *The Rise of Stablecoins*, *supra* note 173, at 4.

177. *Top Stablecoin Tokens by Market Capitalization*, COINMARKETCAP, <https://coinmarketcap.com/view/stablecoin/> [https://perma.cc/JXN7-GCY6].

of GUSD), and Stable Universal Limited (issuer of HUSD).¹⁷⁸ *Figure 1*¹⁷⁹ shows the largest stablecoins by individual market capitalization. Notably, total stablecoin capitalization exploded from \$5.6 billion to \$140 billion between January 1, 2020 and December 9, 2021, and it exceeded the \$150 billion threshold in 2022. *Figure 2a*¹⁸⁰ shows the aggregated stablecoin market capitalization, while *Figure 2b*¹⁸¹ presents the aggregated stablecoin market capitalization of gold-pegged stablecoins. Though USDT continues to dominate, it is increasingly challenged by USDC; moreover, BUSD and DAI appear to have carved their own niche. Throughout 2022, monthly volumes have exceeded \$500 billion, spiking above \$750 billion in May 2022 when TerraUSD collapsed.¹⁸²

For comparison, consider that, as of June 2022, the total U.S. assets in prime money market funds accounted for \$426 billion.¹⁸³

178. Amanda Reaume, *Stablecoin: What It Is & List of Top Stablecoins*, SEEKING ALPHA, <https://seekingalpha.com/article/4468065-what-are-stablecoins> [<https://perma.cc/A9GN-7RZB>]. Daily market capitalization and trading volumes are tracked by Coinmarket.com, Coinmetrics.com, and several other analytics platforms.

179. *Cryptocurrency Prices by Market Cap*, COINGECKO, <https://www.coingecko.com> [<https://perma.cc/HA9P-TQEU>].

180. *Id.*

181. *Today's Cryptocurrency Prices by Market Cap*, COINMARKETCAP, <https://coinmarketcap.com> [<https://perma.cc/AK5A-NTU5>].

182. *See The State of Stablecoins*, BLOCKCHAIN, <https://www.theblockcrypto.com/data/decentralized-finance/stablecoins/adjusted-on-chain-volume-of-stablecoins-monthly> [<https://perma.cc/E6ET-R4YZ>].

183. *Money Market Fund Assets*, INV. CO. INST. (Oct. 13, 2022), <https://www.ici.org/research/stats/mmf> [<https://perma.cc/D8QQ-G7YC>].

Figure 1¹⁸⁴
 Stablecoin Market Capitalization (Individualized)
 2017–2022

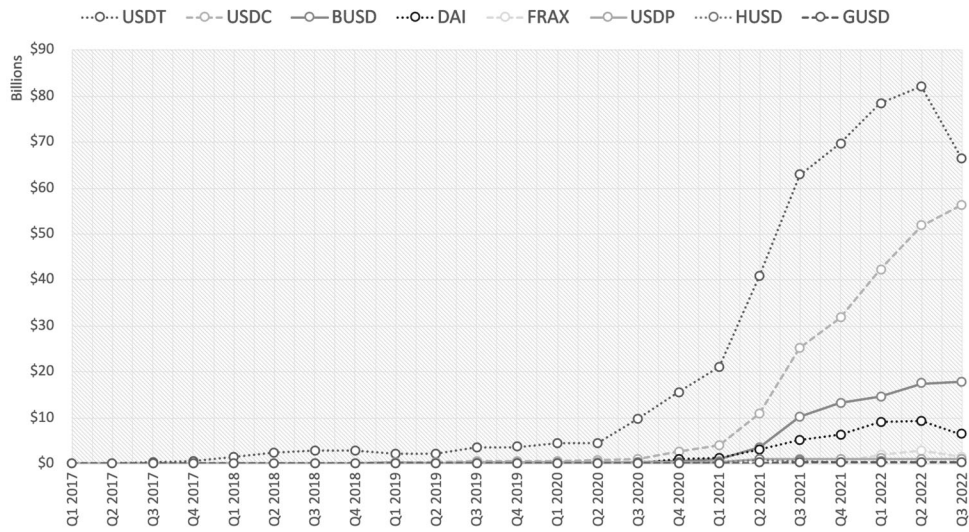
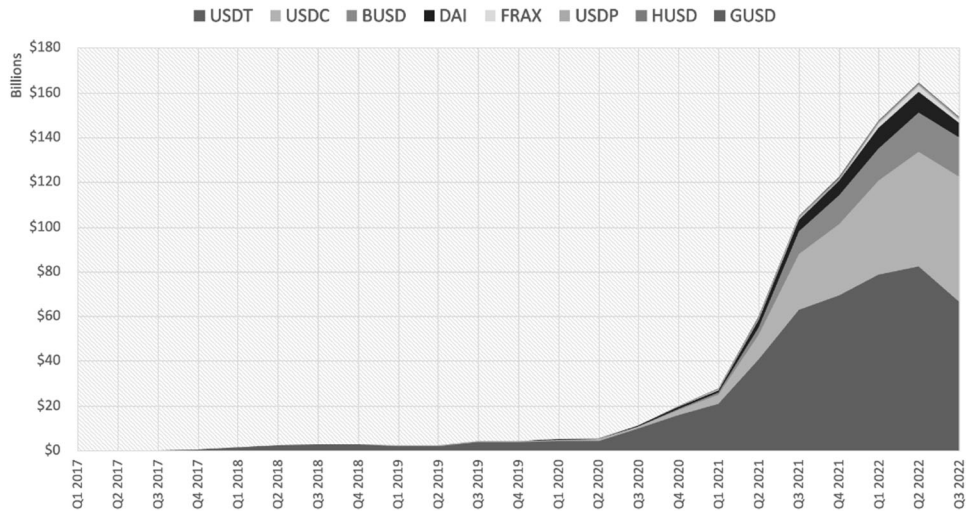


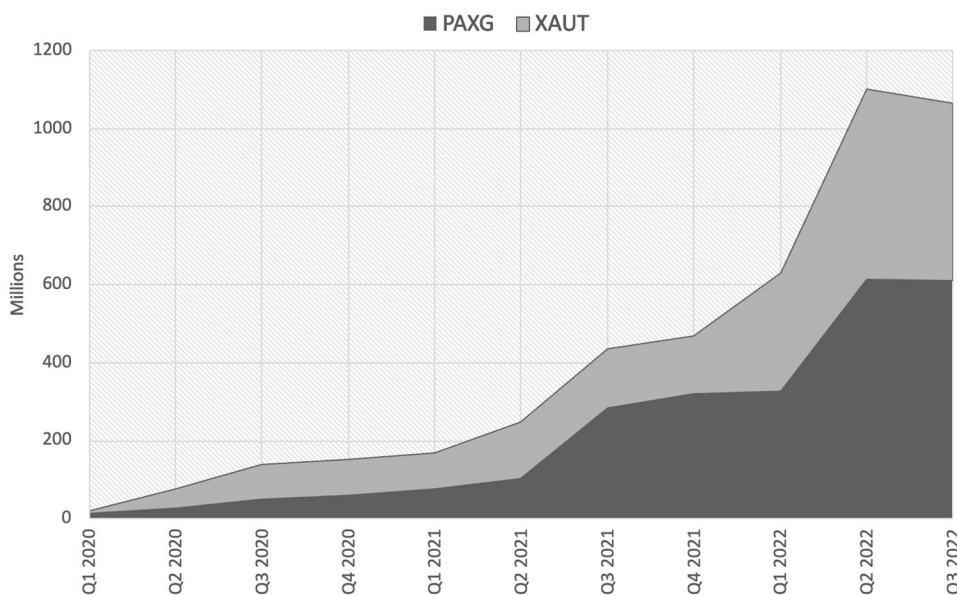
Figure 2¹⁸⁵
 Stablecoin Market Capitalization (Aggregated)
 2017–2022



184. *Cryptocurrency Prices by Market Cap*, *supra* note 179.

185. *Id.*

Figure 2b¹⁸⁶
 Market Capitalization of Gold-Pegged Stablecoins (Aggregated)
 2017–2022



2. Market Transactions

The growth in market capitalization of stablecoins reflects their growing adoption. Their original and still-predominant use case is as a base currency for trading other crypto-assets.¹⁸⁷ Individuals, investment funds, and market makers that deal in bitcoin, ether, NFTs, and other volatile coins avoid keeping their trading capital in fiat currencies, as these necessitate the use of slow and costly banks, brokers, and clearing houses, which lack effective interfaces with DLT networks.¹⁸⁸ By holding their assets in stablecoins, these market participants retain their resources within the DLT ecosystem, enabling them to trade in and out of their positions rapidly and settle transactions with their counterparties directly. Moreover, large trading platforms—such as Coinbase, Binance, and Gemini—charge extremely low fees for transactions in these crypto-assets compared to fiat currencies, as they can cut out

186. *Id.*

187. *Supra* note 21, at 8.

188. *See id.*; *see also* Bullmann et al., *supra* note 89.

traditional financial institutions and not share revenues.¹⁸⁹ It should also be noted that using stablecoins as trade capital makes it possible to evade *know-your-customer* (“KYC”) and *anti-money laundering* (“AML”) obligations, which are almost inescapable when utilizing fiat currencies deposited with licensed banks and brokers in most jurisdictions.¹⁹⁰

Over the past three years, stablecoins have acquired a prominent role in DeFi.¹⁹¹ DeFi is a loosely used term to describe a broad range of financial products and services accessible through DLT networks and operated through smart contracts.¹⁹² According to their proponents, the key advantages of these offerings are that they are not tied to established financial institutions and they offer returns vastly exceeding those of traditional investments.¹⁹³ For example, some DeFi providers act as platforms that help match prospective crypto asset lenders and borrowers.¹⁹⁴ Others offer high yields in return for deposits of crypto-assets which they then either lend or invest discretionally; examples include Cred, Inc. and Celsius.¹⁹⁵ Others still create “decentralized autonomous organizations” (“DAOs”) that allow persons to pool their crypto-assets and then invest automatically based on predetermined criteria; examples include Ethereum and Slock.it DAO.¹⁹⁶ DeFi schemes also allow persons to earn returns by contributing crypto-assets into pools which are used as liquidity reserves for exchanges and other platforms, such as in the case of Uniswap.¹⁹⁷

Though there are significant differences, a key building block common to many DeFi offerings is that persons lend their crypto-assets for a variable time lapse, either directly or through an intermediary, in exchange for a predetermined return rate (these schemes are loosely referred to as *yield farming*).¹⁹⁸ Crucially, if the crypto-assets deployed to farm yield are highly

189. *The Complete Guide to Coinbase Fees*, CRYPTOPRO, <https://cryptopro.app/coinbase-fees-guide/> [<https://perma.cc/RV4C-PWPF>] (“Coinbase waives fees when converting from USD to its native stablecoin USD Coin (USDC).”).

190. See Bullmann et al., *supra* note 89, at 37 (“[A]necdotal evidence shows that some of them do so for the possibility of avoiding traditional financial rails and the identity checks associated with them.”).

191. See *supra* note 21.

192. See *DeFi Beyond the Hype*, *supra* note 53, at 2.

193. See *id.* at 3–5.

194. See *id.* at 10–11.

195. See *id.* at 12–14.

196. See Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO, Release No. 81207, 117 SEC Docket 5 (July 25, 2017).

197. See *Frequently Asked Questions*, UNISWAP, <https://uniswap.org/faq> [<https://perma.cc/L3WG-8R3H>].

198. See generally *DeFi Beyond the Hype*, *supra* note 53.

volatile, there is an elevated risk that a decline in their price might erode most, if not all, prospective returns. For example, if a person lends bitcoin through a DeFi service which promises a 15% yield after one year, any such return will be inconsequential if the underlying crypto-asset suffers a 15% price decline during that time period. Stablecoins largely alleviate this issue. As their price is tied to that of their peg, using these crypto-assets as trading capital for yield farming protects against downside price volatility. For example, depositing stablecoins pegged to the USD, such as USDC or USDT, with a crypto lender, such as BlockFi, ensures that any accrued returns will be consistent in dollar terms.

Alongside their utilization as a base currency for crypto trading and DeFi, stablecoins have started to gain traction in retail transactions. Increasingly, these crypto-assets are being used for small-scale forex transfers, as both legal and natural persons take advantage of the low fees, rapid execution, and intuitive user interfaces available to send stablecoins across borders.¹⁹⁹ This is especially true in jurisdictions where access to banking services is limited, expensive, or both. Moreover, there are distributed applications (“dApps”) operating on DLT networks that provide services to the general public and accept payment in stablecoins.²⁰⁰ In addition, there is growing anecdotal evidence of individuals using stablecoins as a hedge to mitigate the depreciation of their domestic fiat currency due to inflation.²⁰¹ By contrast, the adoption of these crypto-assets for in-person commercial dealings continues to be extremely limited.²⁰²

Whether used for trading, investment, lending, borrowing, or various kinds of DeFi transactions, stablecoins continue to capture headlines and the focus of policymakers and market players. Having furnished a lay of the land above, Part II that follows problematizes stablecoins from a private law perspective. Specifically, we unearth a fundamentally overlooked weakness in the foundation of nearly all stablecoins: the tentative and sometime nonexistent right of coinholders to the much-lauded reserve assets.

199. Gordon Y. Liao & John Caramichael, *Stablecoins: Growth Potential and Impact on Banking*, BD. OF GOVERNORS OF THE FED. RSRV. SYS. 7 (Jan. 2022), <https://www.federalreserve.gov/econres/ifdp/files/ifdp1334.pdf> [<https://perma.cc/2GRC-Y4FQ>].

200. See Bullmann et al., *supra* note 89, at 37–38 (providing a quantitative and qualitative assessment of dApps accepting stablecoins).

201. See Leigh Cuen, *Brazil’s Ailing Economy Is Helping Dollar-Pegged Stablecoins Find Traction*, COINDESK (July 8, 2020), <https://www.coindesk.com/business/2020/07/08/brazils-ailing-economy-is-helping-dollar-pegged-stablecoins-find-traction/> [<https://perma.cc/6HJP-49KS>].

202. See Gorton & Zhang, *supra* note 24, at 6 (“To date, market adoption of stablecoins as money has been limited . . .”).

II. STUDY OF STABLECOIN TERMS OF SERVICE

Since our question here is one of private law, we studied the terms of service for the leading stablecoin issuers. We collected contracts used by seven stablecoin issuers and reviewed their terms and provisions. This review is animated by the premise that the agreements undertaken in these terms of service set the “law between the parties”²⁰³ to which courts look, at least in the first instance, when defining the existence and scope of parties’ rights.²⁰⁴

In the agreements we studied, individuals are said to bind themselves in the form of what are known as *sign-in wrap* contracts.²⁰⁵ Individuals must create an account with the issuer to use the service.²⁰⁶ And, in the process of creating the account or signing into the account, the individual is told that they are agreeing to terms of service or amendments thereto²⁰⁷ We note that normative questions about the enforceability and use of online terms of service is much contested in the literature.²⁰⁸ We do not seek in this project to enter that debate; rather, we wish to acknowledge it before moving on to the discussion of the various contents of the terms of service that follows.

Below, we draw insights from these online agreements to do two things. First, we seek to understand the way parties articulate the contours of their rights and duties vis-à-vis each other with regard to the stablecoins and the redemption rights (including related to reserve assets). Second, we compare what these firms say in their terms of service with what they assert in their

203. *Tompkins v. Perrin*, 13 Teiss. 52, 53 (La. Ct. App. 1916).

204. Jay Lawrence Westbrook & Kelsi Stayart White, *The Demystification of Contracts in Bankruptcy*, 91 AM. BANKR. L.J. 481, 489–90 (2017).

205. Colin P. Marks, *Online and "As Is"*, 45 PEPP. L. REV. 1, 9–11 (2018); *Berkson v. Gogo LLC*, 97 F. Supp. 3d 359, 366 (E.D. N.Y. 2015).

206. Marks, *supra* note 205, at 9–12; *Sarchi v. Uber Techs., Inc.*, 268 A.3d 258, 267 (Me. 2022); *McKee v. Audible, Inc.*, No. CV 17-1941-GW(Ex), 2017 WL 4685039, at *6 (C.D. Cal. July 17, 2017).

207. Marks, *supra* note 205, at 9–12; *In re Juul Labs, Inc.*, Antitrust Litig., 555 F. Supp. 3d 932, 950 (N.D. Cal. 2021).

208. See generally Margaret Jane Radin, *BOILERPLATE: THE FINE PRINT, VANISHING RIGHTS, AND THE RULE OF LAW* (2014); Nancy S. Kim, *Clicking and Cringing*, 86 OR. L. REV. 797 (2007); Richard A. Epstein, *Contract, NOT REGULATION: UCITA AND HIGH-TECH CONSUMERS MEET THEIR CONSUMER PROTECTION CRITICS*, IN *CONSUMER PROTECTION IN THE AGE OF THE ‘INFORMATION ECONOMY’* 205, 208-14 (Jane K. Winn ed., 2006). We do not seek in this project to enter that debate; rather, we wish to acknowledge it before moving on to the descriptive discussion that follows. See Nancy S. Kim, *Wrap Contracts: Foundations and Ramifications* (Oxford University Press forthcoming), SSRN, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2322255 [<https://perma.cc/459E-FSY Y>]; see also Adam J. Levitin et al., *The Faulty Foundation of the Draft Restatement of Consumer Contracts*, 36 YALE J. ON REG. 447 (2019).

front-facing materials, including on their website frontpages, online blogs, and online FAQs.

A. Stablecoin Issuers and ToS

For our terms of service analysis, we focused on the entities in control of the stablecoins with the largest market capitalization and trading volumes. Those firms are Tether,²⁰⁹ Circle,²¹⁰ Binance Holdings (in partnership with Paxos),²¹¹ Techteryx,²¹² the protocol MakerDAO,²¹³ Gemini,²¹⁴ and Stable.²¹⁵ The only market leader we excluded was FRAX, largely because there was almost no publicly available information about this issuer's inner workings as compared to all the others.²¹⁶

The terms of service for each were accessible through the issuer's website; however, not all of them were easily findable. Links to each agreement could be found at the very bottom of the frontpage of the company's website, but some sites required lengthy scrolling before reaching the bottom.²¹⁷ Also, the URL-linked words used to describe the agreement varied. While some were "Terms of Service"²¹⁸ or "Terms,"²¹⁹ others were "Legal Terms"²²⁰ or "Legal & Privacy."²²¹ Still, others were "Legal Agreements"²²² or "User

209. *Legal, Terms of Service*, TETHER, <https://tether.to/en/legal/#terms-of-service> [<https://perma.cc/YXU8-G7KU>] (Sept. 2, 2022) [hereinafter Tether ToS].

210. *Legal & Privacy*, CIRCLE, <https://www.circle.com/en/legal/usdc-terms> [<https://perma.cc/JC8M-GY5Z>] (Dec. 20, 2022) [hereinafter Circle ToS].

