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SYMPOSIUM: BLOCKCHAIN AND BEYOND: THE INTERACTION BETWEEN DISTRIBUTED LEDGER TECHNOLOGY AND THE LAW

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Editor's Note

It is with great pleasure that *Chapman Law Review* releases the second Issue of Volume Twenty-Six. This Issue is centered around *Chapman Law Review's* twenty-sixth annual symposium, "Blockchain and Beyond: The Interaction Between Distributed Ledger Technology and the Law," which took place on January 27, 2023. The discussion at the event centered around both the regulation of blockchain technology and the implementation of blockchain technology within the legal field. With the increased investment and dependence on crypto assets, the U.S. government has attempted to implement laws and regulations to keep bad actors from taking advantage of the technology. But how can the government regulate the crypto assets if they do not fit into a pre-existing category. Are they securities? Are they property? As the government attempts to define and regulate crypto assets, new types of blockchain technology are developed, including stablecoin, non-fungible tokens, and decentralized autonomous organizations. With constant new developments in the technology and the law, practitioners must be prepared to address the constant innovation. How will it affect the legal industry? How will it affect the world? The distinguished speakers that participated in our event that took place at Chapman University Dale E. Fowler School of Law addressed these questions.

It was a privilege to host Professor John O. McGinnis from Northwestern Pritzker School of Law as the symposium's keynote speaker. During his address, Professor McGinnis focused on the paradoxes inherent in crypto; addressed how decentralized finance currently depends on obsolete centralized finance institutions and is indirectly subjected to agency regulation; and explained the irony that blockchain technology, through central bank digital currencies, gives governmental entities more power.

The first panel, consisting of Professor George Geis, Professor Michele Neitz, Billy Abbott, and Ravi Mohan included a riveting discussion about blockchain, the law, and the future. The panelists explored the possible classifications of crypto assets and the expansive uses, including recordkeeping, ethical fashion, voting, litigation, smart contracts, and more. This panel then explored the future of blockchain and how it can create the next era of the internet, improve the stock exchange system, and be utilized for social good.

During the second panel, attendees learned about the battle between innovation and regulation of blockchain technology from Professor Lan Cao, Professor Carol Goforth, and Professor Tom W. Bell. The discussion explained the need to find balance because regulation is necessary to impede bad actors, but a complete ban would be impractical. The panelists addressed the implications of this battle in everything from central bank digital currencies to the special jurisdictions of an Indian nation.

It was inspiring to observe the astonishing exchange of ideas about this cutting-edge topic. Blockchain technology has and will continue to rapidly change every industry, including the legal industry. *Chapman Law Review* would like to extend our utmost gratitude to the panelists and keynote speaker for their intriguing insight addressing the interaction between distributed ledger technology and the law. We would also like to thank each of our esteemed authors for their contribution to this ongoing discussion. This Issue features various articles from our panelists opining on the same questions addressed in the physical symposium and the keynote address.

The *Chapman Law Review* is extremely thankful for Professor Eggert for his support in coordinating and organizing this incredible event and for moderating both panels. We are also thankful for the members of the administration and faculty that made our symposium event, as well as the publication of this Issue, possible, including our faculty advisor, Professor Celestine McConville; Assistant Dean of Student Affairs, Dean Camille Heenan; Interim Dean of Chapman University Dale E. Fowler School of Law and Professor of Law, Dean Marisa S. Cianciarulo; Law Events Coordinator, Jonathan Smith; Digital Media and Marketing Manager, Deane Sutic; and our esteemed faculty advisor committee, including Professor Kenneth Stahl, Professor Nancy Schultz, and Professor Carolyn Larmore. Additionally, I would like to thank and recognize *Chapman Law Review's* Executive Program Editor, Jared Shahar, for his industriousness and dedication to making this year's symposium an outstanding success.

Finally, it was an absolute honor to work with the 2022-2023 *Chapman Law Review* editors. I am eternally grateful for your hard work throughout this year, and I am incredibly proud of the issue that we created together. This Issue would not have been possible without your commitment and passion. Thank you.

Haley A. Ritter
Editor-in-Chief

Two Paradoxes of Crypto

*John O. McGinnis**

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INTRODUCTION

A lot of financial innovation is now encompassed by the term “crypto”—Bitcoin, Ethereum, stablecoins, crypto-exchanges, and digital central bank currencies, to name just a few. But what we should think about these financial innovations and what, if anything, the law should do about them depends on making sharp distinctions among different phenomena that are covered by the same meme. In this brief talk, I will argue that one distinction is central: to what degree are the financial innovations decentralized, in that they are not controlled by the government or any intermediary? If the financial innovations are genuinely decentralized and transparent, there is no longer a need for

* George C. Dix Professor in Constitutional Law at Northwestern University Pritzker School of Law. This is an edited version of a luncheon speech given at a conference entitled “Blockchain and Beyond: The Interaction between Distributed Ledger Technology and the Law” at Chapman University Fowler School of Law on January 27, 2023.

regulations that are focused on constraining agency costs. Such innovations have created a new mechanism for trust that does not generate the usual principal-agent problems of financial intermediaries. There may still be a need for regulation for other reasons—for instance, to prevent externalities—but much regulation of financial institutions concerns agency costs.

The second theme of this talk is the paradoxes of crypto. Both paradoxes concern the relation of centralized and decentralized finance. The first is how currently decentralized and novel institutions like Bitcoin depend on an ecosystem that is filled with institutions closely resembling more centralized financial intermediaries of the past. The intertwining of decentralization and centralization in this ecosystem is one of the central features of crypto today. These financial intermediaries are, in turn, regulated by the most centralized entity of all—the state. Thus, one emerging question for crypto today is how much even decentralized financial institutions need more centralized financial intermediaries to operate. Here, my view is that initially institutions like Bitcoin do need such intermediaries, and thus their ecosystem will be subject to regulation for agency costs reasons, even if Bitcoin itself is not. The longer-term question is whether many of these intermediaries can also be decentralized with the aid of the blockchain.

The second paradox is that while Bitcoin began as a radical libertarian project, it now inspires central bank digital currency, which ironically can give far more power to the government over the financial lives of its citizens than it has today. Perhaps even more ironically, the presence of that power and its possible abuse may give greater impetus to Bitcoin as citizens flee a kind of currency that can give the government more authority over their lives. Decentralized and centralized financial institutions remain in fundamental tension in their structures, even when they both use the blockchain and are called digital currencies. Nevertheless, they can both intertwine and feed off one another.

I. BITCOIN—THE PARADIGM OF THE NEW DECENTRALIZED FORM OF TRUST

Let us begin with Bitcoin, both because Bitcoin was the big bang of the crypto universe and because it provides a clear model of innovation that is radically decentralized and aspires to the status of a currency.

Bitcoin is the brainchild of Satoshi Nakamoto, whoever he, she, or they were.¹ Nakamoto figured out how to solve the greatest problem with a digital currency—how to determine who possessed it without relying on any central authority since any single authority would be difficult to trust. His brilliant idea was to link the creation of the currency to verifying transactions in the currency. To simplify: when someone wants to transfer Bitcoin to another person, he sends the Bitcoin from his digital wallet (a kind of encrypted computer file) to the other person's digital wallet.² The digital wallets are identified by public keys, but the sender can release the Bitcoin by a private key known only to him.³ The transaction is then broadcast publicly so it can be verified in a way that everyone knows that the sender has the private key, but cannot see the actual key. The verification process requires the solving of complex computer equations that are linked to the particular transaction.⁴ Through solving the equations with computers, individuals called “miners” can then verify the transaction.⁵

The miner who most likely verifies the transaction by adding it to the “blockchain” (a public ledger) of all Bitcoin transactions gets paid in Bitcoins for his work.⁶ Other miners essentially agree by a majority vote, as measured by computation power, which miner has triumphed.⁷ Thus, the creation of new currency is linked to the process of verifying it. In other words, the process itself gives incentives to deploy the substantial computer processing power that keeps the system going. The currency also is defined to have a finite amount of Bitcoin, preventing inflation. Most Bitcoin has in fact already been created. Each year, the amount that is created to pay the miners for verifying the

¹ There is no conclusive evidence as to the identity of Bitcoin's creator. *See Who Is Satoshi Nakamoto?*, COINDESK (Feb. 9, 2023, 5:25 AM), <http://www.coindesk.com/learn/who-is-satoshi-nakamoto/> [<http://perma.cc/PJZ6-MSY7>].

² *See* DANIEL DRESCHER, BLOCKCHAIN BASICS: A NON-TECHNICAL INTRODUCTION IN 25 STEPS 103–09 (2017).

³ *See id.* at 93–101.

⁴ *See id.* at 153–64.

⁵ *See id.*

⁶ For a discussion on Bitcoin's mining incentives, see Chris Pacia, *Bitcoin Mining Explained Like You're Five: Part 1 – Incentives*, ESCAPE VELOCITY (Sept. 2, 2013), <http://chrispacia.wordpress.com/2013/09/02/bitcoin-mining-explained-like-youre-five-part-1-incentives/> [<http://perma.cc/8RYS-ZSW9>].

⁷ *See generally* Nathaniel Popper, *Into the Bitcoin Mines*, N.Y. TIMES: DEALBOOK (Dec. 21, 2013, 1:42 PM), <http://dealbook.nytimes.com/2013/12/21/into-the-bitcoin-mines> [<http://perma.cc/62TL-W4BP>] (describing the Bitcoin mining technology and the miners' roles in the Bitcoin system).

transaction is halved, until 2140, when all of the preset amount of Bitcoin will have been created.⁸

Although the creation of Bitcoin is impressive as a technological innovation, Bitcoin's central innovation is in trust—the essential characteristic of any currency that will have long-term success and of any payment system. To understand this, contrast Bitcoin with older forms of currencies—one public and one also private. The more familiar, of course, is public money.

Bitcoin does not require faith in any public institution that creates money.⁹ In this, it aspires to make a radical break with our current monetary order because that order is strongly centralized by the state. So-called fiat currency, like the dollars in your pocket, depends not on trust in an algorithm and a group of individuals who have the incentive to maintain it, but in the state. Indeed, the entire idea of modern monetary theory is built on the view that it is only a government agent, like a monarch, the Federal Reserve, or some other centralized authority that can instill trust.¹⁰

But the difficulty is that there are many reasons not to trust government currency. That is obvious in what I have elsewhere called monetarily oppressive regimes like Venezuela, where dictatorial regimes subordinate maintaining the value of the currency to other non-public regarding values.¹¹ But it is even true of a much better currency like the dollar. The Federal Reserve has maintenance of the value of the currency as only one of its objectives. For instance, it wants to make sure that the currency functions in such a way as to create full employment.¹² Full employment is a value that can be understood as public regarding. Assuring that everyone has a job is good for personal happiness and political stability. But nevertheless, this objective creates an agency cost between the individual who is only interested in maintaining the value of the currency and the government that has other objectives. Thus, Bitcoin is distinguished from fiat money precisely because it does not have the agency costs of public money.

⁸ See Gareth Jenkinson, *A Glimpse into the Future - What Happens When There Are No More Bitcoin to Mine?*, COINTELEGRAPH (May 6, 2018), <http://cointelegraph.com/news/a-glimpse-into-the-future-what-happens-when-there-are-no-more-bitcoin-to-mine> [<http://perma.cc/9HZ8-NPTV>].

⁹ John O. McGinnis & Kyle Roche, *Bitcoin: Order Without Law in the Digital Age*, 84 IND. L. REV. 1497, 1500 (2019).

¹⁰ See GEORG FRIEDRICH KNAPP, *THE STATE THEORY OF MONEY* 2 (1924).

¹¹ See *id.* at 171.

¹² See 12 U.S.C. § 225a.

There have been previous experiments in creating private currency by using private bank notes. Unlike the government currencies, banks do not have public regarding interests that may conflict with maintaining the value of the money. But banks are financial intermediaries that are run for profit. Thus, their profit motivation creates another kind of agency cost. They may seek profits at the expense of sound currency. Certainly, private banks have historically engaged in imprudent lending and investments and thus, the value of their currency has dropped.¹³

Thus, Bitcoin is potentially superior to both public and private currency in terms of reducing agency costs. I say potentially superior because it does not yet function as a currency in any but the most monetarily oppressive regimes. It is too volatile in value to be a good store of value or unit of account.¹⁴ But the absence of agency costs shows that one traditional reason for regulating financial intermediaries is absent for Bitcoin. There is no intermediary to create these costs and the need for regulation to constrain agency costs and prevent fraud because of Bitcoin itself. The consensus mechanism which the minting of Bitcoin pays for is itself the antidote to agency costs.

II. BITCOIN V. FIAT MONEY

Nevertheless, if Bitcoin succeeds in its aspiration to become a currency, it will ultimately do so at the expense of fiat money. Thus, if one thinks that Bitcoin might succeed and believes that fiat money has many virtues, that prospect furnishes a reason for regulation now, because as Bitcoin becomes more valuable and attracts more stakeholders, it will be politically more difficult to regulate. But the most plausible reason for regulation is not rooted in agency costs, but in externalities. For instance, those who favor public money believe it has public benefits such as stabilizing the government and promoting full employment. Thus, it needs to be protected against an upstart that lacks these public benefits.¹⁵

The question of the attractiveness, in theory, of a private currency like Bitcoin versus fiat money is a classic debate between libertarians and supporters of greater governmental power. The

¹³ See RICHARD HOFSTADTER, *THE AMERICAN POLITICAL TRADITION: AND THE MEN WHO MADE IT* 51 (1948) (describing the era of free banking in which banks failed due to imprudent actions).

¹⁴ See John Crawford, *Safe Money*, 104 MARQ. L. REV. 411, 452–53 (2020).

¹⁵ See William J. Luther, *Regulating Bitcoin – On What Grounds?*, in REFRAMING FINANCIAL REGULATION: ENHANCING STABILITY AND PROTECTING CONSUMERS 391, 406 (Hester Peirce & Benjamin Klutsey eds., 2016).

latter have confidence that wise government oversight has large public benefits, like promoting full employment or shortening recessions. More libertarian theorists would respond that the government lacks the knowledge to achieve those benefits, and in some cases, leaders will use their authority to benefit themselves, creating better conditions for their reelection at the expense of future prosperity. On this view, government intermediaries, like private intermediaries, create agency costs that may outweigh their potential public benefits.¹⁶

III. THE FIRST PARADOX OF CRYPTO: BITCOIN'S CURRENT DEPENDENCE ON CENTRALIZED FINANCIAL INTERMEDIARIES

If Bitcoin is to grow into a more stable currency, it will need financial intermediaries to do so. Now let me touch on the first paradox of crypto: its immediate future is intertwined with the kind of financial institutions that one might think blockchain is designed to replace. For instance, most people lack the ability to hold Bitcoin on their own—there is too much danger that they will lose the keys that allow them to transact on the blockchain. They will thus lose their investment as a whole. There are many sad stories of people who are searching for millions of dollars of Bitcoin because they discarded a piece of paper or a laptop with the information.¹⁷

Thus, cryptocurrency wallets and exchanges are needed to popularize Bitcoin. But these wallets and exchanges resemble traditional financial intermediaries. Let me be clear: financial intermediaries are valuable. They provide third party verification and reduce information asymmetries.¹⁸ But they also introduce problems of opportunism, including new kinds of informational asymmetries and agency costs. Even while they verify the actions of others, there remains the question of who will verify their own actions. *Quis custodiet ipsos custodes?*¹⁹

Thus, the case for regulating them is as strong as the case for regulating any financial intermediary. The implosion of FTX is

¹⁶ On government agency costs, see M. TODD HENDERSON & SALEN CHURI, *THE TRUST REVOLUTION: HOW THE DIGITIZATION OF TRUST WILL REVOLUTIONIZE BUSINESS AND GOVERNMENT* 33–34 (2019).