211. *General Terms and Conditions*, PAXOS, <https://paxos.com/2019/03/29/general-terms-and-conditions/> [<https://perma.cc/YRH3-F4XP>] (Oct. 31, 2022) [hereinafter Paxos ToS].

212. *TRUEUSD Terms of Service*, TRUEUSD, <https://test.trueusd.com/terms-of-use> [<https://perma.cc/79N9-5FES>] (Nov. 12, 2020) [hereinafter Techteryx ToS].

213. *Terms of Service*, OASIS, <https://oasis.app/terms> (last updated July 11, 2022) [hereinafter DAI ToS].

214. *User Agreement*, GEMINI, <https://www.gemini.com/legal/user-agreement#section-welcome-to-gemini> [<https://perma.cc/9YQW-NWU4>] (Dec. 14, 2022) [hereinafter Gemini ToS].

215. *Stable Universal Terms and Conditions*, STABLE, <https://support.stcoins.com/hc/en-001/articles/4417494229015> (June 29, 2022) [<https://perma.cc/WN98-UBM9>] [hereinafter Stable ToS].

216. *See generally* FRAX, <https://frax.finance> [<https://perma.cc/35BW-BKDK>].

217. *See* TETHER, <https://tether.to/en/> [<https://perma.cc/U4UB-M2HW>]; CIRCLE, <https://www.circle.com/en/> [<https://perma.cc/GVY5-QKHY>].

218. TRUEUSD, <https://trueusd.com> [<https://perma.cc/96MS-Z9PJ>].

219. OASIS, <https://oasis.app/#multiply> [<https://perma.cc/7J8R-END5>].

220. TETHER, *supra* note 209.

221. CIRCLE, *supra* note 210.

222. GEMINI, <https://www.gemini.com> [<https://perma.cc/LY8B-VMYJ>].

Agreements.”²²³ In some cases, the linked text was in a very small font and the font color easily faded into the background.²²⁴

Additionally, the terms of service were not always consolidated into one single webpage or frame.²²⁵ For example, Tether breaks apart its various agreements into six different tabs, appearing as separate and distinctly named contracts—terms of service, privacy policy, anti-spam policy, law enforcement requests, cookies policy, and risk disclosures.²²⁶ Circle and Paxos use a similar multi-tabbing of contracts.²²⁷ The terms of service for MakerDAO are even more labyrinthine. They are divided in seven tabs and also refer to separate terms of service for the Dai Foundation and the Maker Foundation.²²⁸

Lastly, we note that our study is a snapshot in time. The results below represent the terms of service as they existed when we studied them. Many of these firms change their terms of service periodically, and often they do so without giving formal notice to the holders of the coins. Indeed, the terms of service for these various coins explicitly state that changes are permissible without any kind of affirmative notice.²²⁹ This means that coinholders may find their rights affected (in ways both large and small) without ever knowing.

B. The Results

In collecting information from the various Terms of Service, we focused on some key topics. First, we looked for where the agreements discussed the right of redemption. This included not only the fact that there was a right to redeem, but also whether the right was absolute or qualified. If it was qualified, we looked to the conditions and the degree to which the right could be suspended. When it could, we observed that sometimes the firms would attach enumerated conditions and, at other times, discretion was left entirely to the issuer. We then looked to provisions that governed who could redeem.

223. STABLE, <https://www.stcoins.com> <https://perma.cc/A2JU-3TPZ>].

224. PAXOS, <https://paxos.com> [<https://perma.cc/H6XV-85K5>].

225. True, Gemini, and DAI generally used a single or at least a primary frame for their terms of Service. See Techteryx ToS, *supra* note 212; Gemini ToS, *supra* note 214; DAI ToS, *supra* note 213.

226. Tether ToS, *supra* note 209.

227. Circle ToS, *supra* note 210; Paxos ToS, *supra* note 211.

228. See THE DAI FOUND., <https://daifoundation.org/terms-of-service/> [<https://perma.cc/P3WY-ZJNY>]; MAKER FOUND., <https://foundation.app/terms> [<https://perma.cc/D34Z-MSPN>].

229. See, e.g., Stable ToS, *supra* note 215, § 4; Tether ToS, *supra* note 209; Circle ToS, *supra* note 210, § 26; Gemini ToS, *supra* note 214; Paxos ToS, *supra* note 211, § 1.7.

In all cases, simply being the holder of the stablecoin was not enough—an account with the issuer was always necessary.

Next, we looked to the terms of service for information on whether the reserve assets were held in a manner that would protect them from the claims of the issuer’s other creditors in bankruptcy. In some cases, the reserve assets were discussed only in passing. In other cases, there was more explicit information about the nature of the relationship. For example, some of the issuers assert that they hold the reserve assets solely for the benefit of the coinholders. These statements suggest that the issuer acts as a custodian or a bailee and has no equitable interest in the underlying reserves. Yet as we discuss in Part III, these assertions might overstate the protection of the reserve assets. In some terms of service, the issuers retained control over the assets, suggesting that they are not acting as a mere custodian. In other cases, the nature of the relationship appeared to be different depending on the composition of the assets. If the reserve assets were cash, then they were held in custodial accounts for the benefit of the coinholders. But if they were securities, then the reserve assets appeared to be titled in the name of the issuer. In other cases, we could find little information one way or another. We connect these varying levels of custodial relationship to bankruptcy implications in Part III that follows.

We were also interested in what the terms of service had to say about the possible risks of engaging with the issuer or with stablecoins more generally. In nearly all of the terms of service there was a broad exculpatory provision whereby the coinholder waived any right to sue the issuer on account of, among other things, loss of the coin due to an account suspension or shut down (as well as any other tech failure). Additionally, all the firms disclaimed any representations or warranties as to the quality or fitness of the stablecoin or any other related services provided by the platform.

Table 2 below provides a composite view of several of the more salient provisions in the terms and conditions that we reviewed, largely as they existed on March 12, 2022.²³⁰

230. The discussion of Circle’s Terms of Service reflects significant changes from June 2022, discussed in more detail below.

Table 2²³¹**Summary Table of Terms and Conditions by Topic**

	USDT: Tether	USDC: Circle	USDP/BUSD: Paxos	TUSD: Techteryx	GUSD: Gemini	HUSD: Stable	DAI: MakerDAO
Unequivocal redemption?	Refusal/ delay in some circumstances and/or at discretion				Yes	Refusal at discretion	Yes - but not for fiat
Account required to redeem?	Yes						
Disclaimer of warranties?	Expressly Disclaim all reps & warranties						Disclaims that tech will be uninterrupted or error free
Exculpatory provision?	Yes						N/A – issuer not an entity
Unclaimed property surrendered to govt due to inactivity?	Not mentioned	Yes		Not Mentioned	Yes		No
FDIC pass-through insurance?	No		Opt-in, conditions apply	Not mentioned	Conditions apply	Unclear	No
Issuer discretion in use of reserve assets?	Yes	In interest-bearing accounts or yield-generating instruments	Unclear			Yes	No – except for auto-liquidation
Capacity in which assets are held?	Property of the Issuer	Property of the Issuer	Unclear; possibly property of the coinholder	Unclear	Unclear; possibly property of the coinholder	Unclear	Self-Custody

The results of the study are analyzed for purposes of a stablecoin collapse or issuer's bankruptcy in Part III. The information with respect to control over the composition and use of the reserve assets, as well as the nature of how the issuer holds the reserve assets, plays important roles in shaping the rights of coinholders facing the insolvency of the issuer in a bankruptcy proceeding. To foreshadow what is to come, there is a significant lack of clarity on many

231. See Tether ToS, *supra* note 209; Circle ToS, *supra* note 210; Paxos ToS, *supra* note 211; Techteryx ToS, *supra* note 212; Gemini ToS, *supra* note 214; Stable ToS, *supra* note 215; DAI ToS, *supra* note 213.

of these important issues relative to the reserve assets, which, in turn, highlights how opaque the stablecoin market really is from a user perspective.

As we noted in Part I's discussion of stablecoin issuer types, coins issued by actual entities create a counterparty relationship with the coinholder.²³² Thus, for USDT, USDC, USDP, BUSP, TUSD, GUSD, and HUSD, the terms of service, even when unclear, provide more finely tuned contours as to the rights and duties of the parties compared to a coinholder's relationship to DAI. This is because, as noted in Part I, there is no business entity issuer.²³³ Accordingly, there are actually no terms of service. Instead, there is a white paper that sets out the mechanics of the DAI protocol;²³⁴ it is not a contract like the others. This makes sense, so we argue, since MakerDAO is not a party that could enter a contract with someone else—it's just a protocol. There is therefore no counterparty on the other side of the transactions from the coinholder. This bears out in the DAI white paper. Individuals deposit a certain amount of crypto-assets (primarily ether)²³⁵ with the MakerDAO protocol into what are known as *Maker Vaults*. Thereafter, they can discretionally withdraw their preferred amount of DAI, but only up to 66% of the dollar value of the deposited ether.²³⁶ In this way, DAI is always overcollateralized. At any moment in time, a coinholder can return DAI to the MakerDAO protocol and receive back the equivalent dollar amount of ether. This is dissimilar to the right of redemption for the other stablecoins. One does not get fiat currency in return. Rather, one merely gets back whatever crypto-asset was initially deposited. Also, as there is no counterparty entity, there is no exculpatory provision—the protocol cannot have legal liability because it has no legal personhood. Indeed, the MakerDAO white paper indicates that the vaults where the collateral is held “are inherently not custodial”—indicating that the protocol holds the collateral for no one because there is no entity that could be custodial.²³⁷

232. See *supra* Part I.

233. See *supra* Part I.

234. *The Maker Protocol: MakerDAO's Multi-Collateral Dai (MCD) System*, MAKERDAO, <https://makerdao.com/en/whitepaper/#self-sovereign-money-generation> [https://perma.cc/JS5H-THBS].

235. For a complete list of crypto-assets compatible with MakerDAO, see *A Guide to Dai Stats*, MAKERDAO, <https://blog.makerdao.com/a-guide-to-dai-stats/> [https://perma.cc/Z8YJ-8BWC].

236. *MakerDAO: What Is It and How Does It Work?*, REAL VISION (June 10, 2022, 6:18 PM), <https://www.realvision.com/blog/makerdao-what-is-it-how-does-it-work> [https://perma.cc/WZS6-KFXB].

237. *The Maker Protocol*, *supra* note 234.

Rather, “each user has complete and independent control over their deposited collateral”²³⁸

C. Comparison to Front-Facing Materials

For comparison purposes, we also wish to draw attention to the front-facing materials that these companies present to the public. Specifically, we looked to the websites (particularly front pages), blogs, and FAQs for how the companies described various aspects of the stablecoins they issue, their pegs, and the right of redemption. We then compared these statements to information in the corresponding terms of service and attestation/audit statements, as well as those located in the less prominent portions of their website.

The results revealed varying degrees of misalignment and sometimes outright contradictions between one set of statements and another. For example, Tether states on its front page that holders of its stablecoin enjoy “unparalleled liquidity.”²³⁹ This should mean that one can turn USDT into cash very easily.²⁴⁰ Yet, in its terms of service, Tether tells a very different story. Significantly, Tether prohibits redemptions for any U.S. citizens, any U.S. companies, or anyone who “conducts business in the State of New York.”²⁴¹ For those who can redeem, the terms require an account with the company in order to redeem USDT, and the company reserves the right to suspend or make redemption contingent based on a number of factors.²⁴² Not only this, but the firm charges fees and can set a minimum redemption amount.²⁴³ Tether’s terms of service also reserve to the company the right to “redeem Tether Tokens by in-kind redemptions of securities and other assets held in the Reserves.”²⁴⁴ This suggests that rather than giving the holder fiat currency in exchange for USDT, Tether can provide a different asset altogether—and certainly not all “securities and other assets” are necessarily liquid.

238. *Id.*

239. TETHER, <https://tether.to/en/> [<https://perma.cc/TFR8-S7SJ>].

240. *Liquidity*, BLACK’S LAW DICTIONARY (11th ed. 2019) (“The quality, state, or condition of being readily convertible to cash.”).

241. Tether ToS, *supra* note 209, §§ 3.2–3.3.

242. *Id.* § 2 (“The Site may suspend or terminate the Services to you, your Digital Tokens Wallet, or to any of your Digital Tokens Address at its sole discretion”); *id.* § 5 (“You acknowledge that Tether may delay or suspend redemption under various circumstances, including *but not limited to*, in the event that Tether determines that you have engaged in a Prohibited Use”) (emphasis added).

243. *See supra* Section I.A.3.

244. Tether ToS, *supra* note 209, § 3.

Tether also heavily emphasizes that its coins “are 100% backed 100% by by [sic] Tether’s reserves.”²⁴⁵ However, in 2021, the CFTC fined Tether for misleading the public when it emerged that Tether’s reserves had only been sufficient to cover all USDT in circulation for 27.6% of the days in a 26-month sample time period from 2016–2018.²⁴⁶ Moreover, Tether’s terms of service provide that “[t]he composition of the Reserves used to back Tether Tokens is within the sole control and at the sole and absolute discretion of Tether.”²⁴⁷ As shown in Part I, some of the assets held in Tether’s reserves are extremely volatile (e.g., crypto-assets, commodities), calling into question the “100%” assurance, in the event of a market downturn.²⁴⁸ It is telling that, in May–June 2022, as the price of bitcoin and other crypto-assets included in Tether’s reserves declined precipitously, there were record redemptions of USDT as confidence in this stablecoin eroded.²⁴⁹

Circle provides that USDC is “like other digital content —[it] . . . can be exchanged in the same way we share content, and [is] cheaper and more secure than existing payment systems.”²⁵⁰ Yet, as the terms of service indicate, using USDC is a bit more involved than merely sharing a link (which is how most content is circulated between individuals) and does, in fact, actually involve some meaningful costs. Aside from paying any applicable fees as part of the redemption,²⁵¹ one must also have an account with Circle to redeem the coin.²⁵² Further, unlike the official U.S. payment

245. *Id.*

246. Press Release, Commodity Futures Trading Comm’n, 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/Y3E3-4JPB>].

247. Tether ToS, *supra* note 209, § 3.

248. *See supra* Part I.

249. Ryan Browne, *Investors Withdraw over \$7 Billion from Tether, Raising Fresh Fears About Stablecoin’s Backing*, CNBC (May 17, 2022, 9:21 PM), <https://www.cnbc.com/2022/05/17/tether-usdt-redemptions-fuel-fears-about-stablecoins-backing.html> [<https://perma.cc/VXY2-6LUE>].

250. *Circle Names Dante Disparte Chief Strategy Officer, Head of Global Policy*, CIRCLE (Apr. 12, 2021), <https://investor.circle.com/corporate-news/news-details/2021/Circle-Names-Dante-Disparte-Chief-Strategy-Officer-Head-Of-Global-Policy/default.aspx> [<https://perma.cc/XR5D-DFCN>].

251. Circle ToS, *supra* note 210, § 13 (“[Circle] will always redeem such USDC at a rate of one USD (\$1) per one (1) USDC, less fees where applicable.”); *see also Circle Account Fee Schedule*, CIRCLE (Aug. 4, 2022), <https://support.usdc.circle.com/hc/en-us/articles/4416914713108> [<https://perma.cc/5854-43ET>].

252. Circle ToS, *supra* note 210, § 2 (“You may not redeem USDC with Circle unless and until you open a Circle Account.”).

system run by the banking sector and the Federal Reserve,²⁵³ coinholders agree “not to hold Circle accountable” for losses related to “technical difficulties” or “sophisticated [cyber] attacks.”²⁵⁴ Circle also states on its website that USDC is “[a]lways redeemable 1:1 for U.S. dollars” and one can “easily convert back to local fiat currencies.”²⁵⁵ But again, the terms of service tell a different story about how unequivocal the right to *always* redeem really is.²⁵⁶ Circle can “change, suspend, or discontinue any aspect of the USDC Services at any time . . . without notice and without liability” including by declining “to process any issuance or redemption without prior notice and may limit or suspend your use of one or more USDC Services at any time, in our sole discretion.”²⁵⁷ Stable Universal (issuer of HUSD) also emphasizes the “easily redeemable” nature of its coin, yet in its terms of service, the company says it can—at its “sole and absolute discretion”—decide to “suspend, close or terminate your Account [and] refuse to let you purchase or redeem your crypto-assets.”²⁵⁸ One also must create an account with Stable to exercise redemption rights.²⁵⁹

Paxos states that an individual can “[c]onvert USDP to equivalent US Dollars at any time,” but its terms of service provide some barriers and limitations to this broad statement.²⁶⁰ The terms indicate that one needs an account to redeem.²⁶¹ Also, the company can impose redemption minimums and can suspend redemptions with a “reasonable justification.”²⁶² In a partially similar fashion, Gemini states on its blog that “one stablecoin can always be redeemed for fiat, like U.S. dollars in the case of GUSD,”²⁶³ but

253. For a discussion of the rights of individuals who suffer payment losses within this system, see U.C.C. §§ 3–4 (AM. L. INST. & UNIF. L. COMM’N 2002). *See also* Electronic Fund Transfer Act of 1978, 15 U.S.C. §§ 1693–1693r.

254. Circle ToS, *supra* note 210, § 13.

255. USDC, CIRCLE, <https://www.circle.com/en/usdc> [<https://perma.cc/8MW7-G3A3>] (last visited Oct. 31, 2022).

256. Circle ToS, *supra* note 210.

257. *Id.* § 17.

258. Stable ToS, *supra* note 215, § 9.1.

259. *Id.* § 3.1.

260. *Pax Dollar*, PAXOS, <https://paxos.com/usdp/> [<https://perma.cc/WY43-8JFV>] (last visited Oct. 31, 2022) (“Redeemable one-to-one[.] Convert USDP to equivalent US Dollars at any time. Paxos offers unparalleled assurance to customers that their USDP is backed one-to-one by the dollar.”).

261. *See* Paxos ToS, *supra* note 211, §§ 1.2, 3, 4.4 (stating that one needs to be a “Member” and thus have an “Account”).

262. Assumedly what is a sufficient justification is at the discretion of Paxos. *See id.* § 4.1.13.

263. Team Gemini, *Understanding Stablecoins: They’re Not All Created Equal*, GEMINI BLOG (May 13, 2022), <https://www.gemini.com/blog/understanding-stablecoins-theyre-not-all-created-equal> [<https://perma.cc/YA3N-A8LA>].

the terms of service indicate that an account with the company is required to redeem.²⁶⁴

We do not address whether any of these prominent front-facing statements amount to contractual undertakings that supplement the applicable terms of services, are representations that could be negligent or fraudulent, or are mere puffs. Rather, we simply wish to observe that there are varying degrees of distance between what is conspicuously placed in many issuers' public-facing materials and what is actually provided for in the fine print of their terms of service and related legal documents. While beyond the scope of this Article, there may well be deception claims present that could be brought under state UDAP laws or by the Federal Trade Commission.²⁶⁵

III. WHEN STABLECOINS FAIL

With a foundation in stablecoin markets in one hand and a picture of stablecoin terms of service in the other, we now turn to what happens when stablecoins fail.