¹⁷ See, e.g., Aatif Sulleyman, *Man Who 'Threw Away' Bitcoin Haul Now Worth over \$80M Wants to Dig Up Landfill Site*, INDEPENDENT (Dec. 4, 2017, 5:41 PM), <http://www.independent.co.uk/life-style/gadgets-and-tech/news/bitcoin-value-james-howells-newport-landfill-hard-drive-campbell-simpson-laszlo-hanyecz-a8091371.html> [<http://perma.cc/E4SB-J4Z9>].

¹⁸ Christian Catalini & Joshua S. Gans, *Some Simple Economics of the Blockchain* 6 (Rotman Sch. of Mgmt., Working Paper No. 2874598, 2019), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2874598 [<http://perma.cc/99KB-SJ5V>].

¹⁹ Translates to “who will guard the guards themselves?”

itself a story of agency costs. It is alleged to have used its customer cryptocurrency to support speculative trading in cryptocurrency on its own account.²⁰ The problem is no different than if the firm had used, for its own speculation, traditional financial securities like stocks and bonds, which it held in its customers' accounts.

To succeed as a currency, Bitcoin and any other similar crypto will also need the same kind of financial mechanisms used to deepen the market for other financial assets.²¹ These include future markets to facilitate price discovery and exchange-traded funds ("ETFs") that allow smaller investors to participate more effectively in owning the asset. If these structures require financial intermediaries immediately, they will need regulation as well. For instance, the Securities and Exchange Commission has so far denied a Bitcoin-focused ETF because of dangers of fraud in the underlying exchanges.²² That may well not be the right decision, but it is the kind of decision that it makes in evaluating other ETFs. Thus, even for a cryptocurrency like Bitcoin that should not itself be regulated, there is this paradox: to succeed, these structures currently seem to require financial intermediaries to function optimally and those intermediaries create the very agency problems that Bitcoin is designed to avoid.

IV. DECENTRALIZING THE ECOSYSTEM OF DECENTRALIZED CRYPTOCURRENCIES

One possible way out of the paradox is to develop financial institutions, like exchanges, that do not resemble the financial intermediaries of old because, like Bitcoin, they themselves are radically decentralized in their control. Such decentralized organizations could be a community organized around a blockchain and smart contracts.²³ All the decisions of such a blockchain would depend on consensus rules and the smart contracts that are run on them. Smart contracts automatically execute agreements without the need for human decision-making

²⁰ See Paige Tortorelli & Kate Rooney, *Sam Bankman-Fried's Alameda Quietly Used FTX Customer Funds for Trading, Says Sources*, CNBC (Nov. 14, 2022, 8:08 AM) <http://www.cnbc.com/2022/11/13/sam-bankman-frieds-alameda-quietly-used-ftx-customer-funds-without-raising-alarm-bells-say-sources.html> [<http://perma.cc/FDL8-TS5W>].

²¹ See Vildana Hajric, *With Its Volatility on the Decline, Is Bitcoin Fading Away or Just Maturing?*, L.A. TIMES (Oct. 5, 2018, 3:55 PM), <http://www.latimes.com/business/la-fi-bitcoin-volatility-20181005-story.html> [<http://perma.cc/M33J-W6MG>].

²² See Self-Regulatory Organizations; Bats BZX Exchange, Inc., Exchange Act Release No. 34-83723, 2018 WL 3596768 (July 26, 2018).

²³ See PRIMAVERA DE FILIPPI & AARON WRIGHT, BLOCKCHAIN AND THE LAW: THE RULE OF CODE 29 (2018).

when a set of preconditions are met.²⁴ I believe that we can expect more such entities acting as exchanges and other financial intermediaries. The costs of decentralization are likely to continue to fall, being driven down by advances in computation and cryptography.

This structure is a new form of corporate governance—a digital instantiation of the idea that the corporation is ultimately a nexus of contracts.²⁵ It eliminates the need for the managers. It thus also gets rid of the agency costs between shareholders and managers that beset corporate governance.²⁶ But the particular need for regulation of financial intermediaries generally focuses on the agency costs between customers, like depositors, because a financial institution does not bring together only investors and managers, but also financial asset holders of various kinds.

The hope is that such entities running on the blockchain will reduce or even eliminate the agency costs to which financial intermediaries are peculiarly subject. The argument for their ability to reduce such agency costs derives from the kind of rules under which they operate. They are consensus made and thus impervious to rapid change. Moreover, the contracts which execute their operations are transparent or can be made so. Thus, anyone dealing with the intermediary can know just what the blockchain-run intermediary can and cannot do with their money. They will then reduce or perhaps eliminate the opportunism inherent in more centralized financial intermediaries. They will have extended the range of the pure and spontaneous order of the market at the expense of hierarchical organizations that formed traditional intermediaries.²⁷

But what about the incentives to create such platforms or exchanges? Few people are likely willing to set up or, to be more precise, be the coordinator of the consensus rules for nothing. The most obvious way for a founder of such a platform to be compensated is to create some token that is used for payment of transactions on the site. Assuming the platform is successful, that token will become more valuable. But, as I will discuss in more detail below, the law likely regards such tokens as

²⁴ See *id.*

²⁵ See, e.g., Frank H. Easterbrook & Daniel R. Fischel, *Corporate Control Transactions*, 91 YALE L. J. 698 (1981).

²⁶ See Manuel A. Utset, *Towards a Bargaining Theory of the Firm*, 80 CORNELL L. REV. 540, 553–54 (1995).

²⁷ Sinclair Davidson et al., *Economics of Blockchain*, SSRN 1, 2–7 (Mar. 8, 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2744751 [<http://perma.cc/A8CR-X4JA>].

securities and regulates them because they create agency costs between the seller and buyer of the token. The buyer is dependent for the value of the token on the actions of the seller in coordinating the establishment of the blockchain and its rules. Now perhaps the answer to this difficulty is that while the initial offering may be regulated, it will cease to be so if the token becomes widely held and if its value no longer depends on the actions of the seller, but only on the transparent consensus rules of the blockchain.²⁸

Another possible counterargument is that these rules can be transparent, yet very complex. Calculating their effects could require substantial knowledge and expense. It may be that even in the best case, such blockchains would thus not completely eliminate agency costs, particularly for less sophisticated holders of financial assets. But as the cost of computation falls, services would develop that would make it easier for everyone to predict the effects of the rules. Thus, in my view, the jury is still out on whether the ecosystem for cryptocurrencies can itself be decentralized in a manner that will radically reduce, if not eliminate, the agency costs that justify the peculiar regulation of financial intermediaries.

V. CRYPTO THAT IS PART OF A CENTRALIZED FINANCIAL INTERMEDIARY

So far, we have looked at crypto that is decentralized and the centralized intermediaries that deal in crypto. There are also financial intermediaries that are constituted by crypto, but themselves remain centralized financial intermediaries. Such intermediaries and the crypto assets they use, while they may be labeled as crypto finance, should be regulated because, unlike Bitcoin, they raise the agency cost problems of traditional financial intermediaries.

²⁸ The possibility that a token may cease to become a security is recognized by the test that M. Todd Henderson and Max Raskin propose to determine whether a token is a security. See M. Todd Henderson & Max Raskin, *A Regulatory Classification of Digital Assets: Toward an Operational Howey Test for Cryptocurrencies, ICOs, and Other Digital Assets*, 2019 COLUM. BUS. L. REV. 443, 460–62 (2019). They offer the so-called “Bahamas Test” that asks whether a token has become sufficiently decentralized such that it is no longer dependent on the managerial actions of actors, like a founder. *Id.*

A. Initial Coin Offerings

For instance, some firms try to fund themselves through what are called initial coin offerings or ICOs.²⁹ These security tokens attempt to raise money for some enterprise by selling tokens that can be redeemed from those using services, functions, or utilities on the blockchain.³⁰

It is clear that the buyer of a security token has a principal-agent relation with the issuer. To realize the value of the token, like the value of a security, the buyer is dependent upon the issuer—the agent—for fulfilling its promises. In securities law, the question of whether the relation creates an investment contract subject to federal securities law turns on the *Howey* test.³¹ That test has been seen to contain four elements.³² First, there must be an investment of money.³³ Second, the investment of money must be in common enterprise.³⁴ Third, there must be an expectation of profit.³⁵ Fourth, that expectation must depend on the enterprise of others.³⁶

Bitcoin does not qualify as a security as the Securities and Exchange Commission itself recognizes.³⁷ Bitcoin is no more a common investment enterprise than any other currency. Its value does not now depend on any promoter or set of promoters. Instead, Bitcoins are paid for by those who verify the blockchain—a very decentralized group.³⁸

But those who engage in initial coin offerings are holding out that the token has value either because, like a security, that token will participate in the profits of the enterprise or enable the purchase of something valuable the enterprise builds.³⁹ It does not follow that the details of regulating initial coin offerings must follow all of those for security offerings. It may well be that some modifications are needed but, assuming that one believes

²⁹ See Randolph A. Robinson II, *The New Digital Wild West: Regulating the Explosion of Initial Coin Offerings*, 85 TENN. L. REV. 897, 924–27 (2018) (describing the explosive growth in ICOs).

³⁰ See *id.* at 925.

³¹ See SEC v. W.J. Howey Co., 328 U.S. 293, 298–99 (1946).

³² *Id.*

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.*

³⁷ See William Hinman, Dir., Div. of Corp. Fin., Sec. and Exch. Comm'n, Remarks at the Yahoo Finance All Markets Summit: Crypto (June 14, 2018), <http://www.sec.gov/news/speech/speech-hinman-061418> [<http://perma.cc/WM5G-4XWP>].

³⁸ See Henderson & Raskin, *supra* note 28, at 470–71.

³⁹ See Carol Goforth, *Securities Treatment of Tokenized Offerings Under U.S. Law*, 46 PEPP. L. REV. 405, 434 n. 194 (2019).

securities regulation is justified, there is no reason not to apply regulation similar in concept to security tokens.

B. Stablecoins

Another kind of crypto—the stablecoin—is also a new kind of financial intermediary. Stablecoins are digital assets like Bitcoin, but their value derives from being backed by other assets.⁴⁰ The assets backing the stablecoin may in fact be traditional fiat currency like the dollar.⁴¹ Others are backed by other digital assets or a basket of digital assets.⁴² The stablecoin can then be traded digitally or used to purchase assets like other cryptocurrencies.⁴³

Stablecoins are financial intermediaries. Insofar as they are controlled by companies or individuals, they are not decentralized financial intermediaries like Bitcoin. It is the company or individuals who make the decisions about what assets and what amounts of assets to back the stablecoin. Those using the stablecoins depend on these representations for their confidence in the stablecoins' value. Much of the controversies about stablecoins revolve around whether that confidence is justified. Some issuers of stablecoins have engaged third-party audits to increase that confidence.⁴⁴ That effort underscores their agency cost problem as does the continued skepticism about some of the audits.

Stablecoins in fact resemble the private bank notes that were issued in the nineteenth century. These banks also created money issued by private intermediaries.⁴⁵ Some of those private banks did not have sufficient backing in gold or other assets to repay depositors.⁴⁶ That is essentially the same problem facing stablecoins that have gotten them into trouble. Unlike Bitcoin itself, stablecoins are not a new mechanism for trust. It does not follow that they are a worse mechanism than public fiat money. Just as there remains a debate about how problematic private currency was

⁴⁰ See ESWAR S. PRASAD, *THE FUTURE OF MONEY: HOW THE DIGITAL REVOLUTION IS TRANSFORMING CURRENCIES AND FINANCE* 155 (2021).

⁴¹ See *id.*

⁴² See *id.*

⁴³ See *id.*

⁴⁴ See, e.g., Oluwapelumi Adejumo, *Third Party Auditor Confirms Binance Bitcoin Reserve is Over Collateralized*, CRYPTOSLATE (Dec. 7, 2022, 3:05 PM), <http://cryptoslate.com/third-party-auditor-confirms-binance-bitcoin-reserve-is-over-collateralized/> [http://perma.cc/K4RW-CPPX].

⁴⁵ See LAWRENCE H. WHITE, *COMPETITION AND CURRENCY: ESSAYS ON FREE BANKING AND MONEY* 31–34 (1989).

⁴⁶ See Shirley J. Gedeon, *The Modern Free Banking School: A Review*, 31 J. ECON. ISSUES 209, 220 (1997).

in the nineteenth century, there will likely develop a similar debate today about the virtues of stablecoins versus fiat currency.

The reasons for that debate will be similar. Even if stablecoins have agency costs and thus reasons for distrust, so does government money. The best way to understand how great that distrust may become in the modern era is to describe yet another kind of digital asset—this one minted and controlled by the government.

VI. CENTRAL BANK DIGITAL CURRENCY AND THE SECOND PARADOX OF CRYPTO

Now let me turn to the final paradox of crypto. While crypto began as a libertarian movement to free people's financial affairs from the state, now the government may be getting into the digital asset game with central bank digital currency ("CBDC"). Cryptocurrency does not necessarily need to be private. Governments could issue their own digital currency—dollars, euros, and renminbi could all become digital, available to everyone, and even eventually the exclusive form of the government's currency.⁴⁷ The rise of CBDCs would provide a dramatic counterpoint to the libertarian vision of cryptocurrency. The form will be digital, but the trust required will still be in the government.

Central banks may well adopt cryptocurrencies that are available to consumers because they have other advantages over paper money, particularly from the viewpoint of the state. For instance, they allow governments to track the use to which the money is put because the government keeps the ledger of transactions.⁴⁸ As a result, they inhibit black markets and criminal activity facilitated by cash.

CBDCs also permit central banks to manage monetary policy more effectively. For instance, CBDCs would allow a central bank to break through what central bankers regard as the zero rate interest boundary.⁴⁹ Currently, central banks cannot create negative interest rates easily because if banks are forced to charge citizens for holding their nation's money, citizens will take their money out of banks and hold it under the mattress or perhaps in a more secure personal vault. But if all currency is digital, the

⁴⁷ See PRASAD, *supra* note 40, at 194–95. There would also be a more limited kind of CBDC available only to banks—a wholesale, as it were, CBDC as opposed to a retail CBDC. *See id.* This more limited form would not have the dramatic implications described here. *See id.* at 195.

⁴⁸ *See id.* at 217.

⁴⁹ *See id.* at 204.

central bank can itself reduce the absolute value of people's money over time by varying the algorithm that creates the money.

According to some economists, CBDCs also increase the effectiveness of the tools of fiscal policy by allowing the government to target economic stimulus more effectively. With CBDCs, the government could distribute money with an algorithm that would make it valueless unless it is spent within a certain time or for certain kinds of transactions.⁵⁰

But simply stating these “advantages” shows how government digital cryptocurrencies might provide enormous new powers to the state. The central bank could potentially track all your purchases. It could reduce even the nominal value of your money. It could tell you what you are permitted to buy. The state might become a monetary panopticon and a potential central controller of a citizen's economic life. If one trusts the government, it will use these powers benevolently. But there are agency costs for the government as well. Public choice theories show that citizens, because of ignorance, both rational and otherwise, very imperfectly control the state.

A CBDC thus confirms the worst libertarian fears of those who launched private cryptocurrency. Given that a CBDC would give the government so much more power, CBDCs would require even more trust in the government—a trust that is hard to justify. Even the past performance of the Fed has made many people wary of giving it power. For instance, the current value of the dollar is only three percent of what it was when the Federal Reserve was founded.⁵¹ Moreover, trust in the government in general is falling and that decline also affects the Fed.

As a result, there is yet another paradox in the crypto space that would be raised by the introduction of CBDCs. They are being conceived in large measure to mirror and compete with private cryptocurrencies. But, because they may threaten to empower the state in ways that many individuals fear, their effect may cause citizens to flee from fiat currency to private crypto. They may improve the prospects that private cryptocurrency, rather than government cryptocurrency, will ultimately govern our monetary world.

⁵⁰ See *id.* at 222–24.

⁵¹ See *Consumer Price Index for All Urban Consumers: Purchasing Power of the Consumer Dollar in U.S. City Average*, FED. RSRV. BANK OF ST. LOUIS (Mar. 14, 2023), <http://fred.stlouisfed.org/series/CUUR0000SA0R> [<http://perma.cc/933Y-EF2C>].

Thus, we may witness a grand competition between government and private cryptocurrency. The digital age has not guaranteed a victory for private currency so much as set up another fierce battle between private and public ordering between the collective force of the state and the innovation of human genius.

CONCLUSION

The internet began in 1983.⁵² For its first fifteen years, it had relatively limited effects on the economy and our lives. But its importance has grown exponentially so that people today spend much of their lives online. The introduction of Bitcoin—the big bang of crypto—happened less than fifteen years ago. Since then, there has been a profusion of many kinds of crypto, a kind of Cambrian explosion in the monetary and investment space. It still has yet to dominate our financial lives as the internet does our personal lives.

But assume, as I do, that Blockchain is to value as the internet is to information—a mechanism for increasing the efficiency of its exchange—then we just need to give it time. In this talk, I have tried to lay out two of the paradoxes that will accompany its growth and whose resolution will determine its success.

⁵² See *A Brief History of the Internet*, UNIV. SYS. OF GA., [http://www.usg.edu/galileo/skills/unit07/internet07_02.phtml#:~:text=January%201%2C%201983%20is%20considered,Protocol%20\(TCP%2FIP\)](http://www.usg.edu/galileo/skills/unit07/internet07_02.phtml#:~:text=January%201%2C%201983%20is%20considered,Protocol%20(TCP%2FIP)) [<http://perma.cc/KS9H-7YN3>] (last visited Mar. 15, 2023).

The Anything Asset: The Tax Classification of Cryptocurrency, NFTs, DAOs and Other Digital Assets

*Billy Abbott**

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INTRODUCTION

The rapid rise (and, in some cases, swift fall) of the digital asset economy has been incessantly chronicled in the business and legal press for a decade.¹ From Bitcoin and other cryptocurrencies, to decentralized autonomous entities (“DAOs”) and non-fungible tokens (“NFTs”),² new asset classes and business models have burst onto the scene, with lawmakers and government regulators

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¹ See, e.g., Wulf A. Kaal, *Digital Asset Market Evolution*, 46 J. CORP. L. 909, 910 (2021); Ari Levy & MacKenzie Sigalos, *Crypto Peaked a Year Ago — Investors Have Lost More Than \$2 Trillion Since*, CNBC (Nov. 14, 2022, 3:07 AM), <http://www.cnbc.com/2022/11/11/crypto-peaked-in-nov-2021-investors-lost-more-than-2-trillion-since.html> [<http://perma.cc/QZ8D-8F22>].

² In this Article, these and similar assets are referred to collectively as “digital assets.”

struggling to keep up. In some cases, the lack of a legal framework is precisely what “Web3” proprietors want; but, it should come as no surprise that governments do not view digital assets as exempt from the rules that apply to familiar financial products and transactions. Of course, deciding whether digital assets should be regulated is the easy part for governments—the thorny question is *how* should they be regulated.

One area in which lawmakers may wish to move quickly is in taxes. But drafting tax rules requires attention to a number of often conflicting principles. Income tax law must be drafted so broadly that transactions do not unfairly escape its scope. But it also must be drafted with enough specificity to prevent taxpayers from exploiting loopholes to avoid paying appropriate tax. The best tax statutes and regulations are practical; tax law should not deter commercially desirable transactions unless those transactions should be discouraged for some other compelling reason.

The “quickest” avenue for promulgating new tax rules in the United States is through the Internal Revenue Service (“IRS”), but such rules are often challenged.³ Regulatory action is also possible, but the process takes longer and is more cumbersome. And any action, short of an act of Congress, is limited by the Internal Revenue Code (“the Code”)⁴ and judicial interpretations.

Perhaps because of these challenges, the United States has addressed the taxation of digital assets in only very limited ways.⁵ It is, of course, not uncommon for tax laws to lag behind cutting-edge technologies. As a result, tax advisors are often left to apply existing laws to new situations through analogy; in those situations, the question is not what rules apply to a particular asset or transaction, but rather what previously addressed situation—with rules to manage it—is most similar to the one at hand. From there, a tax advisor can determine what direction or principle can be derived from those rules to inform how to evaluate the new circumstances. Unless and until the U.S. government provides more specificity in its rules, the analogy method of analysis will likely be the most viable for transactions involving digital assets.

³ See Kristin E. Hickman, *The Federal Tax System's Administrative Law Woes Grow*, 41 A.B.A. TAX TIMES, 6 (2022), http://www.americanbar.org/content/dam/aba/publishing/aba_tax_times/22winspr/att-22winspr-000-complete-issue.pdf [<http://perma.cc/GZ8F-AJQF>].

⁴ All references to the Code in this Article are to the Internal Revenue Code of 1986, as amended.

⁵ See generally David C. McDonald, *Coining New Tax Guidance: How the IRS is Falling Behind in Crypto*, 28 U. MIA. INT'L & COMP. L. REV. 152, 152–54 (2021).

So, the first question for any tax practitioner looking at a digital asset will be this: What is it? Given the flexibility of digital assets as evidenced by their already varied use, in a sense, a digital asset can be almost anything. Although tax advisors are used to applying old rules to classify new assets, the versatility of digital assets will stretch that approach and change the practice of tax law. This Article will explore the interesting and challenging issue of classifying digital assets: first, through specifically considering the tax classification of common categories of digital assets—cryptocurrency, DAOs, and NFTs—and second, by asking whether any or all of those assets can be classified as “securities” or “commodities” under a few key provisions of the Code.

I. VIRTUAL CURRENCY: IRS’S INITIAL APPROACH TO CLASSIFICATION

The first digital asset to reach the popular consciousness was Bitcoin.⁶ First mined in 2009, Bitcoin slowly increased in value through 2013, reaching around \$150; its value increased significantly in 2014, rising to \$1000; and in 2017, it began its meteoric rise, topping out at \$68,789 in November 2021.⁷ It subsequently fell to around \$16,000, where it stood in December of 2022.⁸ Since the birth of Bitcoin, more than 20,000 other cryptocurrencies have been created.⁹ Bitcoin’s shift in value in 2014 coincided with (or perhaps caused) the IRS to pay more attention to cryptocurrency, resulting in the first specific, substantive guidance regarding the tax classification of digital assets.

In Notice 2014-21,¹⁰ the IRS first acknowledged it was aware of the development of what it referred to as “virtual currency,” which it defined as “a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value”

⁶ See James Royal & Brian Beers, *Bitcoin’s Price History: 2009 to 2023*, BANKRATE (Jan. 24, 2023), <http://www.bankrate.com/investing/bitcoin-price-history/> [<http://perma.cc/7A9G-FRA8>].

⁷ *Id.*

⁸ *Historical Data for Bitcoin*, COIN MKT. CAP, <http://coinmarketcap.com/currencies/bitcoin/historical-data/> [<http://perma.cc/PK8H-VPJW>] (last visited Jan. 19, 2023). Of course, neither the rise nor the fall has been completely steady, but rather famously subject to significant swings.

⁹ See Coryanne Hicks & Farran Powell, *Different Types of Cryptocurrencies*, FORBES (Dec. 7, 2022, 11:01 AM), <http://www.forbes.com/advisor/investing/cryptocurrency/different-types-of-cryptocurrencies/> [<http://perma.cc/UD9S-CHCK>].

¹⁰ I.R.S. Notice 2014-16, I.R.B. 938.

without a designation as legal tender by any jurisdiction.¹¹ The Notice was intended to provide initial guidance regarding the taxation of “convertible” virtual currency—meaning virtual currency that has an equivalent value in real currency or acts as a substitute for real currency.¹² The IRS issued its substantive guidance in the form of frequently asked questions (“FAQs”), and the first two spoke directly to how convertible virtual currency should be classified for U.S. tax purposes.¹³

In its answer to its second FAQ, the IRS concluded that at the most basic level, virtual currency is to be classified as property.¹⁴ Although the Notice does not include any detailed discussion on this high-level analysis, the purpose of this conclusion is perhaps to clarify that virtual currency is subject to taxation like any other asset. Although many early cryptocurrency adopters welcomed the fact that the asset existed largely outside of government regulation, the IRS made clear that the asset would not avoid the U.S. income tax net.¹⁵

But simply being classified as “property” yields only the most basic guidance about rules. There are many types of property that are subject to special rules based on their particular characteristics.¹⁶ For example, stock in a corporation is a form of property that is subject to expansive special rules that do not apply to any other form of property—e.g., stock can be exchanged by a shareholder without incurring tax through the tax-free reorganization and other provisions of the Code.¹⁷ And another type of property, real estate, is the only type of property that can be part of a tax-free like-kind exchange.¹⁸

¹¹ *Id.* Since the issuance of Notice 2014-21, Bitcoin has become legal tender in both El Salvador and the Central African Republic in September 2021 and April 2022, respectively. Similar designations are being considered in Saint Kitts and Nevis, Paraguay and potentially elsewhere. *See 5 Countries that Could be Next in Line to Adopt Bitcoin as a Legal Tender*, CNBC TV18 (Nov. 22, 2022, 3:57 PM), <http://www.cnbc18.com/cryptocurrency/bitcoin-as-legal-tender-5-countries-that-could-be-next-in-line-to-adopt-15228761.htm> [<http://perma.cc/CT8B-2X65>]. This raises the possibility that Bitcoin would no longer be subject to the Notice as a result of no longer meeting the definition of “virtual currency,” but the IRS has not given any indication that this will be the case.

¹² I.R.S. Notice 2014-16, I.R.B. 938.

¹³ *See Frequently Asked Questions on Virtual Currency Transactions*, INTERNAL REVENUE SERV. (Jan. 13, 2023), <http://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions> [<http://perma.cc/7FBH-Y2JR>].

¹⁴ *See id.*

¹⁵ *See id.*

¹⁶ *See, e.g.*, I.R.C. §§ 355, 1031.

¹⁷ *See, e.g.*, I.R.C. §§ 332, 351, 355, 361.

¹⁸ *See* I.R.C. § 1031.

The existing tax law applicable to foreign currency—another form of property—might have provided tax practitioners with analogies when analyzing transactions involving Bitcoin and other cryptocurrencies.¹⁹ But, in its response to the second FAQ in Notice 2014-21, the IRS foreclosed that possibility, stating only that it had reached its finding pursuant to “currently applicable law.”²⁰ That said, the IRS has defined foreign currency as “the coin and paper money of a country other than the United States that is designated as legal tender, circulates, and is customarily used and accepted as a medium of exchange in the country of issuance.”²¹ Thus, it stands to reason that since cryptocurrency lacked coin and paper, legal tender status, and a country of issue at the time Notice 2014-21 debuted, the IRS would not treat it as foreign currency.²²

The other FAQs in Notice 2014-21 and additional FAQs released in 2019 with Revenue Ruling 2019-24²³ (addressing “airdrops” and “hard forks”) are consistent with the classification described above, and do not indicate that cryptocurrency will have any special classification for tax purposes. Indeed, the IRS’s clear position is that payment for services in cryptocurrency is taxable compensation subject to self-employment taxes and wage withholding.²⁴ Payments made in virtual currency are subject to information reporting and backup withholding.²⁵ Virtual currency received through mining will constitute trade or business income if that mining activity reaches the thresholds applicable to any other trade or business.²⁶ All of these rules apply to the tax classification of most ordinary forms of property, from trucks to televisions to digital assets.

Any guidance from the IRS in this area is useful to tax advisors, and acknowledging that virtual currency is not foreign currency for U.S. tax purposes is helpful. But, unfortunately, the limited and bare statements in Notice 2014-21 and subsequent guidance do not help tax advisors classify other forms of digital assets.

¹⁹ Foreign currency is subject to additional rules not applicable to other forms of property. See I.R.C. §§ 985–988.

²⁰ I.R.S. Notice 2014-21, 2014-16 I.R.B. 938, Q&A (Q–2).

²¹ Rev. Rul. 2019-24, 2019-44 I.R.B. 1004 (citing 31 C.F.R. § 1010.100(m) (2022)).

²² The designation of Bitcoin as the legal tender of certain foreign jurisdictions could call into question whether it will still fall outside the definition of foreign currency. Compare CNBC TV18, *supra* note 11, with I.R.C. §§ 985–988.

²³ See I.R.S. Notice 2014-21, 2014-16 I.R.B. 938, Q&A; Rev. Rul. 2019-24, 2019-44 I.R.B. 1004.

²⁴ See I.R.S. Notice 2014-21, 2014-16 I.R.B. 938, Q&A (Q–9, Q–10, Q–11).

²⁵ See I.R.S. Notice 2014-21, 2014-16 I.R.B. 938, Q&A (Q–12, Q–14).

²⁶ See I.R.S. Notice 2014-21, 2014-16 I.R.B. 938, Q&A (Q–9).

II. DAOS: ENTITIES OR NOT?

Cryptocurrency is not the only digital asset class to burst onto the scene in recent years. Another use for blockchain technology has become part of the digital economy. A decentralized autonomous organization or DAO is governed by “smart contracts” on a blockchain network.²⁷ A smart contract is similar to a standard legal contract, but the smart contract is carried out through self-executing rules on a computer network.²⁸ In a DAO, those smart contracts permit members to act collectively, without necessarily requiring a centralized governance structure.²⁹ An individual or entity becomes a member of the DAO by purchasing a token issued by the DAO, which represents the right to vote on the DAO’s activities and/or an economic share of the DAO’s assets.³⁰ Like other smart contracts, a DAO’s transactions take place on a blockchain so the record can be publicly viewed and verified.³¹ DAOs have often focused primarily on making investments as determined by a vote of their token-holders, but theoretically a DAO could operate a business or do anything that a corporation or limited liability company (“LLC”) could do.