The answer to this question comes in multiple parts because stablecoin issuers are not monolithic; one stablecoin failure will be different from the next. Exploring the various ways stablecoins can fail advances the descriptive goals of this Article as much as our normative ends. In fact, during the writing of this paper, the stablecoin known as Terra collapsed.²⁶⁶ Popular depictions of this event might lead some to assume that the failure of Terra offers a generally applicable blueprint of what may happen if other stablecoins suffered a similar fate.²⁶⁷ As we show below, this would be incorrect.

We start this Part III with a brief exploration of the various types of stablecoin failures. With that task behind us, we then move on to the thorny question of who, if anyone, gets to claim the reserve assets. We do this by placing the structural elements identified in Part I and the study of the terms of service offered in Part II within the framework of bankruptcy law. The results, as we show in the following pages, paint an uneasy picture for coinholders.

264. Gemini ToS, *supra* note 214 (“Only Gemini Customers may sell Gemini Dollars for U.S. dollars at Gemini.”).

265. See 15 U.S.C. § 45 (providing the FTC’s UDAP power); see, e.g., CAL. BUS. & PROF. CODE § 17200 (2022) (providing an example of a state UDAP statute).

266. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

267. See generally Peter Weber, *The Stablecoin Cryptocurrency Crash, Explained*, THE WEEK (June 17, 2022), <https://theweek.com/briefing/1014448/the-stablecoin-cryptocurrency-crash-explained> [<https://perma.cc/QK3P-KHW9>].

A. *The Heterogeneity of Stablecoin Failures*

As we described in Part I, there is great diversity among stablecoin business models. Decentralized stablecoins, like DAI, do not feature a contractual counterparty.²⁶⁸ If these software protocols fail, coinholders will have no private law rights to assert because there is no counterparty against which to assert them. Dual-coin stablecoins might feature counterparties, yet they similarly offer no protection to coinholders in the event of their collapse. These coins are not backed by reserves; rather, they are dependent on market participants attributing value to the secondary coin that serves to stabilize the primary coin.²⁶⁹ Holders of the primary coin assume the risk that their coins will lose the peg if the secondary coin falters and accept that they have no recourse against the issuer.

Several dual-coin stablecoins, including Iron/Titan, USDX/Lighthouse, and TerraUSD/Luna have collapsed catastrophically, resulting in total losses for holders of both the primary and the secondary coin.²⁷⁰ Each failure occurred following an unexpected and sharp fall in the market price of either the primary or the secondary coin.²⁷¹ These drops created a negative feedback loop in which declines in one coin fueled declines in the other, causing a “death spiral” that ultimately pushed both coins to zero.²⁷² The recent TerraUSD/Luna crash offers a poignant example.

TerraUSD was a stablecoin pegged to the U.S. dollar.²⁷³ The price stabilization mechanism of TerraUSD relied on a secondary coin, Luna.²⁷⁴ Interacting with a smart contract, holders of TerraUSD coins could always

268. See *supra* Section I.A.2.; *The Maker Protocol*, *supra* note 234.

269. See *supra* Part II.

270. Specifically on the TerraUSD/Luna collapse, see sources cited *supra* note 14.

271. Clements, *supra* note 29; Tech Desk, *Luna-Terra Crash: A Brief History of Failed Algorithmic Stablecoins*, INDIAN EXPRESS (May 26, 2022, 4:43 PM), <https://indianexpress.com/article/technology/crypto/luna-terra-crash-a-brief-history-of-failed-algorithmic-stablecoins-7934293/> [<https://perma.cc/LCM2-YEEV>]; Trung Phan, *TerraUSD's Crash Won't Kill Dreams of an Algorithmic Stablecoin*, BLOOMBERG (May 17, 2022, 4:00 AM), <https://www.bloomberg.com/opinion/articles/2022-05-17/terrausd-s-crash-won-t-kill-dreams-of-an-algorithmic-stablecoin> [<https://perma.cc/YFM6-E9CA>]; Ryan S. Gladwin, *Panics and Death Spirals: A History of Failed Stablecoins*, FAST CO. (May 14, 2022), <https://www.fastcompany.com/90751716/panics-and-death-spirals-a-history-of-failed-stablecoins> [<https://perma.cc/SXH6-TG8B>]. For a specific explanation of death spirals of stablecoins, see Catalini & de Gortari, *supra* note 24, at 8–12.

272. In some cases, it was due to a generalized and sharp decrease in crypto-assets prices; in others, outsized holdings were suddenly liquidated at times in which there was little liquidity. Clements, *supra* note 29, at 137–38; see Catalini & de Gortari, *supra* note 24, at 8–12.

273. Levine, *supra* note 46; Sorkin et al., *supra* note 14.

274. Sandor & Genç, *supra* note 14.

trade them for \$1 worth of Luna and vice-versa.²⁷⁵ In early May 2022, the price of TerraUSD fell unexpectedly, after several large transactions in which the coin was traded for below \$1 per coin in the open market.²⁷⁶ Initially, arbitrageurs reacted by acquiring TerraUSD coins and exchanging them for \$1 worth of Luna (thus making a profit).²⁷⁷ Nevertheless, the liquidations of TerraUSD continued unabated and started overtaking the pace at which arbitrageurs were exchanging it for Luna.²⁷⁸ When this became apparent, holders of both TerraUSD and Luna alike started to trade their coins for other crypto-assets, thereby exiting the TerraUSD/Luna ecosystem.²⁷⁹ With the prices of *both* coins falling in unison, the number of TerraUSD and Luna holders liquidating their assets accelerated irreversibly.²⁸⁰ The whole system collapsed when the price of Luna dipped below \$1, breaking the price stabilization mechanism completely.²⁸¹

Thus, our private law analysis of dual-coin stablecoins and decentralized stablecoins returns a clear and somber outcome: holders of these stablecoins have neither remedies nor recourse in the event of a collapse. The balance of this Part III focuses on asset-backed centralized stablecoins. As described in Part I, these stablecoins are presently the largest by market capitalization and the most actively traded. Their failures raise significantly more challenging private law issues.

B. Asset-Backed Stablecoin Failures: Generally

The failure of asset-backed stablecoins would look quite different than the failure of the stablecoins described in the prior section, because holders of asset-backed stablecoins have contractual rights to redeem their coins from a large pool of reserve assets. We have already begun to explore the gaps in the contractual redemption rights in Part II, above. We now add further cause for concern. In this section, we use a stablecoin issuer's hypothetical U.S. bankruptcy filing as a lens to examine the vulnerabilities of coinholders' claims to the reserve assets.

275. Weber, *supra* note 267.

276. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

277. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

278. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

279. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

280. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

281. BUSINESS STANDARD, *supra* note 47; Sorkin et al., *supra* note 14.

To date, no stablecoin issuers have filed for bankruptcy protection, either in the U.S. or abroad.²⁸² Given the novelty of stablecoins and limited existing authority on crypto-assets in bankruptcy, many aspects of our analysis cannot be predicted with certainty. Further, the nature of a stablecoin holder's rights depends on the application of underlying property law principles, the contours of the agreements operating between the parties, and non-public details about how these businesses operate.²⁸³ Our information about these matters is imperfect, and our conclusions are therefore tentative. But despite this lack of certainty, two things are clear. First, coinholders' entitlements to the reserve assets are not as secure as coinholders might expect, given the assurances of stability that lie at the heart of the stablecoin product. Second, coinholders should expect to litigate to determine the nature of their interests. These realities, and the associated cost, uncertainty, and delay, stand in sharp contrast to the rosy assertions of stability that appear in most issuers' forward-facing materials.

1. Bankruptcy Basics

Bankruptcy is a comprehensive process for adjudicating the rights and liabilities of a subject company.²⁸⁴ When a company files for bankruptcy relief, "all legal or equitable interests of the debtor in property" become property of the bankruptcy estate—a separate legal entity that arises when a bankruptcy case commences.²⁸⁵ Creditors are deemed to have "claims"

282. In 2022, several crypto exchanges and crypto lending platforms either filed for bankruptcy relief in U.S. courts or commenced chapter 15 cases in conjunction with insolvency proceedings in foreign jurisdictions. *See, e.g., In re BlockFi Inc.*, No. 22-19361 (Bankr. D.N.J. Nov. 28, 2022); *In re FTX Trading Ltd.*, No. 22-11068 (Bankr. D. Del. Nov. 11, 2022); *In re Celsius Network LLC*, No. 22-10964 (Bankr. S.D.N.Y. July 13, 2022); *In re Voyager Digital Holdings Inc.*, No. 22-10943 (Bankr. S.D.N.Y. July 5, 2022); *In re Three Arrows Capital, Ltd.*, No. 22-10920 (Bankr. S.D.N.Y. July 1, 2022) (concerning chapter 15 bankruptcy case associated with foreign main proceeding in the British Virgin Islands). These cases raise several analogous issues and have resulted in judicial decisions that, in many cases, support our theories below.

283. The agreements at issue include not only the agreements operating between issuer and coinholder, but also agreements between the issuer and the custodian of the assets.

284. Business bankruptcy cases fall into two general types: liquidation-style cases, in which the debtor's property is sold and the proceeds allocated to the various claimants, or rehabilitation-style cases, where a debtor company forms a plan to restructure its operations or affect a sale of the company. *See* CHARLES JORDAN TABB, LAW OF BANKRUPTCY §§ 1.1–1.2 (5th ed. 2020).

285. *See* 11 U.S.C. § 541(a).

against the estate.²⁸⁶ The bankruptcy process involves robust machinery for sorting, categorizing, and ordering a debtor's various claims to determine the order of priority—that is, the manner in which any distributions will be allocated.²⁸⁷ As such, an issuer's bankruptcy would be a seismic event in a stablecoin market. It would demand a detailed analysis of the nature of coinholders' rights in the reserves and an assessment of how those rights stand up against other creditors of the bankrupt issuer. Moreover, while this process plays out, bankruptcy's automatic stay would bar most attempts to collect debts from the estate, limiting coinholders' ability to redeem their stablecoins under ordinary channels.²⁸⁸

2. Coin Issuers' Bankruptcy Eligibility

Most stablecoin issuers currently appear to be eligible for bankruptcy relief under U.S. law. Bankruptcy relief under chapter 7 or chapter 11 of the U.S. Bankruptcy Code²⁸⁹ is broadly available to individuals, partnerships, and corporations.²⁹⁰ The jurisdictional requirements are minimal: debtors must have a domicile, place of business, or property in the United States to be eligible.²⁹¹ Thus, even issuers that are incorporated or headquartered in foreign jurisdictions are eligible for U.S. bankruptcy if they have property in the United States. If a company files for relief in a foreign jurisdiction, cooperative U.S.-based proceedings can be commenced.²⁹²

It is important to note, however, that most domestic and foreign banks, insurance companies, and other regulated financial institutions are excluded

286. *See id.* § 101(5) (defining a “claim” as a “right to payment, whether or not such right is reduced to judgment, liquidated, unliquidated, fixed, contingent, matured, unmatured, disputed, undisputed, legal, equitable, secured, or unsecured” or a “right to an equitable remedy for breach of performance if such breach gives rise to a right to payment, whether or not such right to an equitable remedy is reduced to judgment, fixed, contingent, matured, unmatured, disputed, undisputed, secured, or unsecured”).

287. TABB, *supra* note 284, § 7.1 (discussing in general terms the process of allowing claims in bankruptcy).

288. *See* 11 U.S.C. § 362.

289. The Bankruptcy Code appears in title 11 of the United States Code.

290. 11 U.S.C. §§ 101(41), 109(a).

291. *Id.* § 109(a).

292. *Id.* §§ 1501–1532; *see, e.g., In re MtGox Co., Ltd.*, No. 14-31229-sgj15 (Bankr. N.D. Tex. 2014) (concerning chapter 15 bankruptcy case associated with foreign main proceeding in Japan); *In re Cryptopia Ltd.*, No. 19-11688-smb (Bankr. S.D.N.Y. 2019) (concerning chapter 15 bankruptcy case associated with foreign main proceeding in New Zealand).

from bankruptcy eligibility.²⁹³ These entities are governed by regulatory frameworks that have independent procedures for dealing with the entity's insolvency.²⁹⁴ At least until recently, such exclusions seemed inapplicable to stablecoin issuers, which bore little relationship to regulated financial institutions. But as stablecoin issuers explore partnerships with federally chartered banks or pursue their own charters to foster trust in their products,²⁹⁵ this landscape might change.²⁹⁶ And, if Congress adopts the PWG's recommendation that stablecoin issuers must be depository institutions with FDIC insurance, bankruptcy relief might become categorically unavailable to stablecoin issuers. Still, although bankruptcy's procedural details might not apply to all stablecoin issuers over the long run, our observations about how coinholders' rights relate to those of other claimants would likely carry over into bank receiverships or other insolvency proceedings. The presence of FDIC insurance, however, could mitigate the potential losses faced by coinholders under the existing framework.

293. 11 U.S.C. § 109(b)(2), (d) (noting that a person can be eligible for chapter 7 and chapter 11, only if they are not “a domestic insurance company, bank, savings bank, cooperative bank, savings and loan association, building and loan association, homestead association, a New Markets Venture Capital company as defined in section 351 of the Small Business Investment Act of 1958, a small business investment company licensed by the Small Business Administration under section 301 of the Small Business Investment Act of 1958, credit union, or industrial bank or similar institution which is an insured bank as defined in section 3(h) of the Federal Deposit Insurance Act”); *id.* § 109(b)(3) (excluding foreign insurance companies and banks as well). *But see id.* § 109(b)(2) (providing that “an uninsured State member bank, or a corporation organized under section 25A of the Federal Reserve Act, which operates, or operates as, a multilateral clearing organization pursuant to section 409 of the Federal Deposit Insurance Corporation Improvement Act of 1991 may be a debtor if a petition is filed at the direction of the Board of Governors of the Federal Reserve System”). Further, stockbrokers, commodity brokers, or clearing banks may file a case under chapter 7 bankruptcy, but not chapter 11, and are subject to special liquidation procedures. *Id.* § 109(a), (d).

294. *See* H.R. REP. NO. 95-595, at 318 (1978); S. REP. NO. 95-989, at 31 (1978), *as reprinted in* 1978 U.S.C.C.A.N. 5787, 5817, 6275; *see also In re Affiliated Food Stores, Inc. Grp. Benefit Tr.*, 134 B.R. 215, 222 (Bankr. N.D. Tex. 1991) (“[O]nly those entities which have a comprehensive scheme of liquidation provided for by other statutes or regulations should be excluded from eligibility under the Bankruptcy Code.”).

295. *See, e.g.,* Sarah Wynn, *Stablecoin Issuers Seek Bank Licenses To Reassure Customers*, ROLL CALL (Apr. 5, 2022, 11:08 AM), <https://rollcall.com/2022/04/05/stablecoin-issuers-seek-bank-licenses-to-reassure-customers/> [<https://perma.cc/4AAA-58YA>].

296. Determining whether an entity qualifies for this banking-institution exception is a difficult question, which typically depends on the application of non-bankruptcy law. *See* 2 COLLIER ON BANKRUPTCY ¶ 109.03 (16th ed. 2022).

C. *Asset-Backed Stablecoin Failures: Reserve Asset Rights*

To assess how coinholders will fare in an issuer's bankruptcy, we must first determine whether coinholders' redemption rights amount to a property interest in the reserve assets. If the reserves are property of the coinholders, rather than the issuer, then an issuer's bankruptcy should have little long-term effect on the redemption process.²⁹⁷ But if the reserves are found to be property of the issuer-debtor, then coinholders' redemption rights would be classified as "claims" against the issuer's bankruptcy estate.²⁹⁸ Coinholder recoveries under this likely scenario would become very tenuous indeed. We discuss these implications in more detail below. First, we consider the question of whether the reserves would be included in an issuer's bankruptcy estate.

The bankruptcy estate is an expansive concept,²⁹⁹ encompassing "all legal or equitable interests of the debtor in property" as of the date the bankruptcy case was commenced.³⁰⁰ The estate does not, however, extend beyond the debtor's "particular interest in the property."³⁰¹ If a debtor has only legal title but not an equitable interest in property—as may be the case where property is held in trust—the estate would extend only as far as the legal title held by the debtor-trustee.³⁰² Likewise, if a debtor is acting as an agent or bailee of another person's property, the mere possession of this property at the time of the bankruptcy filing will not make the asset itself property of the estate.³⁰³

The party who wishes to exclude assets from the debtor-issuer's estate—here, a holder of stablecoin—has the burden of establishing that the debtor is acting as a mere custodian of the property.³⁰⁴ This question requires application of non-bankruptcy law, the details of which will vary depending on jurisdiction and type of custodial arrangement asserted.³⁰⁵ Yet, custodial arrangements such as trusts, bailments, escrow, and the like do not arise

297. This is not to say that the determination whether the reserves are property of the coinholders will be easy, immediate, or inexpensive to establish. See discussion *infra* notes 304–308.

298. See 11 U.S.C. § 101(5) (defining "claims").

299. See H.R. REP. NO. 95-595, at 367 (1977); TABB, *supra* note 284, § 5.2 ("Given the intended broad scope of 'property of the estate' . . . almost all imaginable interests might qualify.").

300. 11 U.S.C. §§ 541(a)(1), 541(d).

301. *Marrs-Winn Co., Inc. v. Giberson Elec., Inc. (In re Marrs-Winn Co., Inc.)*, 103 F.3d 584, 589 (7th Cir. 1996).

302. 11 U.S.C. § 541(a)(1), (d).

303. *Id.*

304. See 5 COLLIER ON BANKRUPTCY ¶ 541.28 (16th ed. 2022).

305. *Butner v. United States*, 440 U.S. 48, 54–55 (1979) ("Congress has generally left the determination of property rights in the assets of a bankrupt's estate to state law.").