This Article will focus in particular on investment DAOs, but DAOs have also been used to organize social clubs and govern the development of other digital asset platforms and tokens. There are two essential tax classification issues with DAOs: how to classify the DAO itself, and how to classify the token held by a DAO’s members.

A. Tax Classification of Entities³²

The application of U.S. tax law varies significantly depending on whether a taxpayer is an individual or an entity. An individual citizen or resident of the United States is generally subject to tax on their worldwide income at the applicable federal, state and local income-tax rates.³³ Similarly, a corporation organized under the laws of the United States, any state, or the

²⁷ See generally William K. Pao, Scott Sugino, Wenting Yu, Luc Moritz, Bill Martin, Billy Abbott, Laura Smith, Emma Persson, Damilola G. Arowolaju, *Decentralized Autonomous Organizations (DAOs): Overview*, PRACTICAL LAW FINANCE, at 1 (2022).

²⁸ See *id.*

²⁹ *Id.* at 2.

³⁰ *Id.*

³¹ *Id.*

³² See generally *id.* at 5.

³³ See, e.g., *U.S. Citizens and Resident Aliens Abroad*, INTERNAL REVENUE SERV. (Nov. 29, 2022), <http://www.irs.gov/individuals/international-taxpayers/us-citizens-and-resident-aliens-abroad> [<http://perma.cc/5ECZ-EQ7V>].

District of Columbia is generally subject to income tax at the rates applicable to corporations.³⁴

Other common forms of business entities are “pass-through” in nature—generally such entities are not subject to U.S. income tax themselves, but rather the owners of those entities pay U.S. income tax on their share of the entities’ income.³⁵ If an entity is a pass-through entity, the Treasury Regulations generally classify it, by default, as disregarded if it has only a single member and as a partnership if it has more than one equity-holder.³⁶ Other than for actual corporations, the same Treasury regulations—often referred to as “check-the-box” rules—allow an entity formed in the United States to choose its own tax classification.³⁷ Thus, for example, an LLC, which by default would be classified as either disregarded or as a partnership, may elect to be treated as a corporation instead.

Perhaps it is important for classifying a DAO that an entity can exist for U.S. tax purposes even when no legal entity has been formed. Treasury Regulations provide that an entity will exist for tax purposes if participants in a joint venture or similar arrangement—in what is often referred to as a “contractual partnership”—carry on a trade, business, financial operation, or venture and divide the profits.”³⁸ Such arrangements will then be subject to all the rules applicable to partnerships or, if so elected, as corporations.

The classification questions become more complex for entities not formed under domestic law, which are therefore considered foreign entities under the Code.³⁹ Subject to a list of exceptions,⁴⁰ under the “check-the-box” regulations, a foreign entity’s default

³⁴ See, e.g., CT Corporation Staff, *What Are the Corporate Tax Filing and Reporting Requirements?*, WOLTERS KLUWER (Feb. 17, 2023), <http://www.wolterskluwer.com/en/expert-insights/corporate-tax-and-reporting-requirements> [http://perma.cc/6NXK-9Q8V].

³⁵ See, e.g., Heather Huston, *Compare Tax Considerations by Business Type*, WOLTERS KLUWER (Jan. 22, 2021), <http://www.wolterskluwer.com/en/expert-insights/compare-tax-considerations-by-business-type> [http://perma.cc/3TFA-SQKR].

³⁶ See Treas. Reg. § 301.7701-3(a)–(b)(1) (1996). In some cases, U.S. tax law offers other forms of specialized pass-through entities—for example, corporations meeting certain technical requirements are pass-through in nature, such as “S corporations.” See, e.g., Huston, *supra* note 35.

³⁷ See *Classification of Taxpayers for U.S. Tax Purposes*, INTERNAL REVENUE SERV. (Nov. 16, 2022), <http://www.irs.gov/individuals/international-taxpayers/classification-of-taxpayers-for-us-tax-purposes> [http://perma.cc/LEW4-9GYP].

³⁸ See Treas. Reg. § 301.7701-1(a)(2) (1996).

³⁹ See Treas. Reg. § 301.7701-5(a).

⁴⁰ See Treas. Reg. § 301.7701-2(b)(8) (1996) (providing that certain foreign entities are “per se” corporations that may not elect any other classification).

classification for U.S. tax purposes is generally a disregarded entity or a partnership if none of its owners or members has unlimited liability for its debts, or a corporation if all its owners or members have limited liability for its debts.⁴¹ Like U.S. entities, however, most foreign entities may elect a different tax classification.⁴²

Once it is established that an entity exists, the responsibilities of that entity under U.S. tax law reach beyond the requirement to pay income tax. Both corporations and partnerships are subject to extensive tax- and information-return filing requirements.⁴³ Partnerships in particular may be responsible for distributing to their partners the information necessary for those partners to pay tax on their pass-through share of income (i.e., Schedule K-1s).⁴⁴ Also, entities of any kind are often required to collect tax forms and withhold taxes from their members, employees, and consultants, among others. The specific requirements differ somewhat if the entity is foreign. For example, a domestic partnership is required to file an IRS Form 1065 and distribute Schedule K-1s in all cases; a foreign partnership is generally only required to file a return with the IRS if it is engaged in a trade or business in the U.S. or has earned certain other forms of income from U.S. sources.⁴⁵ Assuming an investment DAO is not operating its own trade or business directly, it would also be treated as an entity engaged in a trade or business in the United States if it invested in a pass-through entity that itself was so engaged.⁴⁶

B. Applying Classification Rules to DAOs

Given the clear importance of entity classification to the U.S. tax system, how DAOs are classified will have far-reaching implications for both the government's efforts to collect revenue and for the DAO's and its members' ability to comply with their respective tax obligations.

Some DAOs have chosen to make the entity classification issues easier for tax advisors by pursuing a traditional route of legal-entity formation.⁴⁷ Forming a legal entity offers a number of

⁴¹ See Treas. Reg. § 301.7701-3(b)(2).

⁴² See *id.*

⁴³ See, e.g., CT Corporation Staff, *supra* note 34; *About Form 1065, U.S. Return of Partnership Income*, INTERNAL REVENUE SERV. (Feb. 24, 2023), <http://www.irs.gov/forms-pubs/about-form-1065> [<http://perma.cc/E8F5-RBD8>].

⁴⁴ *2022 Partner's Instructions for Schedule K-1 (Form 1065)*, INTERNAL REVENUE SERV. 1 (Jan. 17, 2023), <http://www.irs.gov/pub/irs-pdf/i1065sk1.pdf> [<http://perma.cc/3VZV-ATST>].

⁴⁵ See Treas. Reg. § 1.6031-1(b).

⁴⁶ See I.R.C. § 875(1).

⁴⁷ See generally Pao et al., *supra* note 27.

benefits to its members, including certainty of limited liability and a greater ability to enter into transactions with actors in the traditional economy that may not be open to, or capable of, operating solely through the movement of cryptocurrency.⁴⁸ LLCs, in particular, are quite flexible in their governance structure, and they would lend themselves well to being governed through a system of smart contracts, since state laws generally do not require them to have a board of directors, hold shareholder meetings, or follow other formalities. Some states have even enacted LLC laws tailored for DAOs.⁴⁹

If a DAO operates as an LLC, the tax classification questions are relatively simple. A DAO formed as an LLC under state law will, by default, be a disregarded entity if it has one equity-holder and a partnership otherwise.⁵⁰ It can elect to be classified as a corporation if it so chooses. A DAO using another form of domestic entity should similarly be able to get a clear classification answer from its tax advisors under the existing legal framework.

Yet for many Web3 actors and investors, one of the primary benefits of the digital economy is the ability to remain unencumbered by the regulatory state.⁵¹ That's why many DAOs will reject the traditional wrapper of an LLC or other legal entity. But, choosing another path by no means removes the DAO from the income tax net—it just makes a DAO's tax compliance (and tax advisor's job) harder.

As described, an entity may exist for tax purposes without having the legal personality of a corporation or LLC. A typical investment DAO would seem to fit within the contractual partnership framework. Take one of the earliest DAOs—simply named “The DAO”—for example.⁵² The DAO was intended to operate like a venture capital firm; it raised \$150 million in cryptocurrency and intended to invest in start-ups as directed by The DAO's token-holders.⁵³ This seems clearly to be a “venture” carried out by the DAO token-holders in order to “divide profits”—

⁴⁸ See Miles Brooks, *Starting a Crypto LLC or Corporation: Tax Benefits and Drawbacks*, COINLEDGER, <http://coinledger.io/blog/crypto-llc-or-corporation-taxes> [<http://perma.cc/VFR9-6QBG>] (last visited Mar. 5, 2023).

⁴⁹ See, e.g., VT. STAT. ANN. tit. 11, § 4173 (West 2018).

⁵⁰ But, as discussed *infra*, determining the number of equity holders may not be so simple for a DAO.

⁵¹ See Julien Chaisse, *Toward a Big Bang for the Taxation of the Digitalized Economy: Business Retrospective, Perspective, and Prospective*, 41 VA. TAX REV. 345, 347 (2022).

⁵² See Robbie Morrison et al., *The DAO Controversy: The Case for a New Species of Corporate Governance?*, 3 FRONTIERS BLOCKCHAIN 1, 1 (2020).

⁵³ See *id.* at 5–6.

in other words, a contractual partnership.⁵⁴ A typical venture capital fund set up through a limited partnership or LLC under Delaware or other state law looks quite similar to this (though its investments are often less investor-directed). If The DAO had survived a hack that ultimately brought it down, it is certainly possible that the IRS could have reached that conclusion.⁵⁵

But the classification challenge wouldn't have ended there. The next step would have been to determine whether The DAO was a domestic or foreign entity. The DAO had not been formed using a legal wrapper, so looking to the law of the jurisdiction of formation would not have been an option. Under the applicable Treasury Regulations, it appears that The DAO would likely have been considered a foreign entity for tax purposes. That would, in part, have been good news for The DAO—had it actually made investments. The DAO would only have been required to file a U.S. federal income tax return if it had been engaged in a trade or business in the United States, and if The DAO had limited its activities to buying and selling stocks in corporations, this would not have been the case.⁵⁶ Indeed that is the approach that venture capital funds often take to minimize tax compliance issues for themselves and their investors.⁵⁷ But a typical venture capital fund has sophisticated professionals focused on the tax consequences of its investments. A DAO by nature does not have such centralized management, so it is quite likely that The DAO's owners would not have obtained tax advice before recording a vote calling for The DAO to invest in an LLC. Without tax advice, The DAO's owners might have unwittingly caused The DAO or its owners to have an undesirable U.S. income-tax filing obligation.

The DAO would also have had withholding obligations. At the very least, it would have been required to collect IRS Forms W-9 or W-8 from its investors to determine its withholding

⁵⁴ The Lummis-Gillibrand Responsible Financial Innovation Act, S. 4356, 117th Cong. § 204(a) (2022), would have declared that the default classification of a DAO, once certain requirements are met, was "a business entity which is not a disregarded entity." While this would have made clear that a DAO is in fact a business entity for tax purposes, it is unclear what is the purpose of stating that is not a disregarded entity. *See id.* This is contrary to standard entity classification principles that would determine whether an entity is disregarded based on whether it is classified as a corporation or not and thereafter based on the number of its equity holders.

⁵⁵ *See Morrison et al., supra* note 52, at 6.

⁵⁶ *See infra* text accompanying note 92.

⁵⁷ *See Why VCs Only Invest in C Corporations*, LIGHTER CAP., <http://www.lightercapital.com/blog/why-vc-only-invest-in-c-corporations> [http://perma.cc/7T9W-MYBZ] (last visited Apr. 2, 2023).

obligations and to comply with reporting regimes, such as the Foreign Account Tax Compliance Act (“FATCA”),⁵⁸ Failure to comply with any reporting obligation would result in significant penalties on any entity,⁵⁹ and there is no reason to believe the IRS would have carved out an exception for The DAO. And meeting those obligations would have undoubtedly posed a significant practical problem for The DAO, whose owners are recorded anonymously on the blockchain. An exhaustive list of the compliance challenges of tax-entity classification is beyond the scope of this Article, but even this short list illustrates the significant challenges facing any tax lawyer—even after the classification question has been answered.

C. What About the Tokens?

The classification of a DAO as an entity is only half of the story; DAO token-holders must comply with their own tax obligations as well. And for the holders, a key question is how to classify a DAO’s tokens.

Before even considering how a DAO may be different, the tax classification of financial instruments issued by an entity involves a complicated and intensive analysis derived from a long history of case law and IRS guidance. The most common situation tax advisors encounter in this area is the classification of an instrument as either debt or as equity of the issuer. While not conclusive,⁶⁰ some of the hallmark characteristics of equity include (1) the ability to share in the profits and losses of the business enterprise, (2) the right to participate in its management, and (3) treatment of the instrument as equity for accounting, securities, and other non-tax purposes.⁶¹ Debt, on the other hand, typically (1) consists of an unconditional right to receive a fixed amount on the maturity date, (2) carries a right to interest payments, and (3) has a higher priority right to the assets of the entity.⁶² Other forms of financial instruments are also possible depending on the terms—options, derivatives, futures contracts, etc.⁶³ All have

⁵⁸ See I.R.C. §§ 1471–1474.

⁵⁹ See *id.*

⁶⁰ See generally I.R.S. Notice 94-47, 1994-1 C.B. 357.

⁶¹ See *id.*

⁶² See *id.*

⁶³ See generally Karnika Agarrwal & Aashika Jain, *Futures and Options Trading – A Beginner’s Guide*, FORBES ADVISOR (Aug. 27, 2021, 3:30 PM), <http://www.forbes.com/advisor/in/investing/how-does-trading-in-futures-and-options-work/> [<http://perma.cc/7555-MBW3>].

distinguishing characteristics and are often subject to special treatment under the Code.

An investment DAO's tokens typically represent voting and economic rights with respect to the DAO's operations and assets. On its face, it seems quite clear that a typical DAO token has the characteristics of equity described above. Thus, if a DAO is treated as an entity for tax purposes, the typical tokens it issues will likely be treated as equity in that entity.

This carries significant consequences for the token-owner's tax position. If a DAO is treated as a partnership for tax purposes, the token/equity holder would be required to include their share of the DAO's income on their own tax return each tax period they hold the tokens. If the DAO does not send the token-holder a Schedule K-1 (e.g., if the DAO is not required to file a U.S. tax return or simply does not file one), then the token-holder is left to determine how to report their share of the DAO's income. While the blockchain ledger is intended to contain all information relating to the DAO's activities and investments, translating that information into information that can be reported on a tax return may prove quite challenging.

III. NFTS: PROPERTY OR EVIDENCE OF PROPERTY

NFTs have taken popular culture by storm. The cartoon images of monkeys issued by Bored Ape Yacht Club were highly prized symbols of the Web3 economy to some and worthless to others.⁶⁴ Celebrities from former President Trump to Justin Bieber rushed to issue or purchase their own NFTs.⁶⁵ But while NFTs as status symbols and talismans of fandom garnered the most attention, NFTs have more versatile potential, and that versatility makes the tax classification question more challenging—and interesting—to tax advisors.⁶⁶

⁶⁴ James Harrison, *Cartoon Apes Worth Millions Are Flooding the Internet and Have Left a Lot of Us Confused*, B&T (Nov. 16, 2021), <http://www.bandt.com.au/cartoon-apes-worth-millions-are-flooding-the-internet-and-have-left-a-lot-of-us-confused/> [<http://perma.cc/NLB9-KM5L>].