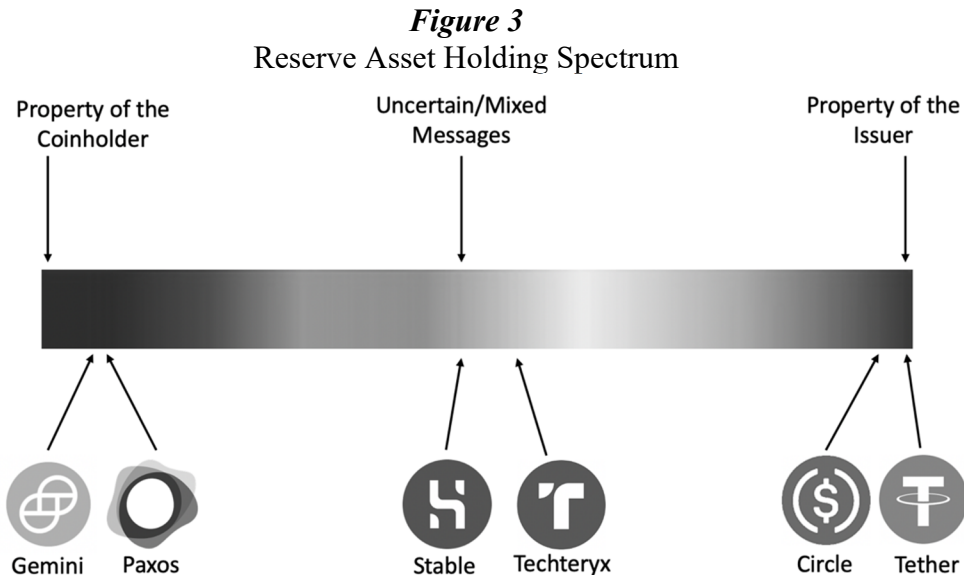
casually or accidentally; there must generally be an agreement (in the case of agency, escrow, or bailment) or the custodian's intent (in the case of trust) to hold the assets for the benefit of another.³⁰⁶ If a debtor simply segregates assets into separate accounts, this separation is typically insufficient to exclude property from the debtor's estate.³⁰⁷ And, if a custodian can exercise

306. For example, in order to establish an express trust, there must typically be an "explicit declaration of trust, a clearly defined trust *res*, and an intent to create a trust relationship." *In re Janikowski*, 60 B.R. 784, 789 (Bankr. N.D. Ill. 1986). Some courts have found a "technical express trust" where a statute expressly imposes fiduciary obligations on a party. *Id.* Alternatively, a resulting trust does not rely on expressed intent, but rather a presumed intent of the parties based on the nature of the transaction. *Morris v. Morris*, 449 S.E.2d 816, 818 (Va. 1994). A bailment relationship involves an agreement between bailor and bailee that the bailee will possess goods, for a particular purpose, and return those goods when the purpose has been fulfilled (or when the bailor reclaims them). *See, e.g., In re Mississippi Valley Livestock, Inc.*, 745 F.3d 299, 302–03 (7th Cir. 2014). Agency requires mutual assent that the agent is to act on behalf of the principal. RESTATEMENT (THIRD) OF AGENCY § 1.01 (AM. L. INST. 2006). Of course, statutory or constructive trusts can be imposed absent an agreement. *See infra* text accompanying notes 336–337.

307. *Compare* *Millard Refrigerated Servs., Inc. v. LandAmerica 1031 Exch. Servs., Inc.* (*In re LandAmerica Fin. Grp., Inc.*), 412 B.R. 800, 812 (Bankr. E.D. Va. 2009) (holding funds held by an intermediary in segregated bank accounts to facilitate like-kind exchanges were property of the intermediary's bankruptcy estate, because the underlying agreements between customer and intermediary contained no express language of trust and customer of the intermediary chose to convey full dominion and control over the funds to the intermediary), *with* *Napleton v. Stettin* (*In re Rosenfeldt*), No. 09-34791-BKC-RBR, 2010 WL 2301240, at *1, *5 (Bankr. S.D. Fla. 2010) (holding funds in segregated trust account established in the name of the debtor—"RRA, f/b/o [for the benefit of] Edward Napleton," for the purpose of holding a deposit for the purchase of an automobile dealership—were property of Napleton and were not part of the debtor's bankruptcy estate). The question of whether segregated accounts holding cryptocurrency were trust accounts arose recently in litigation involving cryptocurrency exchange Quoine. There, the Singapore Court of Appeals reversed a lower-court ruling finding that Quoine had committed a breach of trust when it canceled transactions due to abnormal trade activity. *Quoine Pte. Ltd. v. B2C2 Ltd.*, [2020] SGCA(I) 02, 68 (Sing.). While there were no express words of trust in the user agreement operating between the parties, the lower court determined an intent to create a trust in the fact that the customer's crypto-assets were stored in a segregated account. The Court of Appeals reversed, stating "the mere fact that Quoine's assets were segregated from its customer's cannot in and of itself lead to the conclusion that there was a trust." *Id.* In contrast, the New Zealand High Court held that cryptocurrencies held by the exchange platform Cryptopia were held in trust for the benefit of customers. *Ruscoe v. Cryptopia Ltd (in liq)*, [2020] NZHC 728, ¶ 187 (N.Z.). The court distinguished *Quoine* on a number of factual grounds, including the fact that Cryptopia's terms and conditions, unlike *Quoine*'s, contained express trust language, and Cryptopia, unlike *Quoine*, did not engage in lending and futures trading with respect to crypto-assets. *Id.* ¶ 165.

unfettered dominion and control over the assets held, these facts indicate that the assets would be property of the estate.³⁰⁸

Our best information on whether the reserves would fall within the bankruptcy estate appears in the terms of service, along with other public disclosures provided by the issuers. Our examination of these terms reveals that stablecoin issuers' representations of their reserve-asset holdings fall on a spectrum. Some stablecoin issuers suggest that the reserve assets are held in a custodial capacity, which might shield these assets from the claims of the issuer's creditors in bankruptcy.³⁰⁹ Other issuers make similar claims in their forward-facing materials, but the publicly available data suggests that the reality might be different.³¹⁰ Finally, two stablecoin issuers now make it clear that the reserve assets are *not* held in a fiduciary capacity, making it very likely that these assets would be property of the issuers' estate.³¹¹ *Figure 3* provides a visual representation of the narrative to follow.



308. See COLLIER, *supra* note 304 (collecting authority); Levitin, *supra* note 37, at 29; see also *In re Cryptopia Ltd.*, No. 19-11688-smb (Bankr. S.D.N.Y. 2019) (finding that Cryptopia did not engage in lenders and trading with respect to assets relevant to the conclusion that the assets were held in trust).

309. See *infra* Section III.C.1.

310. See *infra* Section III.C.2.

311. See *infra* Section III.C.3.

1. High Water Mark: GUSD, USDP/BUSD

Of all the stablecoin issuers, Gemini and Paxos make the strongest assertions that the reserve assets might be excluded from the estate.³¹² Gemini's User Agreement states that reserve assets are held in segregated accounts "established specifically *for the benefit of* Gemini customers."³¹³ Elsewhere, the agreement notes that "[w]e do not have a reversionary interest in any of our . . . Gemini Dollar Accounts."³¹⁴ Gemini also states that it "is a fiduciary under § 100 of the NYBL."³¹⁵

Paxos is set up as a limited trust under New York law.³¹⁶ Its terms of service state that the stablecoins:

Are fully backed by US dollars held by Paxos Trust Company, LLC on USD Stablecoin customers' behalf in *segregated custodial accounts* with US banks, or by debt instruments that are expressly guaranteed by the full faith and credit of the United States Government and/or money-market funds composed of such debt instruments ("Government Debt Instruments") *specifically held for the benefit of USD Stablecoin customers*.³¹⁷

These user agreements seem to suggest the assets are held in an express trust or a similar arrangement. But little publicly available information corroborates those claims. Although Gemini and Paxos are trust companies, this does not mean that they are acting solely as trustees with respect to the reserve property.³¹⁸ It is not at all clear, for example, that these issuers or their affiliates have no beneficial interest in the underlying reserves, which could result in the assets becoming part of a bankruptcy estate.

To determine whether Gemini and Paxos are in fact holding the reserve assets exclusively for the benefit of coinholders' redemption claims, a court would look beyond the issuers' representations in coinholder agreements. These representations might give rise to contract liability, but would not be determinative of the underlying property law issues. Instead, the court would examine how the reserve asset holdings were established and maintained. The process of determining property rights in the reserve assets could be

312. Gemini ToS, *supra* note 214.

313. *Id.* (emphasis added).

314. *Id.*

315. *Id.*

316. Paxos ToS, *supra* note 211.

317. *Id.* § 4.2 (emphasis added).

318. *See* Levitin, *supra* note 37, at 24 (noting that an exchange "interacts with customers in a range of fashions. While it has fiduciary *powers* as a trust company . . . that does not mean that it is acting as a fiduciary for its customers in any particular capacity").

contested,³¹⁹ imposing litigation costs and uncertainty on the coinholders—not to mention delay. Even if coinholders ultimately prevail, their right to withdraw the assets will be held up while any litigation surrounding these issues plays out.

To provide a few examples of the potential complexities that might arise in determining whether the reserve assets can enter Gemini or Paxos's hypothetical bankruptcy estate, consider the following three dimensions of the terms of service operating between Gemini and Paxos and their customers.

a. Unclaimed Property

First, Gemini and Paxos, among others, state that any unclaimed property held by the company in the name of a customer will be turned over to the government after a period, as required by state unclaimed property law.³²⁰

At first blush, this seems to support coinholders' property interest in the reserves. However, closer inspection reveals that these clauses do not encompass any accounts containing reserve assets. The agreements instead refer to assets or funds held in a *customer's* account, which seems to apply only to balances that a customer has with a stablecoin issuer to be used, for

319. It is likely that coinholders would have to affirmatively lay claim to the reserve assets by seeking relief from the automatic stay or otherwise seeking a court order that the reserve assets are not property of the estate. In a chapter 11 case, virtually any creditor or interest holder would have standing to challenge coinholders' rights to the reserve assets in bankruptcy under bankruptcy's expansive standing rules. *See* 11 U.S.C. § 1109. In a chapter 7 (liquidation-style) bankruptcy case, a trustee would be appointed and charged with the duty to maximize the estate. *See* 11 U.S.C. § 726. In that capacity, the trustee would examine closely whether these assets were properly segregated. *See* 11 U.S.C. § 706.

320. Paxos ToS, *supra* note 211, § 5 (“If we are holding funds in your Account and there has been no activity in your Account for a period of time prescribed by applicable law, we may be required to report such remaining funds in your Account as unclaimed property in accordance with abandoned property and escheat laws.”); Gemini ToS, *supra* note 214 (“If your account remains closed or dormant for a long enough period of time, we may be required, upon the passage of applicable time periods, to report any remaining funds in your account as unclaimed property in accordance with abandoned property and escheat laws.”); Stable ToS, *supra* note 215, § 7.5 (“If we are holding funds in your Account and there has been no activity in your Account for a period of time prescribed under Stable Universal’s policies, or under applicable law, whichever is shorter, to the extent possible, we may be required to report such remaining funds in your Account as unclaimed property in accordance with abandoned property and escheat laws.”); Circle ToS, *supra* note 210, § 31 (“If Circle is holding funds in your Circle Account, and Circle is unable to contact you and has no record of your use of the Services for a prolonged period of time, applicable law may require or permit Circle to report these funds as unclaimed property to the applicable jurisdiction.”).

example, to purchase stablecoins. Thus, this language is likely not probative of the custodial nature of reserves.

b. Pass-Through Deposit Insurance

More relevant to this inquiry are clauses in both issuers' agreements that—at the time of our study—stated that they offer or provide FDIC pass-through insurance for customers' reserve asset funds.³²¹ Pass-through insurance allows someone acting on behalf of others to deposit funds into a single account but still have those funds individually segregated for deposit insurance purposes in a way that traces the insurance benefit back to the beneficiary.³²² If the bank fails, then the FDIC will step in to cover pass-through depositor losses up to the insured limit.

As a regulatory matter, the FDIC will only grant pass-through insurance if the funds held in the insured account are actually owned by the customer, rather than the person performing in a fiduciary capacity.³²³ This would, therefore, suggest that accounts subject to pass-through insurance would contain funds that are *not* property of the issuer's bankruptcy estate. However, our analysis reveals that much of the promise of pass-through insurance is illusory.

First, FDIC guidance indicates that for an account to enjoy pass-through insurance, the terms of the deposit relationship between the customer and the account holder must match the terms of the deposit relationship between the account holder and the depository bank.³²⁴ This means the customer's ability to rely on the FDIC-backstop is determined by the stablecoin issuer's compliance, which is something a customer is in no position to monitor.

Second, there's the question of whether the funds held by the stablecoin issuer as a reserve asset are actually *deposits* that legally qualify for FDIC deposit insurance at all. Under law, a deposit for FDIC purposes is largely

321. Paxos states that for fiat currency reserve assets that are given to the company when stablecoins are purchased, it is possible for the purchaser whose coins are backed by the fiat currency to enjoy FDIC pass-through insurance. Paxos ToS, *supra* note 211, § 3.5. Gemini only states that its policy “is to comply, in good faith, with the regulations and other requirements of the FDIC for pass-through deposit insurance”—nothing more is said. Gemini ToS, *supra* note 214. It is unclear whether Gemini offers pass-through insurance for funds held as reserve assets backing an individual's stablecoins or whether it's limited to only balances held in a customer's account. *Id.*

322. *See* 12 C.F.R. §§ 330.5, 330.7.

323. *Id.* § 330.5.

324. FED. DEPOSIT INS. CORP., FDIC FINANCIAL INSTITUTION LETTER NO. 29-2010: GUIDANCE ON DEPOSIT PLACEMENT AND COLLECTION ACTIVITIES (June 7, 2010), <https://www.fdic.gov/news/financial-institution-letters/2010/fil10029a.pdf> [<https://perma.cc/3RSQ-QZNA>].

defined as money “held by a bank . . . in the usual course of business and for which it has given or is obligated to give credit” to a bank account or that is evidenced by a check, investment certificate, or the like.³²⁵ It’s questionable whether the relationship between a coinholder and reserve assets in the form of currency held in a bank account is a *deposit*. The funds are for coin redemption, which is a right the coinholder has against the stablecoin company, not the bank. The deposit definition does allow the right against the bank to be conditioned, but whether all the conditions to redemption contained in the terms of service between the coinholder and the issuer are within this definition is questionable. Also, whether the holding of the funds by the bank is in the bank’s *usual course of business* introduces another level of uncertainty.

Taken together, these realities suggest that the user agreements’ language regarding pass-through insurance might be empty, and the reference to pass-through insurance therefore might not be as probative of the underlying property rights in the reserves as it initially seemed.

Not only that, but even if the reserve assets do qualify for FDIC insurance, the terms of service might place recovery out of reach. For example, Paxos requires that customers opt-into pass-through insurance.³²⁶ But even then, the reliance is tentative. The terms of service provide that if Paxos is “unable to verify your ownership of the USD Stablecoins, either because you hold the USD Stablecoins in an omnibus account with others (such as at an exchange) or otherwise, we will not be able to provide you this opt-in registration.”³²⁷ Consider the following: a consumer purchases USDP through a crypto exchange company.³²⁸ If the crypto exchange company executes the trade as an “on us” transaction whereby the stablecoin is held in an omnibus account in its own name rather than in the investor’s name, then FDIC insurance will not be available. Considering how many crypto transfers are speculated to actually be “on us” exchange transactions, this would render FDIC pass-through insurance unavailable for the vast majority of coinholders. And even if it is not an “on-us” transfer, according to Paxos’ terms of service, once USDP is transferred “from the wallet(s) identified to us during the opt-in registration to another wallet (even if owned by you),” then “Paxos is not responsible for taking any action to make FDIC insurance available.”³²⁹ Thus,

325. 12 U.S.C. § 1813(1); *id.* § 1815(a)(1); *see also id.* § 330.1(d).

326. Paxos ToS, *supra* note 211, § 5.4.

327. *US Dollar-Backed Stablecoin Terms and Conditions*, Paxos, <https://paxos.com/2019/03/29/usdp-terms-conditions/> [<https://perma.cc/E5M7-BPY6>] (July 8, 2022).

328. Levitin, *supra* note 37, at 59.

329. *US Dollar-Backed Stablecoin Terms and Conditions*, *supra* note 327.

the transferee of the stablecoin would lose whatever pass-through insurance was enjoyed by the transferor.

We offer one other point of note about the supposed offering of FDIC-insurance. Since we conducted our study of the terms of service in March 2022, the FDIC has issued an advisory bulletin noting that the agency was “concerned about the risk of consumer confusion or harm arising from crypto assets offered by, through, or in connection with insured depository institutions.”³³⁰ The FDIC warned of “[i]naccurate representations about deposit insurance” by certain non-bank, crypto companies that would incorrectly cause customers to “believe they are protected against any type of loss.”³³¹ The advisory letter ended by warning FDIC-insured banks as to the risk of carrying on third party relationships with crypto companies, including how those companies communicate the possibility or role of FDIC insurance in their offerings.³³²

Indeed, the FDIC’s warning did not go unnoticed. In December 2022, Paxos changed its terms and conditions to include new “FDIC Pass Through Insurance Disclosures” to more precisely describe the role of deposit insurance in Paxos’ stablecoin operations. In line with what we predicted, the company added the following disclaimer: “Not all deposits are covered by the FDIC or private insurance, and Paxos may still incur losses in the event of a bank insolvency.”³³³

c. Accrual of Interest

Third, both Gemini and Paxos enjoy the benefits of any interest that accrues on their customers’ accounts, including the reserve-asset accounts. To the extent that this interest is attributed to the underlying coinholders, it is assessed as a fee. For example, Gemini’s terms of service provides:

[Y]ou agree to pay us a fee equal to the amount of any such interest and/or other earnings attributable or allocable to your fiat currency deposits as payment for the services we provide to you under this Agreement. You agree and understand that we shall collect any such

330. FDIC, FIL-35-2022, ADVISORY TO FDIC-INSURED INSTITUTIONS REGARDING FDIC DEPOSIT INSURANCE AND DEALINGS WITH CRYPTO COMPANIES (2022), <https://www.fdic.gov/news/financial-institution-letters/2022/fil22035b.pdf> [<https://perma.cc/P69Q-V4A3>].

331. *Id.*

332. *Id.*

333. *See* *FDIC Pass Through Insurance Disclosures*, PAXOS <https://paxos.com/2022/08/09/fdic-pass-through-insurance-disclosures/> [<https://perma.cc/NEL3-JEYR>].

payment, equal to the amount of such allocable interest and/or other earnings, simultaneously upon being paid such interest and/or other earnings to our Customer Omnibus Accounts *and/or Gemini Dollar Accounts*.³³⁴

Similar language appears in Paxos's user agreement.³³⁵

This text acknowledges the fact that interest might accrue for the benefit of coinholders, which supports an inference that these accounts might be properly structured to hold the reserves in a fiduciary capacity. Particularly in a close case, a court might well find the fact that the custodian effectively enjoys the benefit of all interest on the account to support a finding that these funds are property of the custodian, not the coinholder.

d. Trust Alternatives

If the formal requirements to establish a fiduciary relationship are not present, it is possible that a court might find an equitable workaround. For example, constructive trust is an equitable remedy that applies primarily in cases of wrongdoing, such as breach of fiduciary duty, interference with property, and the like.³³⁶ Some jurisdictions permit the finding of a constructive trust “not only where the property has been acquired by a fraud or improper means, but also where it has been fairly and properly acquired, but it is contrary to the principles of equity that it should be retained.”³³⁷

Coinholders face a stiff uphill climb on this topic, for several reasons. First, although stablecoin issuers' websites are full of puffery that stablecoin holders can redeem their coins for reserve assets at any time, the fine print of the user agreements is much more equivocal. Second, even though the equities might seem to favor coinholders vis-à-vis issuers, this type of binary

334. Gemini ToS, *supra* note 214 (emphasis added). The term “Gemini Dollar Account” is an umbrella term that describes the various accounts that hold Gemini's reserves. *Id.* (“Each Gemini Dollar corresponds to a U.S. dollar held across one or more omnibus bank accounts . . . (collectively, ‘Gemini Dollar Accounts’). The U.S. dollar, money market and U.S. Treasury Obligation accounts that make up the Gemini Dollar Accounts constitute the ‘Gemini Dollar Reserve.’”).