⁶⁵ See Andrew Hayward, *Justin Bieber Paid \$1.3 Million for a Bored Ape NFT. It's Now Worth \$69K*, YAHOO! NEWS (Nov. 16, 2022), <http://news.yahoo.com/justin-bieber-paid-1-3-195705336.html> [<http://perma.cc/L9UG-9QE6>]; Ken Bensinger, *Selling Trump Isn't What It Used to Be*, N.Y. TIMES (Feb. 4, 2023), <http://www.nytimes.com/2023/02/04/us/politics/trump-cards-nfts.html> [<http://perma.cc/99BR-AK24>].

⁶⁶ See generally Billy Abbott, Luc Moritz & William K. Pao, *The Taxonomy of NFTs*, O'MELVENY & MYERS LLP (Aug. 31, 2022), <http://www.omm.com/resources/alerts-and-publications/alerts/nfts-and-taxonomy/> [<http://perma.cc/GV5Q-HX3X>].

A. NFTs as Baseball Cards

The NFTs that seem to attract the most public attention are those issued for and acquired by collectors (“Collection NFTs”).⁶⁷ A Collection NFT is essentially a newly created piece of property that has intrinsic value (to some); buying, selling, and collecting the NFT is the point.⁶⁸ Although it is possible for a creator to attach some intellectual property rights to that NFT, in many cases no such rights are represented by Collection NFTs.

For example, the Associated Press (“AP”) kindled some debate when it issued NFTs associated with its historic photo library.⁶⁹ The AP created a marketplace for the trading of digital assets attached to some of its most famous photographs.⁷⁰ The NFTs did not include any copyright to the photographs themselves; instead, the NFTs conveyed “a rich set of original metadata offering collectors awareness of the time, date, location, equipment and technical settings used for the shot.”⁷¹ Thus, purchasing the NFT gave the purchaser a collectible asset to add to his or her blockchain wallet, but little else. The NFT holder did not gain the right to commercialize the underlying photograph or any other intellectual property right.

A Collection NFT is in many ways similar to a baseball card. When a collector purchases a tangible baseball card, the collector owns just that piece of paper with the photograph printed on it—the piece of paper’s value is tied to how much another collector may want to add that baseball card to their collection. But the collector did not acquire any intellectual property associated with that baseball card—the collector does not have a license to print additional copies to sell to the public. The same idea applies to the AP’s NFTs. The AP hoped that an NFT connected to one of its photographs would prove collectible, but it did not permit the owner to make or sell copies of its photos.

⁶⁷ James Kelly, *NFT Collections Explained – the Ultimate Guide for Beginners*, NFT GATORS (July 3, 2022), <http://www.nftgators.com/nft-collections/> [<http://perma.cc/8H8F-RFL3>].

⁶⁸ Dilip Kumar Patairya, *How Do You Assess the Value of an NFT?*, COINTELEGRAPH (Mar. 12, 2022), <http://cointelegraph.com/news/how-do-you-assess-the-value-of-an-nft> [<http://perma.cc/2XTM-CLM4>].

⁶⁹ David Guido Pietroni, *AP’s NFT Sale of Migrants at Sea Image Faces Backlash*, THE ART INSIDER (Feb. 25, 2022), <http://www.art-insider.com/aps-nft-sale-of-migrants-at-sea-image-faces-backlash/3554> [<http://perma.cc/4L3H-8BU5>].

⁷⁰ *See id.*

⁷¹ *AP to Launch NFT Photography Marketplace Built by Xooa*, ASSOCIATED PRESS (Jan. 10, 2022), <http://www.ap.org/press-releases/2022/ap-to-launch-nft-marketplace-built-by-xooa> [<http://perma.cc/QT2M-TDND>].

So, if Collection NFTs are similar to baseball cards (or postage stamps or other collectibles), then how would a Collection NFT be classified under U.S. tax law? Under the baseball card analogy, the Collection NFT will be considered to be property subject to tax like any other property—a purchaser will have a basis in the Collection NFT equal to the amount paid for it and will recognize capital gain or loss depending on its eventual disposition.⁷²

If property is treated as a “collectible” for tax purposes, then any long-term capital gain would be taxed at a less favorable rate than most other capital assets; currently, the maximum federal income tax rate applicable to collectibles is twenty-eight percent rather than a maximum rate of twenty percent for most long-term capital gains for individuals.⁷³ The Code defines “collectibles” through a list of items: works of art, rugs or antiques, metals or gems, stamps or coins, alcoholic beverages, or any other tangible personal property specified in regulations or other Treasury guidance.⁷⁴ And now another classification question: Despite being an asset that is a quintessential collectible in American culture, neither the statutory rule nor subsequent guidance specifically states that a baseball card is a “collectible.”⁷⁵ Nevertheless, it seems unlikely the IRS would *not* view baseball cards as collectibles (perhaps by including them as “works of art”?). By extension, a Collection NFT could be viewed as a digital work of art and treated as a “collectible” for tax purposes. But this is no sure thing. Unlike a baseball card, a Collection NFT is an *intangible* asset. The statutory definition of “collectible” refers to “other *tangible* . . . property,” suggesting that only tangible assets may be characterized as “collectibles.”⁷⁶ If so, Collection NFTs would not constitute “collectibles” and individual collectors’ gains from their sales might be eligible for taxation at the favorable twenty percent rate.⁷⁷

⁷² See I.R.C. §§ 1011(a), 1012(a).

⁷³ I.R.C. § 1(h)(5)(A).

⁷⁴ I.R.C. § 408(m). Proposed regulations would also add musical instruments and historical objects (documents, clothes, etc.) to the statutory list of collectibles. Prop. Treas. Reg. § 1.408-10, 49 Fed. Reg. 2794, 2801 (Jan. 23, 1984).

⁷⁵ Michael A. Curatola, *Tax Considerations for the Sports Card Market*, FALCON RAPPAPORT & BERKMAN LLP (Jan. 4, 2022), <http://frblaw.com/tax-considerations-for-the-sports-card-market/> [<http://perma.cc/B57X-SCRL>].

⁷⁶ *Id.* (emphasis added) (quoting I.R.C. §408(m)(2)).

⁷⁷ *Id.*

B. When an NFT Is Not an Asset

Digital collections are not the only use for NFTs. Certain NFTs are issued to verify ownership and document transfers of real-world assets.⁷⁸ For example, “physical NFTs” have been used to transfer ownership of physical pieces of art. In 2021, the artist Beeple sold a physical “kinetic video sculpture” via the transfer of an NFT; the auction at Christie’s brought a price of \$28.9M for the NFT, which also provided the buyer with ownership of the sculpture.⁷⁹ But physical NFTs are not limited to transfers of art. The Web3 startup company Propy has created a marketplace for (real) real estate to be bought and sold via NFT.⁸⁰

The value of an NFT comes from the asset the NFT represents. The NFT is simply a method of proving ownership and executing a “smart contract” to transfer property, in the same way that a piece of paper can contain a contract that transfers property from one person to another. A deed is not a house and vice-versa. The tax classification of an NFT real-estate transaction should not look at the Code provisions applicable to a sale of paper; it should look to those applicable to the sale of real estate. If the sale of an NFT linked to physical real estate in the United States were to be analyzed as a sale of a digital asset rather than as the real estate asset itself, a foreign non-resident selling that NFT would escape the U.S. income and withholding taxes that apply to the sale of U.S. real estate—any gain would typically be considered non-taxable U.S. source capital gain.⁸¹ A failure to classify a physical NFT according to the asset it represents would mean that tokenizing assets on the blockchain would convey enormous potential tax benefits—a consequence that the Treasury would be unlikely to permit or ignore.

⁷⁸ See Scott Sugino et al., *NFT: A Token of Corporate Affection*, O’MELVENY & MYERS LLP (Jan. 23, 2023), <http://www.omm.com/resources/alerts-and-publications/alerts/nft-a-token-of-corporate-affection/> [<http://perma.cc/UFG8-36HZ>].

⁷⁹ See Jamie Redman, *Beeple’s Latest NFT ‘Human One’ Sells for \$29M, Artist Plans to ‘Enhance the Displayed Artwork’ During His Lifetime*, BITCOIN.COM (Dec. 9, 2021), <http://news.bitcoin.com/beeples-latest-nft-human-one-sells-for-29m-artist-plans-to-enhance-the-displayed-artwork-during-his-lifetime/> [<http://perma.cc/8579-WYLN>]; Jeff Benson, *NFT Artist Beeple Sells Latest Work for \$29 Million at Auction*, DECRYPT (Nov. 9, 2021), <http://decrypt.co/85704/nft-artist-beeple-sells-latest-work-29-million-auction> [<http://perma.cc/AN7R-RJKS>].

⁸⁰ Peter Grant, *An Entire Real Estate Deal Takes Place Online, Using Cryptocurrency Technology*, WALL ST. J. (Sept. 26, 2017, 5:49 PM), <http://www.wsj.com/articles/an-entire-real-estate-deal-takes-place-online-using-cryptocurrency-technology-1506462545> [<http://perma.cc/3RU5-M427>].

⁸¹ See I.R.C. §§ 897, 1445.

C. Notice 2023-27

In March 2023, the IRS took its first stab at addressing these very questions when it released Notice 2023-27.⁸² The Notice first defines an NFT as “a unique digital identifier that is recorded using distributed ledger technology and may be used to certify authenticity and ownership of an associated right or asset.”⁸³ It further notes that ownership of an NFT may convey a right with respect to a “digital file” that “typically is separate from the NFT,” or it may convey a right to an asset that is not a digital file, including a ticketed event or a physical item.⁸⁴ While the former seems to address Collection NFTs, the statement that the digital file “typically is separate from the NFT” seems somewhat incomplete.⁸⁵ With respect to NFTs such as the ones AP issued, for example, the NFT conveys no rights with respect to a separate digital file—the NFT is a digital asset in itself.⁸⁶ The initial definitions for that reason appear not to be fully comprehensive.

The Notice then goes on to approach NFTs in a manner similar to the approach discussed *supra* with respect to physical NFTs, but on a very limited basis. Pending future guidance, the IRS will use a “look-through analysis” whereby an NFT is tested for collectible status by considering whether the underlying asset is a collectible.⁸⁷ That analysis could (and perhaps should) apply by analogy to an NFT representing a right to a piece of real property or other physical asset; however, the Notice does not go beyond assessing whether or not the asset is a collectible.

Finally, the Notice raises, but does not answer, the question of whether what it has defined as a digital file constitutes a “work of art” under Code Section 408(m).⁸⁸ Nevertheless, it does state that the right to use or develop a “plot of land” in a virtual environment does not constitute a collectible, without any real analysis; presumably, this means that it is not a work of art, but why that should be assumed while the question remains open for NFTs associated with other digital files remains unclear.⁸⁹

While perhaps not as comprehensive as practitioners might prefer, the Notice does evidence that the IRS has begun looking at

⁸² I.R.S. Notice 2023-27 (Mar. 21, 2023).

⁸³ *Id.* at 1.

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ See *supra* text accompanying notes 67–77.

⁸⁷ I.R.S. Notice 2023-27 (Mar. 21, 2023).

⁸⁸ *Id.*

⁸⁹ *Id.*

classifying Collection NFTs by looking to the underlying asset. But until the IRS issues more detailed guidance, practitioners seeking to classify NFTs under other parts of tax law—beyond the question of their classification as a collectible—will be left to compare the treatment of NFTs to the treatment of other assets, albeit armed with the clues provided by the Notice.

IV. SECURITIES AND COMMODITIES: SPECIAL CLASSIFICATION ISSUES

The question of whether transfers of cryptocurrency or other digital assets are subject to the jurisdiction of the Securities and Exchange Commission or the Commodity Futures Trading Commission is the subject of intense debate.⁹⁰ This question turns, in no small part, on whether those digital assets constitute “securities,” “commodities,” or neither. This question has arisen under U.S. tax law as well, though the definitions of securities and commodities are different there and serve different purposes.⁹¹ Even within the Code, there are different definitions of the same term, making the classification of digital assets by tax advisors all the more challenging.

Here are two contexts for illustrative purposes, but securities and commodities classification would impact many other taxpayers as well:

Trade or Business in the United States. Non-U.S. investors holding interests in partnerships that are engaged in a trade or business in the U.S. are required to file income tax returns and pay income tax on any income that is “effectively connected” with that trade or business.⁹² Whether an activity constitutes a trade or a business is a complex question, but of key importance to foreign investors is the exception for trading in stock, securities, and commodities, among other assets.⁹³ Non-U.S. investors prefer to avoid filing a U.S. income tax return, so they hope that by investing in a partnership that trades digital assets, they might be

⁹⁰ See, e.g., C. Brophy Christensen, et al., *Crypto Roundup: SEC and CFTC Chairs, Commissioners, and Enforcement Directors Issue Stern Public Statements on Cryptographic and Virtual Assets*, O'MELVENY & MYERS LLP (Jan. 18, 2018), <http://www.omm.com/resources/alerts-and-publications/alerts/crypto-roundup-sec-and-cftc-chairs-commissioned-enforcement-directors-issue-stern-public-statements/> [http://perma.cc/ZT4B-UF9A].

⁹¹ 28 U.S.C. § 864(b)(2)(A)–(B).

⁹² See I.R.C. §§ 865, 876; *Effectively Connected Income (ECI)*, INTERNAL REVENUE SERV. (July 27, 2022), <http://www.irs.gov/individuals/international-taxpayers/effectively-connected-income-eci> [http://perma.cc/23WB-MNA6].

⁹³ See I.R.C. § 864(b)(2).

able to rely on this safe harbor. But that will only be possible if digital assets are considered securities or commodities—a question that remains unanswered.⁹⁴

Worthless Security Losses. The Code provides a deduction to taxpayers who hold a security as a capital asset if that security becomes worthless during the taxable year.⁹⁵ If an investor holds cryptocurrency that becomes worthless, the investor might want to take advantage of this deduction. But the Code specifically defines “security” in this context as the following:

- (A) a share of stock in a corporation;
- (B) a right to subscribe for, or to receive, a share of stock in a corporation; or
- (C) a bond, debenture, note, or certificate, or other evidence of indebtedness, issued by a corporation or by a government or political subdivision thereof, with interest coupons or in registered form.⁹⁶

So, in recent guidance, the IRS was able to swiftly conclude that cryptocurrency was *not* a security for this purpose.⁹⁷ Nevertheless, that answer likely would be different if asked about an investment fund’s worthless DAO token, which is classified as equity for tax purposes.

CONCLUSION

The classification issues described in this Article merely scratch the surface of those that will arise when tax advisors seek to apply existing tax law to the wide variety of digital assets out there—not to mention those that have yet to be invented. But classification has always been a mainstay of tax practice. The addition of digital assets to the economy will impact the way tax law is practiced to be sure, but it will also only be the latest in a long history of challenges faced by advisors confronting novel situations.