335. Paxos ToS, *supra* note 211, § 13.3.

336. *See, e.g.*, CAL. CIV. CODE § 2224 (2022) (“One who gains a thing by fraud, accident, mistake, undue influence, the violation of a trust, or other wrongful act, is . . . an involuntary trustee of the thing gained.”).

337. *Leonard v. Counts*, 272 S.E.2d 190, 195 (Va. 1980) (citation omitted); RESTATEMENT (FIRST) OF RESTITUTION § 160 (1937) (“Where a person holding title to property is subject to an equitable duty to convey it to another on the ground that he would be unjustly enriched if he were permitted to retain it, a constructive trust arises.”).

thinking tends to break down in bankruptcy.³³⁸ Indeed, constructive trusts are sparingly applied in bankruptcy due to their effects on other claimants.

2. Low Water Mark: USDT

The prior section considered whether, based on publicly available information, the reserve assets held by Gemini and Paxos would constitute property of the estate if those issuers filed for bankruptcy. This question is much easier to answer in Tether's case. Tether states that "[t]he composition of the Reserves used to back Tether Tokens is within the sole control and at the sole and absolute discretion of Tether."³³⁹ Tether characterizes coinholders' rights to redeem as "a contractual right personal to [the coinholder]," which could be intended to indicate that coinholders do not have property rights in the reserve assets.³⁴⁰ In addition, Tether expressly "reserves the right to delay the redemption or withdrawal of Tether Tokens if such delay is necessitated by the illiquidity or unavailability or loss of any Reserves held by Tether to back the Tether Tokens."³⁴¹

Nothing in this User Agreement suggests that Tether has taken any steps to protect the reserve assets from the claims of Tether's creditors. In fact, Tether's risk disclosures caution investors that the reserve assets "could be subject to unexpected diminution in value" and that "[n]o-one should have

338. See, e.g., *Superintendent of Ins. v. Ochs (In re First Cent. Fin. Corp.)*, 377 F.3d 209, 217 (2d Cir. 2004) ("[B]y creating a separate allocation mechanism outside the scope of the bankruptcy system, 'the constructive trust doctrine can wreak . . . havoc with the priority system ordained by the Bankruptcy Code.'"); see also Levitin, *supra* note 37, at 21–22 (discussing application of constructive trust to a crypto exchange company's holdings).

339. Tether ToS, *supra* note 209, § 3. These "Reserves" can include not only currency and cash equivalents, but also "other assets and receivables from loans made by Tether to third parties, which may include affiliated entities." *Id.* § 1.1.32.

340. *Id.* § 3. This language might instead be an attempt to limit the assignability of redemption rights by labeling them as "personal" contract rights. 6 AM. JUR. 2D *Assignments* §§ 26–28 (1999) (discussing the non-assignability of personal services contracts). If this was the intent of that language, it's not clear that such language would be effective. The right to redeem stablecoin for fiat currency does not seem to be of the nature of personal services contracts, which are unassignable for policy reasons. See, e.g., *Mehul's Inv. Corp. v. ABC Advisors, Inc.*, 130 F. Supp. 2d 700, 706 (D. Md. 2001) (holding that bid solicitation contract was assignable because "there is no evidence in the record that the agreement involved 'personal taste, judgment or skill with respect to the work required' or that 'another company could not code, sort and distribute bid solicitations in the exact same manner'"). Tether's User Agreement also contains an express anti-assignment clause, which provides that "[t]hese Terms of Service, and any of the rights, duties, and obligations contained herein, are not assignable by you without prior written consent of Tether." Tether ToS, *supra* note 209, § 17.

341. Tether ToS, *supra* note 209, § 3.

funds invested in Digital Tokens or speculate in Digital Tokens that she is not prepared to lose entirely.”³⁴² As such, absent the imposition of a constructive trust or similar form of equitable relief, the reserve assets would very likely constitute property of the bankruptcy estate.

3. Shifting Signals: USDC

Circle’s User Agreement and Terms have shifted significantly over the course of our investigation. At the outset of our study, we tentatively placed Circle in the vicinity of Gemini and Paxos, as Circle’s User Agreement gave some suggestion that the reserves were held in a custodial capacity. But as transparency regarding Circle’s reserve holdings has increased, it has become clear that USDC reserves are likely not held in a custodial capacity and would constitute property of Circle’s bankruptcy estate if the company filed for bankruptcy protection.

Circle states the following in its USDC Terms of Service: Circle holds the equivalent value of one U.S. Dollar (\$1) in *Segregated Accounts*, “on behalf of, and for the benefit of, Users” for each USDC that is issued by Circle and remains in circulation.³⁴³

When we commenced our study, we could find little else to shed light on the way the reserves were held. Our first signal that Circle’s reserve holdings might not be in custodial accounts appeared in a Reserve Account Report from January 2022, prepared by the company and reviewed by an independent accountant.³⁴⁴ In that report, Circle described the reserve accounts as “segregated” and “unencumbered,” but did not reference the accounts as custodial or trust accounts.³⁴⁵ Then, in April 2022, Circle announced that it had entered into a \$400M funding round and “strategic partnership” through which BlackRock would take on the management of Circle’s cash reserves in a money market fund.³⁴⁶ However, in reviewing the

342. *Risk Disclosure Statement* §§ 1, 8, TETHER, <https://tether.to/en/legal/#risk-disclosure-statement> [<https://perma.cc/LCV3-PBZB>].

343. Circle ToS, *supra* note 210, § 1.

344. GRANT THORTON LLP, INDEPENDENT ACCOUNTANT’S REPORT 1 (2022), <https://f.hubspotusercontent30.net/hubfs/9304636/PDF/2021%20Circle%20Examination%20Report%20December%202021.pdf> [<https://perma.cc/GMS8-GYXU>] (examining RESERVE ACCOUNT REPORT, CIRCLE (2021)).

345. *Id.*

346. Jeff Benson, *BlackRock To Handle Circle’s USDC Cash Reserves as Part of \$400M Funding Round*, DECRYPT (Apr. 13, 2022), <https://decrypt.co/97795/blackrock-handle-circle-usdc-cash-reserves-400m-funding-round> [<https://perma.cc/5BSW-JZZH>]; *Circle Announces*

relevant Form N1-A, the only person under the fund agreement who is allowed to purchase fund shares (and therefore the only person who would appear to have a claim to the fund's assets) is Circle Internet Financial LLC, *not* the coinholders.³⁴⁷ It might have been the case that the money market shares held by Circle are being held in a trust capacity for the coinholders, but we were not able to find any indication that this was the case in the documents we reviewed.

Finally, in June 2022, we discovered that Circle's User Agreement had been amended to broadly disclaim any inference that the company acts as a trustee, fiduciary, or custodian of the reserve assets:

We are not a trust company nor do we maintain a trust company charter in any U.S. state or territory Additionally, for the avoidance of doubt, Circle is not a fiduciary, and Circle does not provide any trust or fiduciary services to any User in the course of such User visiting, accessing, or using the Circle website or services Any reference to custody services in this Agreement or elsewhere on this site refers only to our custody of digital assets on a User's behalf pursuant to the authority granted under our money transmission and/or virtual currency licenses. Circle is not a Qualified Custodian pursuant to 17 C.F.R. § 275.206(4)-2

Additional terms for Users located in Nevada: Circle holds your digital assets pursuant to its authority as a licensed money transmitter in the State of Nevada. Circle is not a "digital custodian"

\$400M Funding Round, CIRCLE (May 10, 2022), https://www.circle.com/en/pressroom/circle-announces-400m-funding-round?utm_campaign=Campaign%20%7C%20Comms%20Announcement&utm_content=204246687&utm_medium=social&utm_source=twitter&hss_channel=tw-2151686839 [<https://perma.cc/Y9QZ-XJN5>].

347. SEC. & EXCH. COMM'N, CIRCLE RESERVE FUND: REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933 (FORM N-1A), at 5 (May 26, 2022), <https://www.sec.gov/Archives/edgar/data/844779/000119312522160639/d259389d485apos.htm> [<https://perma.cc/DN2Z-KPRX>]. The arrangement is set up as a money market fund, with Blackrock acting as the fund manager. The fund, as an entity, contains the assets. However, the shares of the fund "are only available for purchase by Circle Internet Financial, LLC." *Id.* This means that the only party who has a claim to the fund (and thus the fund's assets) is Circle—not Circle's coinholders. *See also id.* at 10, II-46 (reciting that the shares are only available for purchase by Circle Internet Financial, LLC).

as such term is defined by the Nevada Financial Institutions Division.³⁴⁸

As a result of these changes, we place Circle in the same category as Tether in our spectrum above.

4. Mixed Signals: HUSD, TUSD

Other issuers send mixed signals regarding the custody of reserve assets. While the terms of service contain some assurances that the reserve assets are held for the benefit of coinholders, other evidence tends to undermine those assertions. Stable Universal, the issuer of HUSD, asserts that reserve assets are maintained in custodial accounts managed by Huobi Trust Company (“Huobi”).³⁴⁹ Nowhere in the terms of service does it specify that the assets are held in trust *for the benefit of* the coinholders or that Stable lacks an interest in the reserves.³⁵⁰ In fact, there are several indications in Stable’s public disclosures to indicate that these assets are *not* held for the exclusive benefit of coinholders. First, Stable’s terms of service state that it will be using the assets for various investments,³⁵¹ which significantly undercuts an argument that these assets might be excluded from the estate. Second, a Reserve Accounts Report prepared by the company in January 2022 suggests that the assets administered by Huobi are held for the benefit of *both the company and coinholders*.³⁵² To the extent Stable has property rights in these assets, they would constitute property of Stable’s bankruptcy estate.

Techteryx suggests in its Terms of Service that some percentage of reserve assets are held in segregated escrow accounts.³⁵³ But even if these accounts

348. *Account User Agreement*, CIRCLE § 3, <https://www.circle.com/en/legal/user-agreement> [<https://perma.cc/W54H-VJPV>] (Dec. 20, 2022).

349. Stable ToS, *supra* note 215, § 20.5.

350. *See supra* text accompanying note 258.

351. Stable ToS, *supra* note 215, § A(I) (“Funds . . . received by the Company in exchange for HUSD may be invested in a variety of assets, which are not riskless. *Potential uses of such funds by the Company include lending, staking, and yield farming.* There exists some risk that the value of such funds, generally or at specific times, may be less than the value of all outstanding HUSD.”) (emphasis added).

352. STABLE UNIVERSAL LTD., ACCOUNTANT’S ATTESTATION: RESERVE ACCOUNTS REPORT (2022) (asserting that the assets held by Huobi were held “for the benefit of *the company and HUSD token holders.*”). The attestation report, published in 2022, is no longer publicly available.

353. Techteryx ToS, *supra* note 212, § 4 (“TUSD tokens are fully backed by cash, cash equivalents, short-term government securities, and liquid investments denominated in U.S.

can be excluded from the bankruptcy estate, it appears that these comprise only a portion of the reserve assets holdings and therefore might contain insufficient funds to satisfy all coinholders in a bankruptcy setting. No public information is available regarding whether the remainder of its investments are held by Techteryx on behalf of coinholders.³⁵⁴ Notably, Techteryx “does not guarantee any right of redemption or exchange of TUSD tokens for U.S. dollars.”³⁵⁵

5. Implications

The preceding subsections considered how likely it would be that the reserve assets would be included in the issuer’s estate if an issuer filed for bankruptcy protection. If the reserve assets are found to be property of the estate, the most immediate implication for coin holders is that the reserves will be available to satisfy *all* creditors of the issuer according to the priority structures contained in the Bankruptcy Code. Not only that, but many competing creditors might also enjoy a higher-level priority than coinholders themselves.

Assuming the reserves are property of the estate, the redemption right would be characterized as a *claim* against the issuer’s bankruptcy estate. This makes coinholders *creditors* of the debtor. Bankruptcy’s priority structure provides for payment first to secured creditors, up to the value of the collateral securing their claims.³⁵⁶ Following that, priority unsecured creditors are paid, and finally, general unsecured creditors share pro-rata in any funds remaining.

Nothing in our Terms of Service study suggests that coinholders’ claims would qualify as secured claims, as there is no evidence that the rights are secured by consensual, judicial, or statutory liens on the reserve assets,³⁵⁷ nor do coinholders appear to have setoff rights that would allow them to qualify

dollars, and can be redeemed for the underlying reserves held in escrow accounts managed by our independent fiduciary network including banks, depository institutions and trust companies (each a “Banking Partner” and together our “Banking Partners”) through the Platform.”).

354. Techteryx discloses that “there may be a risk of loss to [funds held in short-term investments] associated with the solvency of the instruments being invested in *or other factors*.” *Id.* § 11 (emphasis added).

355. *Id.* § 3.

356. 11 U.S.C. § 506(a); *see also* TABB, *supra* note 284, at 7.27 (“Holders of secured claims are preferred over unsecured creditors in a bankruptcy distribution. Secured creditors are entitled to be paid *in full*, up to the value of the collateral securing their claim, § 506(a) before unsecured claims are paid at all.”).

357. *See* 11 U.S.C. § 101(37) (defining “lien” as a “charge against or interest in property to secure payment of a debt or performance of an obligation”).

as secured creditors.³⁵⁸ Coinholders also do not appear to be entitled to any priority unsecured status in bankruptcy.³⁵⁹ As such, it is highly likely that coinholders would be classified as general unsecured creditors of the debtor. At this level of priority, coinholders might receive pennies on the dollar—or nothing at all—on account of their redemption rights. At the end of the case, any obligations to pay coinholders would be discharged, and the coinholders would be permanently enjoined from exercising their redemption rights.³⁶⁰ This is the outcome whether or not coinholders received a distribution from the bankruptcy estate.³⁶¹

In contrast, if the reserve assets are held in a custodial capacity and shielded from the bankruptcy estate, coinholders will not face creditor competition to these assets. But their path to recovery is still by no means easy. First, given the uncertainty discussed in the prior part, a conclusion that the reserve assets are not property of the estate might come only after protracted litigation. Coinholders should expect to be prevented from exercising their redemption rights until the matter is settled. Not only that, but the reserve accounts might also be undercollateralized, which would result in a less than full recovery from the reserve assets. Coinholders would have a claim for any amounts not satisfied from the reserves, but that would likewise be a general unsecured claim, recovery of which would be speculative.

Any number of contractual privity issues might complicate the path to recovery still further. First, stablecoins are designed to be transferred. Considering this reality, the party who wishes to exercise redemption rights might not have had any prior contact with the issuer. But, as discussed above, some terms of service impose limitations on transfers and transferee redemption that would need to be sorted out before a stablecoin transferee would be able to exercise its rights to the reserves. Second, coinholders might suffer if an entity who is obligated to satisfy redemption claims enters bankruptcy but an affiliate that has the property rights in the reserve assets does not (or if the inverse occurs).³⁶² Relatedly, there are a variety of wrapping and bridging transactions involving stablecoins, which involve various forms of restructuring that further distance the coinholder from the party holding

358. *Id.* § 506(a)(1).

359. *See generally id.* § 507 (setting out an order of priority for priority unsecured claims).

360. *Id.* § 542(a).

361. *See id.*

362. *Id.* (discussing these issues in more depth).

the reserves.³⁶³ Untangling the web of transfers and transactions adds complexity to an already fraught legal position.

The recent bankruptcy case of crypto-lending platform, Celsius, illustrates the dramatic effects of a bankruptcy filing on individual coinholders' rights. Celsius and certain affiliates filed for bankruptcy relief in July 2022.³⁶⁴ At the time of filing, Celsius was in custody of billions of dollars in crypto-assets, including \$23 million of stablecoin, which its customers had deposited with the expectation of receiving high rates of return.³⁶⁵ Celsius took the position that the crypto-assets held therein were property of Celsius, rather than their customers. Customers flooded the bankruptcy docket with handwritten letters, alleging that Celsius had defrauded them and begging the bankruptcy court to intervene.³⁶⁶

The court ultimately ruled that a small portion of the crypto-assets in so-called "custody" accounts were property of the coinholders, and ordered their return.³⁶⁷ That ruling was entered five months after the case commenced,³⁶⁸ illustrating that coinholders' best-case recoveries are not immediate. In January 2023, the court held that the vast majority of the cryptoassets in Celsius's custody were property of the debtors' estates.³⁶⁹ The court held that, despite the use of the term of loan in describing what Celsius customers were doing with their crypto vis-à-vis Celsius, "no ownership or lien in favor of the Account Holders was intended."³⁷⁰

To be sure, the Celsius case involved different types of customer deposits, with different underlying agreements and different customer expectations. These decisions are not instructive on the ultimate question whether stablecoin reserve assets would constitute property of the estate. But these

363. See, e.g., Adam T. Smith, *Recovery by ICO Token Investors May Be Challenged in Bankruptcy*, CARLTON FIELDS (Aug. 12, 2020), <https://www.carltonfields.com/insights/publications/2020/recovery-by-ico-token-investors-may-be-challenged> [<https://perma.cc/H8QY-E57B>].

364. *In re Celsius Network LLC*, No. 22-10964 (Bankr. S.D.N.Y. July 13, 2022).

365. *In re Celsius Network LLC*, No. 22-10964 (MG), 2023 WL 34106, at *1 (Bankr. S.D.N.Y. Jan. 4, 2023).

366. Kara Bruce, Christopher K. Odient, and Andrea Tosato, *Stablecoins in Bankruptcy*, 42 No. 10 BANKR. L. LTR. NL 1, 5 (2022).

367. See Jeremy Hill, *Celsius Judge Orders Return of User Crypto Worth \$50 Million*, BLOOMBERG (Dec. 7, 2022), <https://www.bloomberg.com/news/articles/2022-12-07/celsius-judge-orders-return-of-user-crypto-worth-50-million?leadSource=uverify%20wall> [<https://perma.cc/X2TG-WLS8>] (describing the oral ruling).

368. *Id.*

369. *In re Celsius Network LLC*, No. 22-10964 (MG), 2023 WL 34106, at *1 (Bankr. S.D.N.Y. Jan. 4, 2023).

370. *Id.* at *19.

decisions do illustrate that bankruptcy demands precision in assessing parties' rights in crypto-assets, and that operative principles of contract and property law will dominate, notwithstanding customers' expectations of ownership.

6. The Threat of Avoidance

The foregoing sections suggest that coinholders face significant risks of loss if an issuer were to file for bankruptcy protection. But what if, through prescience or sheer luck, a coinholder redeemed a stablecoin for cash before the bankruptcy filing occurred? Those coinholders are not necessarily in the clear, as they might be vulnerable to avoidance claims in bankruptcy. The Bankruptcy Code provides a variety of tools to undo certain pre-bankruptcy transactions and recover their value to the estate.³⁷¹ In effect, transferees may sometimes be ordered to return the value of transfers, even those that occurred before the bankruptcy case commenced, so that this property may be ratably distributed in bankruptcy.³⁷²

Of broadest potential applicability to coinholders is the concept of preference liability, which permits the estate to recover certain transfers made within the ninety days preceding a bankruptcy filing.³⁷³ Depending on the issuer's behavior preceding bankruptcy and after the case commences, other avoidance claims might also be available.³⁷⁴

Preference liability attaches to transfers that are made:

371. For a discussion of the avoiding powers, their functions, and the policies they further, see Thomas H. Jackson, *Avoiding Powers in Bankruptcy*, 36 STAN. L. REV. 725, 725 (1984).

372. A transferee who must return the value of a transfer to the estate receives a claim against the estate for the value of the funds returned. For the crypto-asset bankruptcies that have already been filed, these actions will likely be significant.

373. 11 U.S.C. § 547.

374. For example, transfers made with the intent to hinder, delay, or defraud creditors, or transfers made for less than reasonably equivalent value combined with some evidence of the debtor's insolvency, might be avoidable under sections 544(b) or 548 of the Bankruptcy Code. See, e.g., *Hashfast Technologies, LLC v. Marc A. Lowe* (*In re Hashfast Technologies, LLC*), No. 15-03011 (Bankr. N.D. Cal. 2015) (fraudulent transfer action relating to the prepetition transfer of 3000 bitcoins to the defendant); Complaint to Avoid and Recover a Fraudulent Transfer, *In re Cred Inc.*, No. 20-12836 (Bankr. D. Del. Nov. 2020) (same). The bankruptcy cases filed while this article was in its editing stages illustrate that some crypto firms operate with shocking levels of mismanagement, self-dealing, and fraud. See, e.g., Alexander Saeddy & Paul Kiernan, *FTX CEO Details Mismanagement, Says U.S. Customer Funds Could Be at Risk*, WALL ST. J. (Dec. 13, 2022), <https://www.wsj.com/articles/new-ftx-chief-to-testify-before-congress-after-sam-bankman-fried-arrest-11670903625> [<https://perma.cc/AN4G-68Q7>]. These developments strongly suggest that avoidance litigation will play a dominant role in existing and future crypto-firm bankruptcies.

- (1) “to or for the benefit of a creditor”;
- (2) “for or on account of an antecedent debt owed by the debtor before such transfer was made”;
- (3) “while the debtor was insolvent,” and insolvency is presumed within the 90 days preceding the bankruptcy filing;
- (4) within the preference period, which is ordinarily 90 days before date of the bankruptcy filing,³⁷⁵
- (5) that enable the transferee to receive more than it would receive under a hypothetical litigation.³⁷⁶

If coinholders are indeed treated as unsecured creditors in an issuer’s bankruptcy, as suggested above, then any coinholders that redeem their coins within the preference period might be required to return them.

For example, Cred Inc., which operates a crypto lending platform,³⁷⁷ filed for bankruptcy protection in the U.S. Bankruptcy Court for the District of Delaware on November 9, 2020.³⁷⁸ Sometime earlier, one of Cred’s customers transferred bitcoin to Cred to secure a \$2 million revolving line of credit.³⁷⁹ As the price of bitcoin appreciated, the customer requested to withdraw 10% of the coins transferred.³⁸⁰ Cred honored the customer’s request and returned the bitcoins 87 days before its bankruptcy filing.³⁸¹ After Cred entered bankruptcy, the customer sought relief from the automatic stay to pay off its outstanding obligations and recover the remainder of its bitcoin from Cred.³⁸² Cred opposed this motion, arguing in part that the redemption

375. The preference period can extend up to one year for transfers to insiders. 11 U.S.C. § 547(b)(4).

376. *Id.* § 547(b).

377. Under Cred Inc.’s main business model, individuals could transfer their crypto-assets to the company, and the company would then lend those assets to others, including asset managers, crypto mining firms, and others who were in need of crypto. In exchange, the individuals who lent the crypto would receive payments, either in fiat currency or stablecoins. *See* Sandra Desautels, *Cryptocurrency Lending: Lessons from the Cred Bankruptcy*, GUIDEHOUSE (Jan. 11, 2021), <https://guidehouse.com/insights/financial-crimes/2021/cryptocurrency-lending-lessons-cred-bankruptcy> [<https://perma.cc/US6W-86TM>].

378. Voluntary Petition for Non-Individuals Filing for Bankruptcy, *In re Cred Inc.*, No. 20-12836 (Bankr. D. Del. Nov. 9, 2020) [Doc. No. 1].

379. Objection of Debtors to Motion of UpgradeYa Invs., LLC for Relief from Stay Under Bankr. Code Section 262, *In re Cred Inc.*, No. 20-12836 (Bankr. D. Del. Dec. 2, 2020) [Doc. No. 116].

380. *Id.*

381. *Id.*

382. *Id.*

constituted a preference and that, because of this, the customer was not entitled to relief until the preference was returned.³⁸³

Although the court ultimately ruled on other grounds, this fact pattern provides an opportunity to explore the application of preference law to crypto redemption: Cred's return of bitcoin appears to be a transfer to a creditor on account of an antecedent debt. This transfer fell narrowly within the preference period and occurred at a time when the debtor would be presumed insolvent. Unless Cred had assets sufficient to pay all creditors in the customer's class 100% of their claims, then this transfer would provide more to the customer than what the customer would receive in a liquidation. In a hypothetical stablecoin issuer's bankruptcy, a similar analysis might apply to stablecoin redemption.

Several defenses, ranging in complexity, might protect stablecoin transactions from preference liability. The easiest defense to apply is the \$7,575 floor for preference liability for debtors whose debts are primarily non-consumer debts.³⁸⁴ Transfers below this amount may not be recovered.³⁸⁵ Next, if the coinholder can demonstrate that redemption of the coins is within the ordinary course of both the issuer's business *and the coinholder's* business, then this defense might apply.³⁸⁶

The Bankruptcy Code features a variety of additional carveouts from preference liability that might apply to these transactions.³⁸⁷ Many of these defenses turn on whether stablecoins constitute currency, a commodity, or something else, and these crypto characterization issues have proved to be very difficult.³⁸⁸ To provide one example, the redemption of stablecoin for cash may qualify as a currency "swap"³⁸⁹ and would thereby be protected from avoidance under section 546(g) of the Bankruptcy Code.³⁹⁰ It is unclear

383. *Id.*

384. 11 U.S.C. § 547(c)(9) (originally \$5000; adjusted for inflation effective April 2022).

385. Recent amendments to the Bankruptcy Code require a preference plaintiff to exercise due diligence to screen out these types of small-value claims, which theoretically might prevent the coinholder from having to litigate application of the defense. *See infra* note 392.

386. *See* 11 U.S.C. § 547(c)(2).

387. *See* Bruce et al., *supra* note 366, at 10 (discussing these defenses).

388. The defenses discussed in this section apply not just to preference actions, but also certain fraudulent transfer actions and other avoidance claims that might arise. *See id.* § 546(g).

389. Brad M. Kahn et al., *The Need for Clarity Regarding the Classification and Valuation of Cryptocurrency in Bankruptcy Cases*, 17 PRATT'S J. BANKR. L. 228, 232 (2021); Casey Doherty, *Bitcoin and Bankruptcy: Understanding the Newest Potential Commodity*, 33 AM. BANKR. INST. J. 38, 38 (July 2014).

390. 11 U.S.C. § 546(g) (providing that, with some exceptions, the trustee may not "avoid a transfer, made by or to (or for the benefit of) a swap participant or financial participant, under or in connection with any swap agreement and that is made before the commencement of the case").

whether stablecoins would qualify for this protection if they were classified as commodities, rather than currency.³⁹¹

Although these defenses might ultimately shield some transfers from preference liability, the threat of avoidance actions places immediate near-term costs on coinholders. Coinholders that have transacted business with the issuer during the preference period may well receive demand letters seeking return of these amounts,³⁹² and applying the many defenses described above would require sophisticated lawyering and involve unsettled crypto-classification issues. As such, under all but the most straightforward cases, coinholders might feel compelled to settle a matter to avoid the risk of losing a subsequent suit. All told, the potential for avoidance litigation is likely to present a liability risk to holders of stablecoin—and not one that they are necessarily bracing for.

* * * *

This Part has focused on the rights coinholders might have in the event of a stablecoin collapse, with a particular focus on their possible claims to reserve assets. However, our analysis only scratches the surface of the potential bankruptcy issues that might affect coinholders.³⁹³

For example, it is very difficult to unpack the nature of a coinholder's rights against the issuer. Coinholders have some rights emanating from their *ownership* interest in the coins themselves, but these are distinct from their

391. Compare Kahn et al., *supra* note 389, at 232 (questioning whether bitcoin redemptions qualify as commodities swaps), with Mary E. Maginnis, Comment, *Money for Nothing: The Treatment of Bitcoin in Section 550 Recovery Actions*, 20 U. PENN. J. BUS. L. 485, 510 n.181 (2017) (suggesting that crypto redemptions could qualify as swaps), and Adam Levitin, *What Happens if a Cryptocurrency Exchange Files for Bankruptcy?*, CREDIT SLIPS (Feb. 2, 2022), <https://www.creditslips.org/creditslips/2022/02/what-happens-if-a-cryptocurrency-exchange-files-for-bankruptcy.html> [<https://perma.cc/X2KA-96GW>] [hereinafter Levitin Blog] (suggesting these defenses might be restricted to transfers subject to regulatory regimes outside of bankruptcy and should therefore not apply to crypto transactions).

392. Recent amendments to the Bankruptcy Code impose a duty on preference plaintiffs to investigate and take into account “known or reasonably knowable affirmative defenses” before filing suit to recover a preference. See Small Business Reorganization Act of 2019, Pub. L. No. 116-54 § 3(a), 133 Stat. 1079 (2019). This duty does not extend to sending demand letters, which commonly precedes preference litigation. See Kara J. Bruce, *Bankruptcy’s Uneven Response to Nuisance Claims*, 41 NO. 4 BANKR. L. LTR. 1, 1 (2021). And a preference plaintiff is unlikely to violate this duty if it files suit under circumstances where a defense might or might not apply. *Id.*

393. We discuss these issues in greater detail in *Stablecoins in Bankruptcy*, cited *supra* note 366.

contractual rights to redeem the stablecoins in the reserve assets.³⁹⁴ As a preliminary matter, we do not believe that stablecoin ownership itself constitutes an equity interest in the issuing company. Holding a stablecoin is not like holding a share of stock in that issuer's corporate form. It carries with it no voting rights, no ownership interest, and no promise of any sort of financial return. But the matter isn't entirely free from doubt.³⁹⁵

Stablecoin holders' ownership rights in stablecoins would be of critical importance in a bankruptcy case filed by a company—like Celsius, described above—that has custody of the crypto-assets at the time of filing. Considering that some stablecoin issuers—including Gemini and Paxos—also serve as crypto custodians and exchange platforms,³⁹⁶ it is possible that these companies (or an affiliated co-debtor) might have custody of a customer's stablecoin at the time of a bankruptcy filing.

If a crypto custodian enters bankruptcy in the U.S., the Celsius case makes clear that custodially held crypto-assets themselves might constitute property of the custodian's bankruptcy estate.³⁹⁷ And, as noted, the effects on coinholders are pronounced: if crypto assets are estate property, the so-called owners of crypto-assets would be treated as creditors with unsecured claims against the custodian's bankruptcy estate.³⁹⁸ Coinholders would not capture the benefit of the sometimes-meteoric asset appreciation that affects more

394. On the property law tenet that the ownership of a crypto asset is distinct from any contractual rights linked to it (such as a contractual right to redeem a stablecoin for a predetermined dollar amount), see generally Juliet Moringiello & Christopher Odinet, *The Property Law of Tokens*, 74 FLA. L. R. 607, 609 (2022). Notably, this tenet has been enshrined in the newly enacted UCC Article 12. See generally Edwin E. Smith & Steven O. Weise, *The Proposed 2022 Amendments to the Uniform Commercial Code: Digital Assets*, BUS. L. TODAY (Mar. 25, 2022), <https://businesslawtoday.org/2022/03/proposed-2022-amendments-uniform-commercial-code-digital-assets/> [<https://perma.cc/H3LF-YAM9>].

395. See, e.g., Darren Azman, Alexandra C. Sheibe, & David L. Taub, *Treatment of Blockchain Tokens in U.S. Bankruptcy Proceedings*, 37 AM. BANKR. INST. J. 26, 27 (2018) (“[U]nless a token-purchase agreement . . . contains debt-like provisions, such as a right to repayment of principal and interest, it is difficult to see how a bankruptcy court would treat a token as anything other than an equity interest in the token-issuer (as opposed to a ‘claim’).”).

396. For a description of Gemini Trust Company's custodial work, see *Custody*, GEMINI, <https://www.gemini.com/custody> [<https://perma.cc/5CAB-YKZH>]. Paxos's exchange terms of service provide that the exchange is “managed by Paxos and operating under the trade name itBit.” *Exchange Terms and Conditions*, PAXOS, <https://paxos.com/2019/03/29/itbit-terms-and-conditions/> [<https://perma.cc/M9QQ-9SZ7>].

397. *In re Celsius Network LLC*, No. 22-10964 (MG), 2023 WL 34106, at *19 (Bankr. S.D.N.Y. Jan. 4, 2023). Whether this result is reached in other cases depends on the nature of the custody agreements operating in those cases. *Id.*

398. See SEC. & EXCH. COMM'N, COINBASE GLOBAL, INC., QUARTERLY REPORT (FORM 10-Q) at 83 (May 10, 2022).

volatile crypto-assets.³⁹⁹ Further, bankruptcy's automatic stay, which limits the activities of creditors while a bankruptcy case is pending, might prevent coinholders from moving to a non-bankrupt exchange.⁴⁰⁰ All of these factors impose a significant risk of loss on coinholders if an exchange files for bankruptcy protection.

These issues are discussed extensively in a forthcoming article by Adam Levitin.⁴⁰¹ Levitin argues that most crypto users likely do not appreciate the significant insolvency risks associated with crypto-asset custodians.⁴⁰² At worst, crypto holders risk losing the entirety of their investments.⁴⁰³ At best, they face long delays and litigation costs.⁴⁰⁴

A broader consideration is that virtually all bankruptcy procedures have to adapt to the realities of crypto-assets in a stablecoin bankruptcy. For example, baseline bankruptcy procedures, such as noticing a motion or serving process, might present novel issues in crypto bankruptcies, as parties entitled to notice might be difficult to identify or might wish to remain anonymous.⁴⁰⁵ Virtually all the legal issues that might arise will have follow-on valuation concerns. And, considering that all the terms of service discussed above contain arbitration clauses, bankruptcy litigation that falls within those clauses might be subject to an issuer's motion to compel arbitration, adding further procedural hurdles in the path of coinholder recovery.⁴⁰⁶

399. This issue was of major importance in the Mt. Gox bankruptcy case, which was filed in Japan with a chapter 15 case filed in the U.S. Over the course of the Mt. Gox bankruptcy, the value of Bitcoin skyrocketed. A customer of the exchange sought to capture the value of this appreciation by arguing that the customer held the exclusive rights in the Bitcoin and that Mt. Gox acted as a bailee. The court rejected this argument, holding "bitcoin [lacks] the necessary corporeality and the susceptibility of exclusive control to be the object of ownership." Tōkyō Chihō Saibansho [Tokyo Dist. Ct.] Aug. 5, 2015, Hei 15 (wa) no. 33320 (Japan), https://www.law.ox.ac.uk/sites/files/oxlaw/mtgox_judgment_final.pdf [<https://perma.cc/9CRE-64U4>].

400. *See generally* 11 U.S.C. § 362(a).

401. Levitin, *supra* note 37.

402. *Id.* at 4–5.

403. *Id.* at 29.

404. *Id.* at 53.

405. *Foreign Bitcoin Exchanges and Chapter 15*, WEIL RESTRUCTURING (Mar. 11, 2014), <https://restructuring.weil.com/bitcoin-bankruptcy/bitcoin-bankruptcy-foreign-bitcoin-exchanges-and-chapter-15/> [<https://perma.cc/52QP-853L>].

406. For a discussion of the enforceability of arbitration agreements in bankruptcy cases, see Kara J. Bruce, *Vindicating Bankruptcy Rights*, 75 MD. L. REV. 443, 453 (2016).

IV. POLICY IMPLICATIONS AND PRIVATE LAW SOLUTIONS

The risk present in the stablecoin market—a risk that, by our observations, is significant but little appreciated—calls for a solution. In this Part IV, we offer a few grounded in private law. But before doing so, we note that existing public law does not actually address the problems we identify in this Article.

A. Public Law Deficiencies

We observe that, while various existing legal regimes touch or have the potential to touch stablecoins,⁴⁰⁷ they do not protect coinholders from insolvency risk. With respect to securities law, the scope of the Securities and Exchange Commission's (SEC's) involvement with stablecoins depends on whether the coin or some portion of the arrangement with the coin constitutes a security.⁴⁰⁸ However, not all crypto-assets (and thus stablecoins) have the features of a security under federal law. For example, the SEC has already indicated through remarks by senior staff that neither bitcoin nor ether meet the definition of a security.⁴⁰⁹ And, while a discussion of whether a stablecoin is a security under federal law is beyond the scope of this paper, as of writing the SEC has never taken any action signaling that it views some or all stablecoins as securities nor has any federal court ever suggested that this might be case.⁴¹⁰ Moreover, federal securities law concerns itself primarily with disclosures.⁴¹¹ With few exceptions, such as with broker-dealers (which

407. For a discussion of the challenges that emerge when a transaction or a corporate action falls concurrently within the purview of two or more legal regimes, see Castellano & Tosato, *supra* note 37.

408. See Caroline A. Crenshaw, *Statement on DeFi Risks, Regulations, and Opportunities*, U.S. SEC. & EXCH. COMM'N (Nov. 9, 2021), <https://www.sec.gov/news/statement/crenshaw-defi-20211109> [<https://perma.cc/3Q2F-JJ63>]; Gary Gensler, *Remarks Before the Aspen Security Forum*, U.S. SEC. & EXCH. COMM'N (Aug. 3, 2021), <https://www.sec.gov/news/public-statement/gensler-aspen-security-forum-2021-08-03> [<https://perma.cc/N5KL-69XF>].

409. See William Hinman, *Digital Asset Transactions: When Howey Met Gary (Plastic)*, U.S. SEC. & EXCH. COMM'N (June 14, 2018), <https://www.sec.gov/news/speech/speech-hinman-061418> [<https://perma.cc/P8BD-RSJZ>].