⁹⁴ Some practitioners are comfortable taking the position that at least Bitcoin is a commodity eligible for this safe harbor. Under IRS guidance, the term “commodities” includes “all products that are traded in and listed on commodity exchanges located in the United States,” and includes futures contracts for such products as well. Rev. Rul. 73-158, 1973-1 C.B. 337. Bitcoin futures being traded on several commodity markets would suggest that at least trading in Bitcoin would satisfy this safe harbor. Jim Calvin, *Taxation of Cryptocurrencies*, 190 TAX MGMT. PORT. (BNA) § IV.F.

⁹⁵ I.R.C. § 165(g).

⁹⁶ 26 U.S.C. § 165(g)(2).

⁹⁷ I.R.S. Tech. Adv. Mem. 202302011 (Jan. 10, 2023). The IRS does, however, provide that an investor holding worthless cryptocurrency is not entirely precluded from a deduction if it is able to demonstrate it is entitled to a loss under I.R.C. § 165(a). *See id.*

Fintech Regulation in the Catawba Digital Economic Zone

Tom W. Bell*

The Catawba Digital Economic Zone (“CDEZ”) achieved a number of firsts when it launched in late 2022: the world’s first entirely virtual special jurisdiction devoted to financial services using technologies like blockchains, cryptocurrencies, digital assets, and artificial intelligence (fintech); the first time that a Native American tribe has claimed exclusive jurisdiction over a broad field of commerce; and the first special jurisdiction in the United States to offer its own civil laws and legal system. If all proceeds as planned, the Zone will soon also host the first Native American public bank in the United States. These firsts follow naturally from the CDEZ’s pioneering mission: to bring the rule of law to the fintech frontier. This paper, written by one of a team of coders hired to help build the zone’s legal framework, reviews the project’s recent progress. The CDEZ launched with a comprehensive Civil Ordinance and quickly added to it: an Administrative Procedure Regulation to regulate the issuance of new rules; a Digital Assets Regulation legally defining Blockchain, Non-Fungible Token, and other fintech entities; and a Resolution making the Uniform Law Institute’s newly published Uniform Commercial Code Article 12 for digital assets locally binding. The Zone Authority has begun rulemaking proceedings for regulations addressing distributed autonomous organizations, stablecoins, and banking and commercial services. These efforts show a strong start for the CDEZ, a Native American special jurisdiction that aims to become the first choice for fintech.

* Professor, Chapman University, Fowler School of Law. The author thanks Joseph McKinney and his team at the CDEZ for research assistance; Haley Ritter, Jared Shahar, and the *Chapman Law Review* for inviting, editing, and publishing this paper; and The Catawba Nation for making history worth writing about. Opinions expressed herein represent those of the author only, who bears sole responsibility for their submission for publication, and do not represent the opinions of any employer, client, or associate. Disclosures: The author helped create the CDEZ legal code under contract with the Catawba Indian Nation via intermediaries eTribe LLC and Archer Sage Ventures, thereby earning a small unvested interest in the project, and the Zone incorporates version 1.2 of Ulex, the open source legal system he created. Copyright 2023 Tom W. Bell.

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INTRODUCTION

When it launched in late 2022, the Catawba Digital Economic Zone (“CDEZ”) achieved a number of notable firsts.¹ Other special jurisdictions predate it in serving the financial technology (a.k.a. fintech) sector.² The CDEZ is first to operate entirely online, though. Physically, it exists solely on computer servers located within the territory of the Catawba Indian Nation, which has reservation lands in North and South Carolina.³ Other special jurisdictions with a fintech focus include offices, parking, and amenities of the sort demanded by flesh-and-blood entrepreneurs.⁴ The CDEZ, because it hosts only legal persons, has no need for the real estate required by real people.

The CDEZ also represents a first in terms of an assertion of sovereignty. Other Native American tribes have of course set up

¹ See Joseph McKinney, *Catawba Digital Economic Zone Now Incorporating Companies*, EIN PRESSWIRE (Nov. 16, 2022, 1:17 PM), http://world.einnews.com/pr_news/601614281/catawba-digital-economic-zone-now-incorporating-companies [<http://perma.cc/M4R3-ADAX>].

² For an exhaustive study of “fintech” culminating in the definition, “[f]intech is a new financial industry that applies technology to improve financial activities,” see Patrick Schueffel, *Taming the Beast: A Scientific Definition of Fintech*, 4 J. INNOVATION MGMT. 32, 45 (2016), http://journalsojs3.fe.up.pt/index.php/jim/article/view/2183-0606_004.004_0004/262 [<http://perma.cc/V7Y6-4G97>].

³ See *About*, CATAWBA DIGIT. ECON. ZONE, <http://catawbadigital.zone/about/> [<http://perma.cc/8L5N-B6TL>] (last visited Mar. 3, 2023).

⁴ See Tom W. Bell, *The Catawba Digital Economic Zone: A Native American SEZ*, 3 J. SPECIAL JURISDICTIONS 25, 26–27 (2022) (cataloging zones specializing in fintech).

casinos, firework stands, and tobacco stores on their reservations.⁵ But no tribe in living memory has claimed exclusive jurisdiction over so broad a range of commerce as the Catawba have with their CDEZ. Setting aside the states themselves, never before has the United States hosted a special jurisdiction exercising such wide authority to regulate all commercial exchange within its borders.⁶

The CDEZ has even outpaced the states in some respects, confidently proclaiming itself “the first jurisdiction within the United States created for Fintech and Digital Asset growth.”⁷ Other jurisdictions in the United States were created long ago to deal with a physical people interacting in a physical world, giving rise to problems as various as assault and battery, zoning violations, and the inadequate labeling of packaged foods. Though a few states have tried to attract fintech and digital commerce with special legislation, they remain distracted by other concerns and slowed down by legacy government processes. Being built from scratch and given a narrow focus has allowed the CDEZ to speed ahead of other jurisdictions in the United States.

Although its banking regulations remain in development, informed third parties report that the Zone will soon host the first Tribal Public Bank in the United States.⁸ As such, it will join just two other government-owned banks, the Federal Reserve and the Public Bank of North Dakota.⁹ In addition to enhancing Tribe members’ access to capital and economic opportunities, the Nation’s public bank will play a regulatory role, issuing banking charters to qualified financial institutions that want to do business in the CDEZ and overseeing their operation.¹⁰

These pioneering achievements of the CDEZ reflect its bold and innovative overarching goal: to bring the rule of law to financial businesses operating on the virtual frontier. It thus disavows any

⁵ See, e.g., *Foxwoods Resort Casino*, FOXWOODS RESORT CASINO, <http://www.foxwoods.com/> [<http://perma.cc/LH6E-QBR8>] (last visited Mar. 13, 2023) (casinos); Alyssa Kelly, *Firework Sales a Booming Reservation Business*, CHAR-KOOSTA NEWS (July 12, 2018), http://www.charkoosta.com/news/firework-sales-a-booming-reservation-business/article_59a060a0-8527-11e8-a6bc-6f2c8e6a516d.html [<http://perma.cc/ZY8C-7S5F>] (firework stands); *Ohosa Tobacco Shop*, RIVER ROCK CASINO, <http://www.riverrockcasino.com/visiting/ohosa-tobacco-shop/> [<http://perma.cc/4WX9-UMYK>] (last visited Mar. 13, 2023) (tobacco).

⁶ See Bell, *supra* note 4, at 44.

⁷ *Catawba Digital Economic Zone*, CATAWBA DIGIT. ECON. ZONE, <http://catawbadigital.zone/> [<http://perma.cc/N853-UW5J>] (last visited Dec. 7, 2022).

⁸ W. Gregory Guedel & Philip H. Viles Jr., *Digital Economic Zones: A Program for Comprehensive Tribal Economic Sovereignty*, 57 TULSA L. REV. 591, 603 (2022).

⁹ *Id.*

¹⁰ *Id.* at 604.

intention to let greed or recklessness run rampant; to the contrary, those who register to do business in the Zone will have to go through know-your-customer and anti-money laundering (“KYC” and “AML,” respectively) checks in compliance with international and federal law and also satisfy the CDEZ’s own comprehensive regulations.¹¹ But the CDEZ does not want to tie up the industry in red tape, either. It instead promises “[a] commercial code created by builders and inventors, not special interests,” and explains that “CDEZ regulations are created and implemented with a focus on enabling innovation, not forbidding it.”¹² It has tasked itself with keeping up with the rapid pace of technological development, too, requiring its regulators “to meet every two weeks to quickly adapt regulation as market needs dictate.”¹³

How does the CDEZ plan to fulfill its goal of governing fintech rigorously, efficiently, and responsively? Through rules, published and proposed, that adapt existing standards to the Zone’s special needs. In this way, it aims to offer prospective customers “[w]orld-class laws optimized for digital service industries, finance, and digital assets that enhance your business success.”¹⁴ Those CDEZ regulations provide the subject of this paper.

This Paper opens in Part I with a background about how governance in the Zone works. It then examines two kinds of CDEZ regulations: Those already adopted, covered in Part II; and those currently pending in the CDEZ’s notice-and-comment rulemaking procedures, covered in Part III. This Paper concludes that the CDEZ, while still a jurisdiction-in-the-making, has made a solid start toward regulating fintech carefully, comprehensively, and effectively.

I. GOVERNANCE IN THE CDEZ

The Catawba Nation governs itself through the personal participation of the Tribe’s members in a General Council.¹⁵ This qualifies the Catawba Nation as a *direct* or *pure democracy*, wherein the electorate sets public policies by popular vote, without

¹¹ See *Become an eResident*, CATAWBA DIGIT. ECON. ZONE, <http://catawbadigital.zone/become-an-eresident/> [<http://perma.cc/VHX7-E4T2>] (last visited Dec. 7, 2022).

¹² *The Catawba Digital Economic Zone*, *supra* note 7..

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *General Council*, CATAWBA NATION, <http://www.catawba.com/general-council> [<http://perma.cc/FP4M-8BN3>] (last visited Dec. 6, 2022).

using elected representatives as proxies.¹⁶ Through the General Council, the Nation passes ordinances, creates administrative bodies, and otherwise exercises its sovereign power.¹⁷ It has created two such administrative bodies: an Executive Committee, which manages the Tribe’s government and territory on a day-to-day basis,¹⁸ and the Catawba Corporations, which manage the Tribe’s economic interests.¹⁹ Together, through means described next, these two bodies effectively control the Zone Authority, which in turn controls the CDEZ.

The General Council created the CDEZ on February 19, 2022, by passing the Zone Resolution²⁰ and Zone Civil Ordinance.²¹ These have the combined effect of establishing a Zone Authority—an unincorporated governmental instrumentality of the Catawba Indian Nation that shares the Tribe’s privileges and immunities.²² The Zone Authority passes regulations for and otherwise governs the CDEZ.²³ As the Zone Civil Ordinance specifies, “[r]egulations properly promulgated by the Zone Authority shall have the force of law” in the CDEZ with respect to those who have availed themselves of its jurisdiction.²⁴

The Zone Authority consists of five members. The Executive Committee appoints two, the Catawba Corporations appoint two, and a private Nation-majority-owned management company, the Green Earth Zone Services Corporation (“Zone Corporation”), appoints one.²⁵ Because the Zone Authority acts by a 4/5 vote of its

¹⁶ Theo Schiller, *Direct Democracy*, BRITANNICA, <http://www.britannica.com/topic/direct-democracy> [<http://perma.cc/D3DX-YQFR>] (last updated Oct. 7, 2022).

¹⁷ *General Council*, *supra* note 15.

¹⁸ See *The Catawba Nation Executive Committee*, CATAWBA NATION, <http://www.catawba.com/executive-committee> [<http://perma.cc/NNT7-LRXQ>] (last visited Dec. 6, 2022).

¹⁹ See CATAWBA CORPS., <http://catawbacorps.com/> [<http://perma.cc/PKY2-49YT>] (last visited Dec. 6, 2022).

²⁰ See GEN. COUNCIL OF THE CATAWBA INDIAN NATION, RES. NO. 20220219, RESOLUTION OF THE GENERAL COUNCIL OF THE CATAWBA INDIAN NATION ESTABLISHING THE GREEN EARTH ZONE, APPROVING THE GREEN EARTH ZONE CIVIL ORDINANCE, AND DESIGNATING INITIAL PROPERTY FOR THE ZONE, (2022) [hereinafter ZONE RESOLUTION], <http://zoneauthority.io/wp-content/uploads/2022/05/Signed-Resolution-establishing-GEZ-with-Ordinance.pdf> [<http://perma.cc/HC3A-ZH2T>].

²¹ See GEN. COUNCIL OF THE CATAWBA INDIAN NATION, GREEN EARTH ZONE CIVIL CODE ORDINANCE (2022) [hereinafter ZONE CIVIL ORDINANCE], <http://zoneauthority.io/wp-content/uploads/2022/06/GEZ-ORDINANCE-clean.pdf> [<http://perma.cc/AT2S-RV9L>].

²² See ZONE RESOLUTION, *supra* note 20, at ll. 38–41, 65–70; ZONE CIVIL ORDINANCE, *supra* note 21, tit. II, ch. 1, §§ 1–3.

²³ See ZONE CIVIL ORDINANCE, *supra* note 21, tit. II, ch. 1, §§ 2–3.

²⁴ *Id.* tit. II, ch. 1, § 2.C.

²⁵ *Id.* tit. II, ch. 1, § 2.B.

members, the Tribe's two administrative bodies effectively control of the CDEZ.²⁶ The Tribe, through its control of the Zone Corporation, also controls the fifth vote on the Zone Authority.²⁷

The Corporate Nation starts out as the sole owner of the Zone Corporation.²⁸ A majority of the Board of Directors of the Zone Corporation must be appointed by the Corporate Nation or, if Corporate Nation ceases to own a majority of the Zone Corporation's shares, some other entity owned by the Nation must.²⁹ The Zone Corporation must therefore "at all times be majority owned by the Nation or a wholly owned entity of the Nation."³⁰ These measures ensure that the Catawba Indian Nation at all times retains control of the Zone Authority, Zone Corporation, and CDEZ.³¹

II. ENACTED CDEZ RULES

The CDEZ has, in its short history, already seen the issuance of several new rules. This section focuses on the three Zone Authority actions that most directly affect fintech, reviewing them in order of their dates of adoption. The list includes:

- The Administrative Procedure Regulation;³²
- The Digital Assets Regulation;³³ and the
- Resolution Adopting U.C.C. Article 12 for Digital Assets.³⁴

In addition to those three rulemakings, the Zone Authority took two other official actions. Via the first, it appointed Mr. Leon

²⁶ *Id.* tit. II, ch. 2, § 3(1).

²⁷ *Id.*

²⁸ *Id.* tit. II, ch. 2, § 3.A.

²⁹ *Id.* tit. II, ch. 2, § 7.A.

³⁰ *Id.* tit. II, ch. 2, § 3.A.

³¹ See *Catawba Digital Economic Zone Appoints Zone Authority Commission*, CATAWBA DIGIT. ECON. ZONE (May 4, 2022), <http://catawbadigital.zone/catawba-digital-economic-zone-appoints-zone-authority-commission-2/> [<http://perma.cc/4V7J-2D8S>].