410. For an analysis suggesting that many stablecoins are in fact securities, see *Are Stablecoins Securities?*, QUINN EMANUEL URQUHART & SULLIVAN, LLP, <https://www.quinnemanuel.com/media/u0qhjtzw/are-stablecoins-securities.pdf> [<https://perma.cc/3BXB-GNLF>].

411. 15 U.S.C. §§ 77l(a)(2), 77k(a).

are not how stablecoin issuers are currently regulated), securities law does not aim to protect investors from the insolvency of their counterparties.⁴¹²

With respect to commodities law, the Commodity Futures Trading Commission (“CFTC”) did bring an action against Tether in October 2019 claiming that the company was in violation of the law due to the omission of material facts regarding the composition of Tether’s reserve assets.⁴¹³ But here, the CFTC was taking action within its remit to curb any fraud or manipulation in commodities markets, rather than to impose any kind of safety and soundness requirements on stablecoin issuers.⁴¹⁴ Indeed, it is far from clear that either the SEC or CFTC even could impose these requirements, since stablecoin issuers—at least in their purest form—are neither commodities nor securities exchange companies,⁴¹⁵ such that they could be subjected to mandatory liquidity and asset segregation rules.⁴¹⁶

On the other hand, money transmission statutes do have safety and soundness components, and stablecoin issuers are required, due to anti-money laundering obligations imposed on them by federal law,⁴¹⁷ to obtain money transmission licenses in those jurisdictions where they do business.⁴¹⁸ However, money transmitter laws tend to be a form of light-touch regulation, with little required to obtain a license other than a relatively modest net worth

412. This is accomplished through an insurance-like fund to cover investors’ losses known as the Securities Investor Protection Corporation. *See* 15 U.S.C. §§ 78aaa–lll.

413. *Digital Asset Developments: U.S. Commodity Futures Trading Commission Asserts That Tether Is a Commodity*, GIBSON, DUNN & CRUTCHER LLP (Oct. 20, 2021), <https://www.gibsondunn.com/digital-asset-developments-us-commodity-futures-trading-commission-asserts-that-tether-is-a-commodity/> [<https://perma.cc/TV5H-VWUJ>].

414. *Id.*

415. *See* Levitin, *supra* note 37, at 64–66.

416. *See id.* (citing 17 C.F.R. § 240.15c3-1 (2022) (for securities) and 17 C.F.R. § 1.20 (2022) (for commodities)).

417. *See* FIN. CRIMES ENF’T NETWORK, FIN-2019-G001, APPLICATION OF FINCEN’S REGULATIONS TO CERTAIN BUSINESS MODELS INVOLVING CONVERTIBLE VIRTUAL CURRENCIES 9–10 (May 9, 2019), <https://www.fincen.gov/sites/default/files/2019-05/FinCEN%20Guidance%20CVC%20FINAL%20508.pdf> [<https://perma.cc/SFP4-VBPJ>]; *FinCEN Director Says Stablecoins Are “Money Transmission Services” and so Covered by Its Rules*, HOGAN LOVELLS SOLUTIONS LIMITED (Nov. 22, 2019), <https://www.engage.hoganlovells.com/knowledgeservices/news/fincen-director-says-stablecoins-are-money-transmission-services-and-so-covered-by-its-rules> [<https://perma.cc/DH7W-Y6A8>] (noting that FinCEN Director Blanco stated, “accepting and transmitting activity denominated in stablecoins makes you a money transmitter under the Banking Secrecy Act (BSA). It does not matter if the stablecoin is backed by a currency, a commodity, or even an algorithm – the rules are the same”).

418. 18 U.S.C. § 1960(a).

and paying several fees.⁴¹⁹ Firms are required to obtain a surety bond (like a type of insurance) to cover customer losses in the event funds are lost, and they are also mandated to keep on hand certain assets (typically termed permissible investments) in an amount equal to their total amount of current monetary obligations.⁴²⁰ As Adam Levitin has observed, however, these requirements are often inadequate in practice.⁴²¹ And, in any case, most state statutes do not consider or are unclear in considering crypto-assets as monetary obligations such that they must be used in the calculation of safety and soundness requirements.⁴²²

And lastly, we note the deficiencies in consumer protection law when it comes to addressing the issues raised in Part III. The main federal actors in this space are the Federal Trade Commission (“FTC”) and the Consumer Financial Protection Bureau (“CFPB”). Since stablecoin issuers are a type of nonbank/commercial firm, the FTC can police⁴²³ their activities for unfair⁴²⁴ or deceptive⁴²⁵ acts and practices. And the FTC has indeed brought such actions against crypto companies more broadly, but, even in those cases, the wrong was related to scams and fraud—not to exposing investors to insolvency risk.⁴²⁶

The CFPB, on the other hand, has even more expansive powers⁴²⁷ to engage in enforcement, rulemaking, and supervision of certain entities.⁴²⁸ Indeed, the current agency director has expressed an interest in monitoring

419. See ADAM J. LEVITIN, CONSUMER FINANCE: MARKETS AND REGULATION 75–76 (2018); see also ANDREW P. SCOTT, CONG. RSCH. SERV., R46486, TELEGRAPHS, STEAMSHIPS, AND VIRTUAL CURRENCY: AN ANALYSIS OF MONEY TRANSMITTER REGULATION 2–3, 17–18 (2020), <https://sgp.fas.org/crs/misc/R46486.pdf> [<https://perma.cc/3R8P-ZXD7>].

420. See LEVITIN, *supra* note 419, at 75–76; SCOTT, *supra* note 419, at 2–3.

421. LEVITIN, *supra* note 419, at 101 (showing the inadequacy of Michigan’s money transmitter statute against a simple set of facts regarding misdirected funds and the claims of customers to the available assets).

422. Levitin, *supra* note 37, at 66–67.

423. 15 U.S.C. § 57a(a).

424. *Id.* § 45(a)(2).

425. FED. TRADE COMM’N, POLICY STATEMENT ON DECEPTION (Oct. 14, 1983), https://www.ftc.gov/system/files/documents/public_statements/410531/831014deceptionstmt.pdf [<https://perma.cc/96GV-FHZQ>].

426. See, e.g., Complaint for Permanent Injunction and Other Equitable Relief at 1–2, FTC v. Dluca, 2018 U.S. Dist. LEXIS 192310 (S.D. Fla. 2018). See generally Emma Fletcher, *Cryptocurrency Buzz Drives Record Investment Scam Losses*, FED. TRADE COMM’N: DATA SPOTLIGHT (May 17, 2021), <https://www.ftc.gov/news-events/data-visualizations/data-spotlight/2021/05/cryptocurrency-buzz-drives-record-investment-scam-losses> [<https://perma.cc/MCG9-GDKT>].

427. 12 U.S.C. § 5536(a).

428. See *id.* §§ 5511–5519.

the crypto market for consumer harm.⁴²⁹ Yet, the CFPB's reach in this space is uncertain and untested.⁴³⁰ Whether the bureau can act will largely depend on the business model of the stablecoin company and the types of activities in which it engages—the target firms must be related to the offering of consumer financial products and services.⁴³¹ But even then, the powers given to the FTC and the CFPB are not related to safety and soundness. They, as well as state officials like attorneys general exercising CFPB-like powers,⁴³² can bring enforcement actions to address deceptive claims about the nature of reserve assets and the rights of coinholders; however, they cannot force stablecoin firms to hold their reserve assets in a particular way to protect against insolvency risk. As Angela Littwin notes: “The CFPB has no safety and soundness authority.”⁴³³

* * * * *

In sum, none of the current major public law regimes address the issues we raise here about the nature of the coinholders' claims to the reserve assets. Indeed, very little of the applicable regulatory apparatus touches on safety and soundness at all. And as far as new law, there appears to be little effort in Congress to make meaningful headway in regulating this space. This leads

429. Rohit Chopra, *Statement of CFPB Director Chopra on Stablecoin Report*, CONSUMER FIN. PROT. BUREAU (Nov. 1, 2021), <https://www.consumerfinance.gov/about-us/newsroom/statement-cfpb-director-chopra-stablecoin-report/> [<https://perma.cc/7CH5-ZJVE>].

430. *See generally* 12 U.S.C. § 5481(6) (defining a covered person); *id.* § 5481(5), (15) (defining a consumer financial product or service).

431. Providing a consumer financial product or service includes making or servicing loans and transmitting money or processing payments. All of these functions can implicate crypto companies, including stablecoin companies. For example, some crypto firms lend money that is secured using cryptocurrency, specifically stablecoins, as collateral for the loans. And, if stablecoin companies are in any way processing payments or transmitting or exchanging funds, then these activities also bring the firm under the CFPB's authority. It might also be that the stablecoin company is not directly engaged in these covered activities, but instead is providing material assistance to someone who is providing such services. *See* 12 U.S.C. § 5481(26) (defining service providers). For example, stablecoin companies that form the backbone of a lending firm's credit operations, because the issued stablecoins serve as loan collateral, could make the stable coin issuer a service provider. This would bring the company under the CFPB's jurisdiction. *See* 12 U.S.C. § 5531(b) (rulemaking power); *id.* § 5531(a) (enforcement power); *id.* § 5514 (supervision authority if the CFPB were to decide that a stablecoin firm posed a risk to consumers in its offering of a financial product or service).

432. 12 U.S.C. § 5552.

433. Angela Littwin, *Why Process Complaints? Then and Now*, 87 TEMP. L. REV. 895, 898 (2015).

us to argue that a private law, market-driven solution would be the best answer.

B. Private Law Solutions

This all then begs the question: how can stablecoin arrangements be structured such that holders have confidence in their claims to the reserve assets? In other words: what are some private law solutions?

We see these solutions as a menu of options. But before we proceed, there are a few things to observe about our goals in providing these possible paths forward. First, if the stablecoin market is to continue to grow, it is important for investors to anticipate their losses in a stablecoin collapse or insolvency scenario. The analysis provided in these pages provides such a warning to them. But in so doing, and providing the solutions below, we think the market can demand that stablecoin issuers adopt these measures.

Second, we also seek to influence regulatory approaches to stablecoins. To the extent the various public law regimes and enforcement officials described above are seeking to better understand the concerns around stablecoin activities, this project not only highlights a risk that has until now been little noticed (if at all), but we also offer approaches that could be imposed on coin-issuing firms. We hope that diligent stablecoin investors, responsible stablecoin companies, and law reformers will take note of these approaches.

One last point about the private ordering solutions that follow: they are all based on stablecoin issuers being organized as legal entities whereby reserve assets back the coins and substantiate coinholders' redemptive rights. Hence, these proposals are unworkable with decentralized stablecoins and those that adopt a dual-coin stabilization mechanism or algorithmic stabilization.

Nevertheless, regardless of their respective breadth of application, these approaches offer important insights regarding the bodies of private law—specifically, property law, contract law, and corporate law—required to forge a stablecoin that bestows its holders with a proprietary right in reserve assets, which can be effectively traded and used as collateral, and will not be lost in the event of the issuer's bankruptcy.

1. Via Reserve Holding Structure

To give coinholders the exclusive right to the reserve asset, one could simply eliminate the opportunity for competition. In other words, the coinholders would have an unsecured claim to the reserve assets but the custodial nature could be structured such that there are no other possible

creditors. This would, in essence, give the coinholders the exclusive right to the reserve assets.

There are several ways to approach perfecting such a structure. All of them involve placing the reserve assets in an entity that is bankruptcy remote.⁴³⁴ This draws on concepts familiar in the securitization context,⁴³⁵ in which pools of assets, typically loans, are placed in a special purpose entity for the benefit of investors. The entity is legally separate, distinct, and disconnected from the firm that is sponsoring the securitization. With the assets segregated into the entity, and with an operator appointed (typically a trustee), the special-purpose entity issues certificates that entitle their holders to the asset benefits—usually a portion of the principal and interest payments on the loans.⁴³⁶

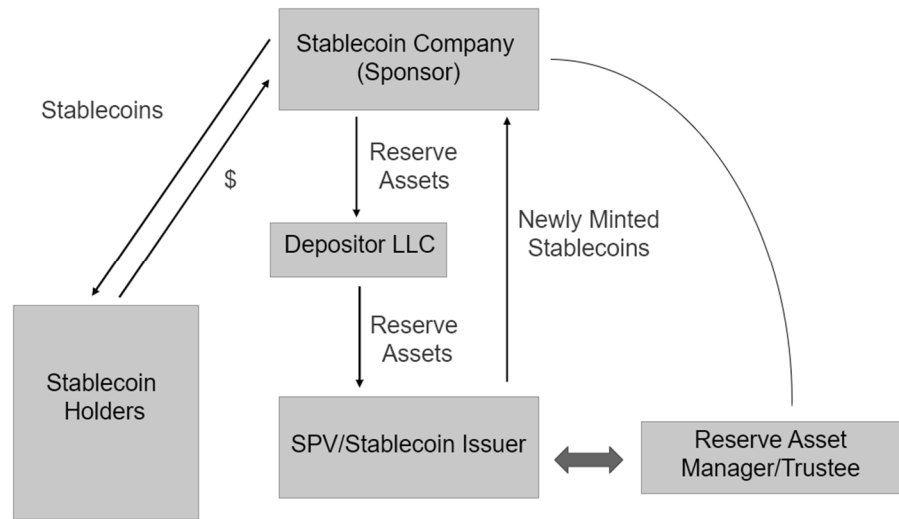
In the stablecoin context, the issuer would acquire the reserve assets in an amount sufficient to satisfy redemption demand. These assets would then be placed in a special purpose vehicle in accordance with proper bankruptcy remoteness transfers. The terms of service would reflect this arrangement. A trustee would be appointed to manage the reserve assets, acting as a fiduciary for the coinholders. In doing so, if the stablecoin issuer became insolvent, the creditors of the issuer would not have access to the reserve assets. Also, the special-purpose entity would be unable to undertake any activities other than reserve asset management. In being so limited in its corporate purpose and authority, it would not acquire any of its own creditors that could lay claim to the reserve assets. Thus, the coinholders would be the exclusive claimants to the assets. Even if the issuer filed for bankruptcy and the automatic stay were imposed, the stay would be more quickly lifted because there is no question that the property is not bankruptcy estate property.⁴³⁷ *Figure 4* below depicts this transactional setup.

434. TAMAR FRANKEL, *SECURITIZATION: STRUCTURED FINANCING, FINANCIAL ASSETS POOLS, AND ASSET-BACKED SECURITIES* 481 (2d ed. 2005).

435. *See generally* STEVEN L. SCHWARCZ, *STRUCTURED FINANCE: A GUIDE TO THE PRINCIPLES OF ASSET SECURITIZATION* (3d ed. 2022).

436. For a discussion of residential mortgage-backed loan securitizations, see CHRISTOPHER K. ODINET, *FORECLOSED: MORTGAGE SERVICING AND THE HIDDEN ARCHITECTURE OF HOMEOWNERSHIP IN AMERICA* (2019).

437. 11 U.S.C. § 362(c)(1); *see also id.* § 362(d).

Figure 4: Reserve Asset Bankruptcy Remoteness Structure

Placing the reserve assets in a bankruptcy remote entity can also have other benefits that stablecoin companies may come to desire. For instance, ratings agencies will typically require such a structuring to score securities for proper credit risk.⁴³⁸ In the event that ratings, agencies, or other new businesses come to provide ratings advice to stablecoin investors, then bankruptcy remoteness may become vital to issuer's attracting capital.

2. Via Documents of Title

A second private ordering solution to create stablecoins which are unencumbered by the structural flaws described in Part III can be extrapolated from an often-overlooked series of provisions in the Uniform Commercial Code: Article 7, governing *documents of title*.⁴³⁹

438. Kenneth M. Ayotte & Stav Gaon, *Asset-Backed Securities: Costs and Benefits of "Bankruptcy Remoteness,"* 24 REV. FIN. STUD. 1299, 1301 (2010).

439. See U.C.C. § 1-201(b)(16) (AM. L. INST. & UNIF. L. COMM'N 2001); *id.* §§ 7-201 to -210 (AM. L. INST. & UNIF. L. COMM'N 2003). The literature on U.C.C. Article 7 and documents of title in Anglo-American law is vast. See generally DAVID FRISCH, LAWRENCE'S ANDERSON ON THE UNIFORM COMMERCIAL CODE (3d ed. 2022); WILLIAM D. HAWKLAND ET AL., HAWKLAND'S UNIFORM COMMERCIAL CODE SERIES (2022); JAMES J. WHITE ET AL., WHITE AND SUMMERS' UNIFORM COMMERCIAL CODE ch. 28 (6th ed. 2022); RICHARD A. LORD, WILLISTON ON CONTRACTS §§ 53:55–53:79 (4th ed. 2022); Drew L. Kershen, *Comparing the United States Warehouse Act and U.C.C. Article 7,* 27 CREIGHTON L. REV. 735, 772 (1994) (noting nine

Codifying deeply-rooted mercantile customs and commercial law doctrines,⁴⁴⁰ the UCC defines a document of title as any “document which in the regular course of business or financing is treated as adequately evidencing that the person in possession of it is entitled to receive, hold, and dispose of the document and the goods it covers.”⁴⁴¹ Typically, an individual (called a consignor) will entrust goods with a bailee, and the bailee will then issue documents of title as a receipt.⁴⁴² The two most common types of documents of title are bills of lading and warehouse receipts, which are issued by bailees known as carriers and warehousemen respectively.⁴⁴³

The UCC distinguishes between negotiable and non-negotiable documents of title.⁴⁴⁴ The latter only contain an acknowledgement that the bailee has received the goods, coupled with their exact description.⁴⁴⁵ By contrast, negotiable documents of title include this same information but also provide that the goods are to be delivered either to the bearer of the document or to the order of a named person.⁴⁴⁶ The defining feature of negotiable documents of title is that the person possessing them is *prima facie* presumed to have both title to the document itself and the goods described therein, as well as the power to transfer such title to another person by “negotiating” to them the document of title.⁴⁴⁷

substantive comparisons and claiming the Warehouse Act and Article 7 “are fully compatible”); J.P. Ludington, Annotation, *Construction and Effect of UCC Art 7, Dealing with Warehouse Receipts, Bills of Lading, and Other Documents of Title*, 21 A.L.R.3d 1339 (1968); H.C. Gutteridge, *The Law of England and America Relating to Warehouse Receipts*, 3 J. COMPAR. LEGIS. & INT’L L. 5–12 (1921).

440. In Anglo-American law, the modern history of documents of title begins with the eighteenth-century landmark decision in *Lickbarrow v. Mason* (1794) 101 Eng. Rep. 380 (KB) (holding that the assignment of a document of title, a bill of lading, transferred title in the goods described therein to the assignee). See generally Daniel E. Murray, *History and Development of the Bill of Lading*, 37 U. MIA. L. REV. 689 (1983) (for an extensive analysis of American common law from the early 19th century regarding this subject).

441. U.C.C. § 1-201(b)(16). See generally LORD, *supra* note 439, § 53:56.

442. See generally LORD, *supra* note 439, § 53:55; Ludington, *supra* note 439, § 2; WHITE ET AL., *supra* note 439, §§ 28:1–2.

443. See generally HAWKLAND ET AL., *supra* note 439, §§ 7-101:1 to :2.

444. See U.C.C. § 7-104; see also Kershen, *supra* note 439, at 745–49 (explaining the difference between negotiable and non-negotiable warehouse receipts within the UCC framework).

445. See U.C.C. § 7-104.

446. *Id.* § 7-104(a).

447. See Kershen, *supra* note 439, at 745. This attribute of negotiable documents of title is distinct from negotiable instruments, which do not, by themselves, transfer title to the underlying funds. See U.C.C. § 3-104(a), (e) (AM. L. INST. & UNIF. L. COMM’N 2002) (defining a “note” as a promise to pay); *id.* § 3-408 (noting a draft does not operate as an assignment of funds).

Though traditionally the common law required these documents to be in the form of tangible writings, Article 7 provides that they can also be in electronic form.⁴⁴⁸ Forming a bridge between the old and the new, this provision makes it possible to deploy the UCC regime for these historied commercial law instruments into the novel world of DLT. In particular, for stablecoins, it supplies the necessary tools for an especially robust structure.

The transaction would proceed as follows: a prospective stablecoin issuer would enter into a contract with a warehouseman and deposit with them a certain quantity of a fungible and durable commodity. The parties would stipulate that the warehouseman must issue negotiable warehouse receipts that entitle the bearer of each one of these documents of title to demand delivery of a determinate quantity of the commodity deposited by the issuer. For example, if the issuer had deposited 100,000ozt of gold, the parties could agree that the warehouse would issue 100,000 warehouse receipts that would, in turn, each entitle the bearer to claim delivery of 1ozt of gold.

Crucially, the prospective stablecoin issuer and the warehouseman would also agree that these documents of title should be issued electronically, as coins recorded in the distributed ledger of a predetermined DLT network. For instance, they could be minted as “ERC-20 Tokens” for the Ethereum network or “BEP-20 Tokens” coins on the Binance Smart Chain. The stablecoin issuer would then take “control”⁴⁴⁹ of these coins and start offering them to the public. In the example above, they could be marketed as stablecoins pegged to gold (1 coin representing 1ozt gold) and backed by reserves in kind.

Notably, as UCC electronic documents of title, transactions transferring ownership in these stablecoins would be governed by Article 7.⁴⁵⁰ Pursuant to these rules, any person purchasing one of these coins “in good faith, without notice of any defense against or claim to it on the part of any person, and for value”⁴⁵¹ would acquire title to the stablecoin itself and the goods covered by it (in the example above, the 1ozt of gold) free from any

448. See U.C.C. § 7-106. See generally HAWKLAND ET AL., *supra* note 439, § 7-106:1; WHITE ET AL., *supra* note 439, § 28:3.

449. See U.C.C. § 7-106(a) (“A person has control of an electronic document of title if a system employed for evidencing the transfer of interests in the electronic document reliably establishes that person as the person to which the electronic document was issued or transferred.”).

450. See *id.* §§ 7-501 to -504, -507; see also Kershen, *supra* note 439, at 745–49; WHITE ET AL., *supra* note 439, §§ 28:9–11.

451. See U.C.C. § 7-501(a)(5). Notably, this does not apply if “it is established that the negotiation is not in the regular course of business or financing or involves receiving the document in settlement or payment of a monetary obligation.” *Id.*

conflicting claims.⁴⁵² In lockstep, the use of these stablecoins as collateral would be governed by the Article 9 regime generally applicable for the taking of security in electronic documents of title.⁴⁵³ It is worth emphasizing that this would imply that a secured creditor could perfect their security interest by taking “control” of these stablecoins and that this would award them priority over almost all competing claims.⁴⁵⁴ By providing such simple avenues to acquire title and take security, this body of rules would support the rapid circulation of these stablecoins and, consequently, their use as a payment instrument. In fact, it should be noted that this combined Article 7 and 9 regime would be very similar to that which the UCC reserves for “money.”⁴⁵⁵

This structure would also place stablecoin holders in a strong position regarding their claim to the reserve assets of the issuer. Control of an electronic document would vest them with a proprietary claim to the goods held in storage by the warehouseman (in the example above, 1ozt gold per coin) which would be upheld in the event of the stablecoin issuer’s bankruptcy.⁴⁵⁶ Moreover, at any moment in time they could demand delivery of the goods held in storage from the warehouseman.⁴⁵⁷ *Figure 5* depicts this transactional setup.

452. See Kershen, *supra* note 439, at 745–49; WHITE ET AL., *supra* note 439, §§ 28:9–11; John F. Dolan, *Good Faith Purchase and Warehouse Receipts: Thoughts on the Interplay of Articles 2, 7, and 9 of the UCC*, 30 HASTINGS L.J. 1, 4–6 (1978).

453. See generally STEVEN L. HARRIS & CHARLES W. MOONEY JR., SECURITY INTERESTS IN PERSONAL PROPERTY: CASES, PROBLEMS, AND MATERIALS 35, 57–67, 420–25 (6th ed. 2016); Dolan, *supra* note 452, at 17–21.

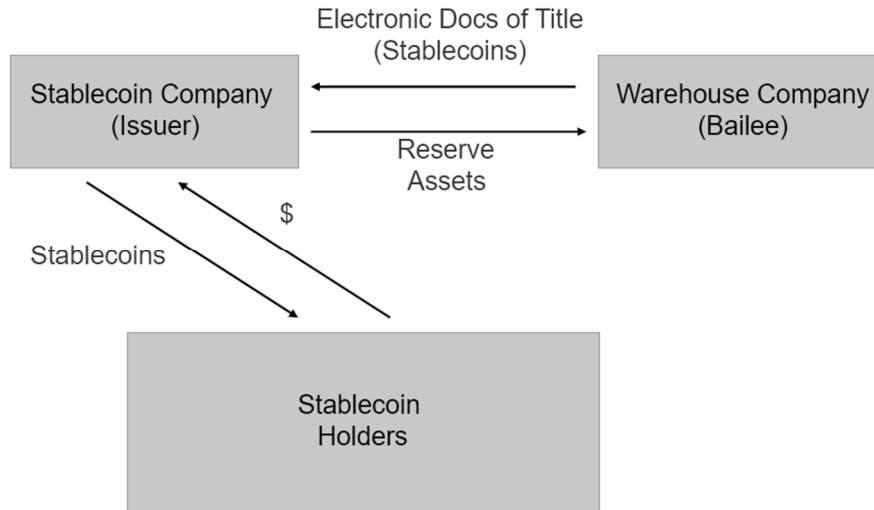
454. See generally HARRIS & MOONEY JR., *supra* note 453, at 425.

455. See U.C.C. § 1-201(b)(24).

456. See generally HARRIS & MOONEY JR., *supra* note 453, at 57–67.

457. See generally WHITE ET AL., *supra* note 439, § 28:1.

Figure 5
Transaction Step-by-Step



An intrinsic limitation of this private ordering solution is that it is only viable for centralized stablecoins that are pegged to a precious metal and undergirded by a stabilization mechanism whereby their issuer holds reserves in kind and commits to mint and redeem coins at a predetermined rate.⁴⁵⁸ By contrast, it is incompatible with centralized stablecoins backed by reserves comprised of cash, securities, debentures, investment products, and any other assets which cannot be physically stored in a warehouse and covered by a document of title.

3. Via Corporate Form

Our final solution for addressing the protection of coinholders' reserve asset claims involves the corporate form of the holder of the assets. More specifically, we argue that other stablecoin issuers could follow the lead of Gemini and Paxos in adopting a corporate personhood that is subject to regulations that, in turn, limit the rights of its creditors and other third persons to its custodial holdings. We focus on two approaches. First, the issuer could organize, much like with Binance's relationship with Paxos, as a *special*

458. See *supra* Section I.A.2.

purpose trust company. Second, the issuer could avail itself of Wyoming's *special purpose depository institution* regime.⁴⁵⁹

Many states have general trust or limited purpose trust company statutes that allow for the creation of these entities, typically with special permission from a state banking agency.⁴⁶⁰ These entities have a history dating back to the 1960s and the crisis that resulted from increased trading on the New York Stock Exchange, which led to the volume of investment paper overtaking the exchange's trading capacity and created a panic on Wall Street.⁴⁶¹ In response, the New York State Banking Department, acting under its more general authority to charter banks and trust companies, authorized the *limited purpose trust company*.⁴⁶² The purpose of this type of trust company was to help facilitate securities trading without the need to move around such significant amounts of paper certificates.⁴⁶³ Over time, the uses for these companies were expanded, including as employee benefit trusts, personal trusts, corporate trusts, securities clearances, and custodial services. Importantly, these trust companies are not generally allowed to make loans or take deposits.⁴⁶⁴ This limits their range of activities, and thus their potential liabilities.

Under New York law, obtaining a limited purpose trust company charter requires adherence to many of the same standards as obtaining a commercial bank charter.⁴⁶⁵ The only major exceptions being that limited purpose trust companies are held to lower minimum capitalization levels compared to banks (\$2 versus \$50 million) and, unlike New York banks, limited purpose

459. *Special Purpose Depository Institutions*, WYO. DIV. BANKING, <https://wyomingbankingdivision.wyo.gov/banks-and-trust-companies/special-purpose-depository-institutions> [<https://perma.cc/96G5-T4PY>] (last visited Oct. 18, 2022) [hereinafter SPDI].

460. See, e.g., ALASKA STAT. § 06.26.050 (2022); ARIZ. REV. STAT. § 6-246 (2022); ARK. CODE ANN. § 23-51-102 (2022); CAL. FIN. CODE § 1600 (2022); DEL. CODE ANN. tit. 5, § 775 (2022); 760 ILL. COMP. STAT. 75/2 (2022); LA. STAT. ANN. § 6:575 (2022); MINN. STAT. § 48A.01 (2022); OKLA. STAT. tit. 6, § 6-1001 (2022); TEX. FIN. CODE ANN. § 182.001 (2022).

461. Alice Gomstyn, *How a Blizzard of Paperwork Paralyzed Wall Street in the 1960s*, BUS. INSIDER (Oct. 19, 2015, 3:49 PM), <https://www.businessinsider.com/wall-street-paperwork-crisis-in-1960s-2015-10> [<https://perma.cc/MK2L-Y8T7>].

462. See generally N.Y. BANKING LAW § 102 (2022).

463. *Organization of a Trust Company for the Limited Purpose of Exercising Fiduciary Powers*, N.Y. STATE DEP'T FIN. SERVS., https://www.dfs.ny.gov/apps_and_licensing/banks_and_trusts/procedure_certificate_merit_trust_comp#:~:TEXT=THE%20TERM%20%20LIMITED%20PURPOSE%20TRUST,TAKE%20DEPOSITS%20OR%20MAKE%20LOANS [<https://perma.cc/J5Q4-ASUH>] [hereinafter NY LPTC].

464. *Id.* (noting that this restriction is imposed by the New York banking agency and can be found in the chartering documents for each limited purpose trust company).

465. See *id.*

trust companies are not required to obtain FDIC deposit insurance (since they cannot take deposits).⁴⁶⁶ Importantly, the trust company, once established, cannot change its operations without the approval of the state banking agency.⁴⁶⁷

Since June of 2019, New York has expanded its use of the limited purpose trust company to virtual currency businesses.⁴⁶⁸ Helpful for a stablecoin issuer, limited purpose trust companies do not have to obtain money transmission licenses in New York or from nearly all of the various states where it does business.⁴⁶⁹ This relieves the firm from regulatory compliance burdens across many jurisdictions that would otherwise apply to it.

However, merely organizing oneself as a limited purpose trust company does not automatically mean that the reserve assets will be held in a custodial manner for the coinholders. This will depend on the agreements between these parties and the way the assets are treated by the trust company. Nevertheless, the fact that a limited purpose trust company, by its nature, is designed to act in a fiduciary manner⁴⁷⁰ might help buttress arguments that its holding of reserve assets is custodial in nature. And, helpfully for coinholders, if a limited purpose trust company is chartered to serve a custodial function as to reserve assets, then the New York banking regulator,

466. *Id.* (“[F]inancial criteria required in the application process for a limited purpose trust company charter are similar to those of a full service bank or trust company with two notable exceptions: the minimum level of capitalization and the requirement for FDIC insurance.”); *see also Commercial Bank: Information and Procedure*, N.Y. STATE DEP’T FIN. SERVS., https://www.dfs.ny.gov/apps_and_licensing/banks_and_trusts/information_and_procedure [<https://perma.cc/4A6R-FP3F>] (last visited Oct. 19, 2022).

467. NY LPTC, *supra* note 463.

468. Kimberly Monty Holzel et al., *New York Department of Financial Services Announces New Virtual Currency Initiatives*, JD SUPRA, LLC (July 31, 2020), <https://www.jdsupra.com/legalnews/new-york-department-of-financial-55717/> [<https://perma.cc/6RDN-WVQ6>].

469. *See* Houman Shadab, *What itBit’s Banking Law Charter Really Means*, COINDESK (Sept. 11, 2021, 7:41 AM), <https://www.coindesk.com/markets/2015/05/17/what-itbits-banking-law-charter-really-means/> [<https://perma.cc/5D5Q-BC4C>]; *see also* N.Y. BANKING LAW § 641(1) (2022) (“No person shall engage in the business of selling or issuing checks, or engage in the business of receiving money for transmission or transmitting the same, without a license therefor obtained from the superintendent as provided in this article . . . provided, however, that nothing in this article shall apply to a bank, trust company . . .”).

470. NY LPTC, *supra* note 463 (describing limited purpose trust company activities as being “under the fiduciary umbrella”); *see also* N.Y. BANKING LAW § 100 (2022) (“Every trust company shall have . . . the following powers: . . . [t]o take, accept and execute any and all such trusts, duties and powers of whatever nature or description as may be conferred upon or entrusted or committed to it by any person or persons . . . and to receive, take, manage, hold and dispose of according to the terms of such trust, duty or power, any property or estate, real or personal, which may be the subject of any such trust, duty or power.”).

through its supervision and examination process, should be in a position to routinely check for compliance.⁴⁷¹ We note, however, that the supervisory/regulatory agreements between the trust companies and the New York banking regulator are not made public, so there is no way to know with confidence what is happening behind the scenes. This aspect of the chartering process makes it suboptimal for generating coinholder confidence.

Another possibility is the special purpose depository institution (SPDI) that recently became available under Wyoming law. This special kind of corporate form was created in 2019,⁴⁷² with the idea in mind that these companies would “focus on digital assets, such as virtual currencies, digital securities and digital consumer assets.”⁴⁷³ These companies appear to be organized under Wyoming corporate law⁴⁷⁴ but have special charter approval (and are thus accorded special powers) from the Wyoming banking agency.⁴⁷⁵ Among an SPDI’s permissible acts are all those that are “usual or incidental to the business of banking,”⁴⁷⁶ including “[c]ustody, safekeeping and asset servicing, including [digital asset] custodial services”⁴⁷⁷ Under Wyoming law, the custodial holding of digital assets comes with a host of protections for the owner of those assets. Specifically, the SPDI must undergo audits and other forms of routine supervision regarding its custodial activities; but, more importantly, the statute specifically creates safeguards for the consumer with a claim to the digital asset.⁴⁷⁸ For example, the SPDI may not “engage in any activity to use or exercise discretionary authority relating to a digital asset except based on customer instructions.”⁴⁷⁹ This would eliminate the ambiguity about the nature of the coinholder-issuer relationship in those instances where the issuer retains discretion to invest the reserve assets, such as those discussed in Part II above. Also, the customer of the SPDI who deposits digital assets with the entity can elect to have the asset held “under a bailment as a nonfungible or fungible asset.”⁴⁸⁰ More specifically, the statute provides that digital “[a]ssets held [in this bailment

471. See NY LPTC, *supra* note 463.

472. See WYO. STAT. ANN. §§ 13-12-101 to -126 (2022) (titled “Special Purpose Depository Institutions Act”).

473. SPDI, *supra* note 459.

474. WYO. STAT. ANN. § 13-12-103(a) (2022).

475. *Id.* §§ 13-12-109(a), -111(a)–(b), -114.

476. *Id.* § 13-12-103(b)(vii).

477. *Id.* § 13-12-103(b)(vii)(A).

478. See generally SPDI, *supra* note 459.

479. WYO. STAT. ANN. § 34-29-104(k) (2022).

480. *Id.* § 34-29-104(d)(i).

context] shall be strictly segregated from other assets.”⁴⁸¹ They are, per the law, “not depository liabilities or assets of the [SPDI].”⁴⁸²

Wyoming’s solution would not, however, address all the risks we describe in Part III. First, the special rules on custody described above only apply to instances where the thing being held is a digital asset. A digital asset is defined as “a representation of economic, proprietary or access rights that is stored in a computer readable format and is either a digital consumer asset, digital security or virtual currency.”⁴⁸³ A digital consumer asset is generally defined as “an open blockchain token,” a digital asset that is an investment security,⁴⁸⁴ or a kind of virtual currency. For those stablecoin issuers that use crypto-assets as their reserve assets, the SPDI’s special custodial services rules would apply to protect consumers. Also, the definition of digital consumer asset and digital security may be broad enough to include certain kinds of uncertificated stocks and bonds, both of which routinely serve as reserve assets. For those reserve assets that do not otherwise qualify as digital assets (and thus neither for the heightened custodial rules), they would be held in a more routine custodial manner, which—as with the limited purpose trust company—might help make the custodial case when the terms of service are unclear.

We observe again that the use of these special corporate forms and charters is not a guaranteed method for ensuring that reserve assets are held in a custodial manner for the exclusive benefit of the coinholders. However, certain aspects of their custodial/trust nature might help tip the scales in close cases. And, in the case of Wyoming’s SPDI, if the reserve assets are digital assets, then special statutory rules should give coinholders even greater confidence in their exclusive claims, depending again on the agreements entered by parties regarding the reserve assets.

CONCLUSION

Despite recent downturns, the crypto market persists. Whether for good or ill, investors large and small continue to find allure in the promise of crypto. And, as we’ve shown in these pages, an emergent and increasingly central component of the crypto system is the stablecoins. Yet, attention to the private law underlying stablecoins has been noticeably absent in the fervor surrounding crypto-assets in general, and stablecoins in particular. To the

481. *Id.*

482. *Id.* § 34-29-104(d).

483. *Id.* § 34-29-101(a)(i).

484. *Id.* § 17-4-102(a)(xxviii) (2022) (defining a “security” to include items, among others, like notes, treasury stocks, and bonds).

extent stablecoins have received attention, it has been focused exclusively on public law approaches. By exploring the nature of stablecoin holders' rights in the bankruptcy process, this Article not only reveals important weaknesses in the stablecoin system, but also shows the continued relevancy—and indeed, promise—of private law in the digital age.