³² Green Earth Zone Administrative Procedure Regulation, Reg. No. 001-22 (May 18, 2022) [hereinafter *Administrative Procedure Regulation*], <http://zoneauthority.io/wp-content/uploads/2022/06/GEZ-APR-clean-1.pdf> [<http://perma.cc/6QY4-YBJV>] (adopted by the Zone Authority Commission).

³³ Digital Assets Regulation, Reg. No. 002-22 (July 6, 2022), <http://zoneauthority.io/wp-content/uploads/2022/07/002-22.-Digital-Assets-Regulation.-.pdf> [<http://perma.cc/C2MX-ZCBJ>].

³⁴ ZONE AUTH. COMM'N, CATAWBA DIGIT. ECON. ZONE, RES. NO. 001, FOR THE ADOPTION OF THE UCC AMENDMENTS AND ARTICLE 12 ADDRESSING DIGITAL ASSETS (2022) [hereinafter *RESOLUTION ADOPTING U.C.C. ARTICLE 12*], <http://zoneauthority.io/rs001-for-the-adoption-of-the-ucc-amendments-and-article-12-addressing-digital-assets/> [<http://perma.cc/YEX2-ZHS4>].

Shaffer as the Interim Zone Secretary.³⁵ The second concerned CDEZ compliance with Tribal employment preferences.³⁶

Because the appointment and compliance order should have only a tangential impact on fintech regulation in the CDEZ, they receive no further scrutiny here, except for this observation: the latter resolution provides that firms operating in the zone will enjoy reduced administrative charges if they hire Catawba citizens or other Native Americans.³⁷ In this way, fintech firms might congratulate themselves on saving money while simultaneously rectifying historical injustices.

A. Administrative Procedure Regulation

The Zone Authority passed its Administrative Procedure Regulation on May 18, 2022, with the aim of ensuring that the CDEZ rulemaking processes operate transparently and predictably.³⁸ The regulation governs the process by which the Zone Authority develops and issues rules applicable to the CDEZ. It includes requirements for the Zone Authority to publish notices of proposed rulemakings, to provide opportunities for the public to comment on proposed regulations, and to publish final versions of CDEZ regulations.

The Administrative Procedure Regulation evidently took as its model the Revised Model State Administrative Procedure Act published by the National Conference of Commissioners on Uniform State Laws (a.k.a. Uniform Law Commission).³⁹ The two sets of rules mirror each other in almost all particulars. The details of the CDEZ's Administrative Procedure Regulation matter less for present purposes than its meta-effect on later regulations. The Zone Authority effectively promises, with enactment of the Administrative Procedure Regulation, to issue future rules, including those relating to fintech, in a predictable and transparent manner.

³⁵ ZONE AUTH. COMM'N, CATAWBA DIGIT. ECON. ZONE, RES. NO. 003, FOR THE APPOINTMENT OF THE INTERIM ZONE SECRETARY (2022), <http://zoneauthority.io/rs003-for-the-appointment-of-the-interim-zone-secretary/> [<http://perma.cc/56ER-6HBU>].

³⁶ See ZONE AUTH. COMM'N, CATAWBA DIGIT. ECON. ZONE, RES. NO. 002, FOR COMPLIANCE OF ENTITIES UNDER THE CATAWBA INDIAN PREFERENTIAL HIRING ORDINANCE (2022), <http://zoneauthority.io/rs002-for-compliance-of-entities-under-the-catawba-indian-preferential-hiring-ordinance/> [<http://perma.cc/RR44-JBSZ>].

³⁷ See *id.* resolve 3.

³⁸ See Administrative Procedure Regulation, *supra* note 32.

³⁹ See REVISED MODEL STATE ADMIN. PROC. ACT (UNIF. L. COMM'N 2010), <http://www.uniformlaws.org/committees/community-home?CommunityKey=f184fb0c-5e31-4c6d-8228-7f2b0112fa42> [<http://perma.cc/8849-RTVX>].

Why did the Zone Authority thereby bind itself? No legislative history accompanied the issuance of the CDEZ Administrative Procedure Regulation, nor did the regulation include any “whereas” clauses. It seems safe to say, however, that the Zone Authority wanted to reassure investors, resident businesses, Tribe members, and third parties that it would not govern the CDEZ arbitrarily or capriciously. With the Administrative Procedure Regulation, the Zone Authority effectively pledges to bring the rule of law to the fintech frontier.

The Administrative Procedure Regulation specifies that it does not apply to proceedings that had already begun on its effective date.⁴⁰ It also clarifies that its requirements for notices of and public participation in proceedings, and for a thirty-day delay in the effective date of any newly issued rule, do not apply to rulemakings that have no effect on any person domiciled in the Zone.⁴¹ A rulemaking cannot have any effect on a person domiciled in the Zone if no such person exists, and the CDEZ registered its first business only on September 29, 2022.⁴² As a consequence, the discussion immediately below of the Digital Assets Regulation and the Resolution Adopting U.C.C. Article 12 for Digital Assets shows them issuing directly from the Zone Authority without notice or public participation and having immediate effect. Only more recently has the Administrative Procedure Regulation begun having fuller effect, as demonstrated by the currently pending regulations discussed later in the paper.

B. Digital Assets Regulation

With its second regulation, the Digital Assets Regulation it adopted on July 6, 2022, the Zone Authority focused on fintech.⁴³ The Zone Authority judged regulations elsewhere “not optimally suited for the advent of technically innovative forms of commerce”⁴⁴ and discriminatory on the principle that “businesses using innovative technology for benign purposes should be treated equally to other businesses in similar sectors using traditional means of commerce.”⁴⁵ The Digital Assets Regulation aims to

⁴⁰ Administrative Procedure Regulation, *supra* note 32, § 103(b).

⁴¹ *See id.* § 304(c) (notice requirements); *id.* § 306(f) (public participation); *see also id.* § 305(g) (allowing waiver of the requirement for preparation of a regulatory analysis for regulations adopted within one year of the adoption of the Administrative Procedure Regulation).

⁴² Letter from Joseph McKinney, CEO of CDEZ, to author (Dec. 14, 2022) (on file with author).

⁴³ *See* Digital Assets Regulation, *supra* note 33.

⁴⁴ *Id.* pmbl., para. 2.

⁴⁵ *Id.* pmbl., para. 3.

rectify the failings of legacy jurisdictions. The regulation’s preamble explains that it “aims to offer all engaged in peaceful trade a safe haven for legal digital commerce”⁴⁶ by providing “a framework for trade in intangible properties and services by clarifying their treatment under the Zone Civil Code.”⁴⁷

The Digital Assets Regulation largely limits itself to fine-tuning pre-existing laws in the CDEZ. This it can do because the Zone launched with a full suite of rules for regulating commerce, including a wide selection of *Restatements of the Common Law* and Uniform Commercial Codes.⁴⁸ It acquired these trusted and tested rule sets by incorporating version 1.2 of Ulex, an open-source legal system.⁴⁹

The Zone Authority subsequently repealed most of the Digital Assets Regulation in its Resolution Adopting U.C.C. Article 12 for Digital Assets, which addresses many of the same topics.⁵⁰ After that fine-tuning to harmonize CDEZ law with U.C.C. Article 12, the Digital Assets Regulation consists for the most part of definitions of legal terms crucial to fintech and clarifications of the classifications of different kinds of digital assets. The definitions, appearing in Section 102, run as follows:

1. “Blockchain” means a distributed ledger database that uses a consensus-based, decentralized, and mathematically verifiable process to reliably record an ordered sequence of transactions in Digital Assets.
2. “Digital Asset” means a machine-readable representation of rights to access, use, control, erase, or transfer information, and is either a Digital Consumer Asset, Digital Security, or Virtual Currency.
3. “Digital Consumer Asset” means a Digital Asset used, borrowed, or bought primarily for consumptive, personal or household purposes and that does not fall within the meaning of Digital Security or Virtual Currency under this section.
4. “Digital Security” means a Digital Asset that is a security, and that is not a Digital Consumer Asset or Virtual Currency.
5. “Virtual Currency” means a Digital Asset that is:
 - (A) Used as a medium of exchange, unit of account, or store of value;
 - (B) Not recognized as legal tender by the United States government; and

⁴⁶ *Id.* pmb., para. 1.

⁴⁷ *Id.* pmb., para. 4.

⁴⁸ See ZONE CIVIL ORDINANCE, *supra* note 21, tit. III–VIII.

⁴⁹ *Ulex Open Source Legal Operating System Version 1.2*, GITHUB (2022), <http://github.com/ulex-opensource/Ulex/tree/master/versions/1.2#ulex-open-source-legal-operating-system-version-12-2022> [<http://perma.cc/BGP5-6K2D>].

⁵⁰ See RESOLUTION ADOPTING U.C.C. ARTICLE 12, *supra* note 34, at 2 (repealing Digital Assets Regulation Sections 103(a)(3) and 104–105).

(C) Not a Digital Consumer Asset or Digital Security.

6. “Non-Fungible Token” or “NFT” means a type of indivisible Digital Asset verified by a Blockchain to have unique attributes and associated with an electronic signature.⁵¹

Most of those definitions draw on examples from Wyoming’s recent path-breaking fintech legislation. The Wyoming Digital Asset Statute, passed in 2019 and subsequently amended, defines digital assets and classifies them as a form of general intangible property subject to the same laws of acquisition, keeping, and transfer applicable to other forms of intangible property.⁵² It also makes digital assets subject to Uniform Commercial Code provisions allowing for the perfection of security interests in digital assets, recognizes smart contracts as means for controlling digital assets, and provides a framework for banks to establish custodial services for digital assets.⁵³

With its Digital Asset Statute, Wyoming became the first jurisdiction in the United States to offer comprehensive fintech legislation.⁵⁴ The CDEZ followed close behind. The self-proclaimed “Cowboy State”⁵⁵ must therefore now share the legal frontier with a small but daring Native American Tribe.

The CDEZ drew its definitions of “Digital Asset,” “Digital Consumer Asset,” “Digital Security,” and “Virtual Currency” from definitions in the Wyoming Digital Asset Statute.⁵⁶ For its definition of “blockchain,” the CDEZ evidently drew on the version that Wyoming used in its 2019 Utility Token Act⁵⁷ and 2020 Financial Technology Sandbox Act,⁵⁸ eschewing the slightly different definition in the state’s later Digital Asset Statute.⁵⁹ Wyoming apparently offers no example at all for the last of the terms defined

⁵¹ Digital Assets Regulation, *supra* note 33, § 102.

⁵² WYO. STAT. ANN. §§ 34-29-101–104 (2022).

⁵³ See WYO. STAT. ANN. § 34-29-101 *et seq.* (2022).

⁵⁴ *Digital Assets a General Intangible Under Wyoming’s UCC*, NCS CREDIT (Apr. 12, 2019), <http://www.ncscredit.com/education-center/blog/digital-assets-general-intangible-ucc/> [<http://perma.cc/BP7T-4N3B>].

⁵⁵ *Cowboy Culture*, Travel Wyoming, <http://travelwyoming.com/things-to-do/western-culture/cowboy-culture/> [<http://perma.cc/28EH-G2K3>] (last visited Mar. 14, 2023).

⁵⁶ See WYO. STAT. ANN. § 34-29-101(a)(i) (2022) (“digital asset”); *id.* § 34-29-101(a)(ii) (“digital consumer asset”); *id.* § 34-29-101(a)(iii) (“digital security”); *id.* § 34-29-101(a)(iv) (“virtual currency”).

⁵⁷ See *id.* § 34-29-106(g)(i) (defining “blockchain” as “a digital ledger or database which is chronological, consensus-based, decentralized and mathematically verified in nature”).

⁵⁸ See *id.* § 40-29-102(a)(i) (defining “blockchain” as “a digital ledger or database which is chronological, consensus-based, decentralized and mathematically verified in nature”).

⁵⁹ See *id.* § 34-29-106(g)(i) (defining “blockchain” as in Wyoming Statutes Annotated Section 40-29-102(a)(i)).

in the CDEZ’s Digital Asset Regulation, “Non-Fungible Token” (“NFT”).⁶⁰ For that, the CDEZ had to blaze its own trail.

The CDEZ represents one of the first U.S. jurisdictions to define “non-fungible token” by statute, regulation, or other executive action, and it appears to be the first to use the term in the context of comprehensive fintech regulations. Tennessee defined the term in a statute passed April 14, 2022,⁶¹ but put it to work only in requiring that the state treasurer give prior written approval to any attempt to pay funds due in the form of an NFT.⁶² Arizona also approved a definition on July 6, 2022, which became effective on January 1, 2023.⁶³ However, the state uses the term only in the narrow context of calculating gains and losses under its tax code.⁶⁴

In addition to legally defining the building blocks of the fintech universe, the CDEZ’s Digital Regulation Act clarifies which laws apply to each.⁶⁵ In this, the Digital Regulation Act followed up on a provision in the Zone Civil Ordinance, fulfilling a mandate that the Zone Authority had been born with. The Zone Civil Ordinance launched fintech regulation in the Zone by classifying each kind of “Digital Asset” as intangible personal property.⁶⁶ The same provision empowered and ordered the Zone Authority to “define, classify, and regulate Digital Assets and their treatment under” the CDEZ’s Commercial Code.⁶⁷ The Zone Authority began filling in those details with the Digital Regulation Act, which clarifies the law applicable to four of the terms defined above: Digital Assets; Digital Consumer Assets; Digital Securities; and Non-Fungible Tokens.⁶⁸ More specifically, the Digital Assets Regulation clarifies that:

⁶⁰ *Id.* § 34-29-106.

⁶¹ TENN. CODE ANN. § 9-3-602(4) (2022) (repealed effective June 30, 2025) (defining “non-fungible token” as “a non-fungible cryptographic asset on a blockchain that possesses unique identifiers or other metadata that distinguishes the asset from another token or asset in a manner that makes the asset irreplaceable and non-exchangeable for a similar token or asset”).

⁶² *See id.* § 9-3-601.

⁶³ *See* ARIZ. REV. STAT. ANN. § 43-1028(B)(3) (2023) (defining “non-fungible token” as “a non-fungible cryptographic asset on a blockchain that possesses unique identifiers or other metadata that distinguishes the asset from another token or asset in a manner that makes the asset irreplaceable and nonexchangeable for a similar token or asset”).

⁶⁴ *See id.* §§ 43-1022(29)–(30), 43-1028(A).

⁶⁵ *See* Digital Assets Regulation, *supra* note 33.

⁶⁶ ZONE CIVIL ORDINANCE, *supra* note 21, tit. VI, ch. 10.

⁶⁷ *Id.*

⁶⁸ *See* Digital Assets Regulation, *supra* note 33, at § 103(a)–(c).

- A Digital Consumer Asset is a general intangible under U.C.C. Article 9;⁶⁹
- A Digital Security is a security under U.C.C. Article 8 and investment property under U.C.C. Article 9;⁷⁰
- A Digital Asset may qualify as a financial asset under U.C.C. Article 8 if its owner so agrees;⁷¹ and
- A Non-Fungible Token may be classified as a Digital Consumer Asset or Digital Security depending on its use.⁷²

The first three of these provisions largely duplicate provisions of the Wyoming Digital Asset Statute.⁷³ The fourth and last could hardly do likewise, given the silence of Wyoming law about non-fungible tokens. The Zone Authority's classification of non-fungible tokens thus apparently represents another of its many firsts.

The CDEZ's Digital Asset Regulation contains a smattering of other terms. Again following Wyoming law, one of these stipulates that a bank providing custodial services for digital assets qualifies as a "securities intermediary" under the Zone's version of U.C.C. Article 8.⁷⁴ That proves notable because, as discussed below, the CDEZ has initiated a rulemaking proceeding comprehensively regulating banking in the Zone.⁷⁵ The rest of the Digital Asset Regulation concerns what might be called "regulatory housekeeping" matters and a great many provisions were negated and superseded by the Resolution Adopting U.C.C. Article 12 for Digital Assets, discussed next.

C. Resolution Adopting U.C.C. Article 12 for Digital Assets⁷⁶

The Uniform Law Commission recently approved the final version of its much anticipated U.C.C. article 12.⁷⁷ This, the latest of the U.C.C.'s 14 articles (they number more than 12 thanks to U.C.C. articles 2A and 4A), focuses on digital assets. U.C.C. Article 12 provides rules for commerce in cryptocurrencies, non-fungible tokens, digital assets, and other intangible bundles of rights

⁶⁹ *Id.* § 103(a)(1).

⁷⁰ *Id.* § 103(a)(2).

⁷¹ *Id.* § 103(b).

⁷² *Id.* § 103(c).

⁷³ See WYO. STAT. ANN. § 34-29-102(a)–(b) (2022).

⁷⁴ Compare Digital Assets Regulation, *supra* note 33, § 103(d), with WYO. STAT. ANN. § 34-29-102(c) (2021).

⁷⁵ See *infra* note 159 and accompanying text.

⁷⁶ RESOLUTION ADOPTING U.C.C. ARTICLE 12, *supra* note 34.

⁷⁷ See generally UNIF. COM. CODE AMENDS. (UNIF. L. COMM'N & AM. L. INST. 2022) (containing prefatory notes and comments).

created and traded on the fintech frontier. The Zone Authority wasted little time in adopting the new article and amendments to related articles of the U.C.C.⁷⁸ This subsection reviews what that means for fintech in the CDEZ.

U.C.C. Article 12 addresses objects of central concern to fintech and, thus, the CDEZ. The Uniform Law Commission describes the aim of U.C.C. Article 12 thusly:

The amendments respond to market concerns about the lack of definitive commercial law rules for transactions involving digital assets, especially relating to (a) negotiability for virtual (non-fiat) currencies, (b) certain electronic payment rights, (c) secured lending against virtual (non-fiat) currencies, and (d) security interests in electronic (fiat) money, such as central bank digital currencies.⁷⁹

The adoption package for Article 12 includes amendments to a good many other U.C.C. Articles, including 1, 2, 2A, 3, 4, 4A, 5, 7, 8, and 9.⁸⁰ These amendments ensure that the new provisions for digital assets interface well with older provisions that address such matters as: money; sales and leases of goods; negotiable instruments; bank deposits and collections; funds transfers; letters of credit; documents of title; securities; chattel paper; secured transactions; controllable accounts or payment intangibles; deposit accounts; investment property; and transferable records under the federal E-SIGN law or the Uniform Electronic Transactions Act (“UETA”).⁸¹ Article 12 and the other amendments in its adoption package thus upgrade the Uniform Commercial Code to handle fintech.

Given the widespread popularity of the U.C.C. among the many jurisdictions that have adopted its Articles and their proven success over many decades, the CDEZ could hardly have gone wrong in adopting Article 12. Existing CDEZ law already included U.C.C. Articles 1, 2, 2A, 3, 4, 4A, 5, 7, 8, and 9.⁸² The amendment package accompanying Article 12 calls for amending select parts of those Articles, too. The Zone Authority followed suit, thereby ensuring that old and new Commercial Codes would work together

⁷⁸ See RESOLUTION ADOPTING U.C.C. ARTICLE 12, *supra* note 34.

⁷⁹ UNIF. L. COMM’N & AM. L. INST., A SUMMARY OF THE 2022 AMENDMENTS TO THE UNIFORM COMMERCIAL CODE 1 (2022), <http://www.uniformlaws.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=2a18c952-5db5-ca16-2274-8c7531990903&forceDialog=0> [http://perma.cc/4J7Y-6TXA].

⁸⁰ See UNIF. COM. CODE AMENDS., *supra* note 77, at 1–4.

⁸¹ See A SUMMARY OF THE 2022 AMENDMENTS TO THE UNIFORM COMMERCIAL CODE, *supra* note 79, at 3.

⁸² ZONE CIVIL ORDINANCE, *supra* note 21, tit. VI ch. 1–9.

in support of fintech.⁸³ Happily for the clarity of CDEZ law, none of these edits alter provisions used in the classifications made by its Digital Assets Regulation.⁸⁴

The Nation and Zone Authority thereby had good reason to adopt U.C.C. Article 12 and its accompanying amendments and duly did so, the former by Ordinance and the latter by Resolution.⁸⁵ Left unvoiced was another reason to favor Article 12 and the other Articles, when building out the Zone's legal system, over the statutes of any particular state. Being a creation of the Uniform Law Commission, a nonprofit unincorporated association, and the American Law Institute, a private nonprofit organization, the Uniform Commercial Code implies no unseemly dependence on the laws of another sovereign. The Catawba have doubtless had enough of that.

U.C.C. Article 12 takes as its central concern what it calls "controllable electronic records" ("CERs") and what others call "digital assets": cryptocurrencies, non-fungible tokens and other bundles of intangible rights.⁸⁶ It defines *control* of a CER as "a record stored in an electronic medium that can be subjected to control under Section 12-105."⁸⁷ Article 12 excludes from the definition of CER these digital equivalents of conventional financial instruments: "a controllable account, a controllable payment intangible, a deposit account, an electronic copy of a record evidencing chattel paper, an electronic document of title, electronic money, investment property, or a transferable record."⁸⁸ That still leaves CER applicable to not just cryptocurrencies and

⁸³ RESOLUTION ADOPTING U.C.C. ARTICLE 12, *supra* note 34, at resolve 2 ("To adopt the UCC Amendments and the new Article 12 - Controllable Electronic Records, as approved and recommended for enactment in all the states by the Uniform Law Commission on July 13, 2022 at its 131st annual meeting."). Note that the apparent effect of this Resolution is to adopt all the amendments set forth for recommended enactment with Article 12, and not just the amendments for Articles 1 and 9, notwithstanding that "whereas" clause 6 in the same Resolution cites only the latter two Articles. It did so in quoting the CDEZ Civil Ordinance's earlier preparation for adopting Article 12: "[t]his update shall include all changes affecting Chapters 1 and 9 of this Title and the addition to this Chapter of proposed UCC Article 12: Controllable Electronic Records." ZONE CIVIL ORDINANCE, *supra* note 21, tit. VI, ch. 10, § 2. The Nation evidently did not foresee when it passed the Ordinance in February 2022, that the U.C.C. Article 12 amendment package that issued in July, 2022, would amend Articles besides 1 and 9. Saying that the Ordinance "shall include" Articles 1 and 9 by no means forbids amending other Articles, too.

⁸⁴ Compare Digital Assets Regulation, *supra* note 33, §§ 101, 102(a), (d), with UNIF. COM. CODE AMENDS., *supra* note 77, at 11–12.

⁸⁵ See RESOLUTION ADOPTING U.C.C. ARTICLE 12, *supra* note 34, at resolve 2; ZONE CIVIL ORDINANCE, *supra* note 21, tit. VI, ch. 10, § 2.

⁸⁶ See U.C.C. § 12-102(a)(1) (AM. L. INST. & UNIF. L. COMM'N 2022).

⁸⁷ *Id.*

⁸⁸ *Id.*

NFTs, but to digital assets more generally, including the Digital Consumer Assets and Digital Securities recognized in the CDEZ's Digital Assets Regulation.⁸⁹

A CER functions legally like tangible personal property, with “control” substituting for “possession” when it comes to establishing a presumption of ownership. Article 12 says that a person has control of a CER if the electronic record associated with it gives the person: substantially all the benefits of the CER; exclusive power to deny others substantially all of the CER's benefits; and exclusive power to transfer control to another person.⁹⁰ Control of a CER also entails having the power to identify oneself as the party with benefits to and powers over it.⁹¹ Exclusivity generally obtains even if control might be subject to change as part of a protocol built into the system in which the CER is recorded, as with digital assets subject to a smart contract, and if others share control of the CER, as in a multi-signature arrangement.⁹²

For example, a person who owned the private key to a digital wallet containing cryptocurrencies would ordinarily thereby have control over the assets therein, making them CERs under Article 12. That control allows the person to use digital locks to prevent others from using the digital asset.⁹³ It also allows the owner of the CER to spend the cryptocurrencies by transferring their control to another person.⁹⁴

Article 12 makes “control” the determining factor in determining ownership in a CER in almost all cases.⁹⁵ It gives the controlling person a claim superior to one who asserts a security or other interest in the CER⁹⁶ and even to one who has perfected such an interest through filing.⁹⁷ Commentators describe this as giving the claim of one with control over a CER “super-priority”

⁸⁹ See Digital Assets Regulation, *supra* note 33, § 103(a)–(b).

⁹⁰ See U.C.C. § 12-105(a)(1) (AM. L. INST. & UNIF. L. COMM'N 2022).

⁹¹ See *id.* § 12-105(a)(2).

⁹² See *id.* § 12-105(b)–(c).

⁹³ See A Summary of the 2022 Amendments to the Uniform Commercial Code, *supra* note 79, at 2–3.

⁹⁴ *Id.*

⁹⁵ See generally U.C.C. § 12 (AM. L. INST. & UNIF. L. COMM'N 2022) (detailing how “control” factors into ownership of CERs).

⁹⁶ See U.C.C. § 12-104(e) (AM. L. INST. & UNIF. L. COMM'N 2022) (“A qualifying purchaser acquires its rights in the [CER] free of a claim of a property right in [it].”); see also *id.* § 9-326A (2022 amendments) (noting that the security interest of a party having control of digital asset has priority over a conflicting security interest held by a secured party without control).

⁹⁷ U.C.C. § 12-104(h) (AM. L. INST. & UNIF. L. COMM'N 2022) (providing that filing of a financing statement under Article 9 is not notice of a claim to a CER).

over any other claimant to it.⁹⁸ It has the practical effect of allowing a “qualifying purchaser”—one who takes control of a CER “for value, in good faith, and without notice of a claim of a property right” by another in the CER—the benefit of the same “take free” rule that applies to tangible personal property.⁹⁹ The same holds true under the amendments suggested to Article 9 for an electronic copy of a record evidencing chattel paper, a controllable account, or a controllable payment intangible.¹⁰⁰ Similarly, the new amendments give priority to security interests in a CER, controllable account, or controllable payment intangible to a party having control of it.¹⁰¹

These rules greatly decrease uncertainty in fintech transactions by making it relatively easy to establish uncontested property rights in a CER and other digital assets. In the CDEZ, for example, a person who purchases an NFT innocent of any awareness that it was stolen or pledged as security for a loan can rest assured that nobody else has better claim to it.¹⁰² Only a purchaser who had actual knowledge that the NFT was stolen or pledged as security would have reason to worry. Constructive knowledge, such as that ordinarily provided by the filing of a finance statement, would not suffice.¹⁰³ These rules strike a balance between discouraging illegal activity and encouraging honest trade, lowering transaction costs for commerce in the Zone.

Relevant to cryptocurrencies, a topic of central concern to fintech, the post-Article 12 U.C.C. distinguishes between fiat and non-fiat versions. Only the former now qualifies as “money”—a medium of exchange that is currently authorized or adopted by a domestic or foreign government.”¹⁰⁴ In the newly revised U.C.C., money may exist in its traditional tangible form or, for the first time, in electronic form.¹⁰⁵ Security interests in electronic money

⁹⁸ Andrew Hinkes, *Why Crypto Needs UCC Article 12*, COINDESK (Oct. 28, 2022), <http://www.coindesk.com/layer2/2022/10/28/why-crypto-needs-ucc-article-12/> [perma.cc/R3VV-TKDE].

⁹⁹ U.C.C. § 12-102(2) (AM. L. INST. & UNIF. L. COMM’N 2022) (defining “qualifying purchaser”).

¹⁰⁰ U.C.C. § 9-105 (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (outlining the amendments regarding electronic copy of a record evidencing chattel paper); U.C.C. § 9-107A(b) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (outlining the amendments regarding controllable account and controllable payment intangible).

¹⁰¹ U.C.C. § 9-326A (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments).

¹⁰² See generally RESOLUTION ADOPTING U.C.C. ARTICLE 12, *supra* note 34.

¹⁰³ U.C.C. § 12-104(h) (AM. L. INST. & UNIF. L. COMM’N 2022).

¹⁰⁴ U.C.C. § 1-201(24) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments).

¹⁰⁵ U.C.C. § 9-102(a)(31A) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (defining “electronic money” as “money in an electronic form”).

may be perfected only by the same sort of control required for perfection of interests in CERs.¹⁰⁶

The new definition of “money” goes on to expressly exclude Bitcoin and other cryptocurrencies not created by governments: “The term does not include an electronic record that is a medium of exchange recorded and transferable in a system that existed and operated for the medium of exchange before the medium of exchange was authorized or adopted by the government.”¹⁰⁷ Non-fiat cryptocurrencies like Bitcoin and Ether qualify as CERs, however, making the rules for perfecting security interests the same for all electronic media of exchange, fiat or otherwise.¹⁰⁸ As with digital assets in general, these rules ensure that electronic money and cryptocurrencies flow smoothly in the CDEZ, unhindered by doubts about who owns what.

Because the disembodied nature of fintech transactions makes it difficult to determine where they happen, several of the new U.C.C. rules aim to make it easy to define the applicable law and forum in advance. A CER can be made subject to a jurisdiction that it or the system in which it is recorded expressly designates.¹⁰⁹ The law of the CERs with which they are associated govern controllable accounts or controllable payment intangibles, making them susceptible to a similar treatment.¹¹⁰ Enforceable choice of law and choice of forum clauses can also be built into negotiable instruments¹¹¹ and letters of credit.¹¹²

Article 12 and the other 2022 amendments effectuated other changes to the U.C.C. Provisions that originally described transactions on paper, such as “sign” and “writing,” were updated to also apply to electronic transactions.¹¹³ The treatment of hybrid

¹⁰⁶ Compare U.C.C. § 9-105A (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (outlining the control of electronic money), with U.C.C. § 12-105 (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (outlining control of CERs); see also U.C.C. § 9-312(b)(4) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (limiting perfection of security interest in electronic money to means described in § 9-314); U.C.C. § 9-314 (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (referencing Section 9-105A standards of control for perfection of security interest in electronic money).

¹⁰⁷ U.C.C. § 1-201(24) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments).

¹⁰⁸ See A SUMMARY OF THE 2022 AMENDMENTS TO THE UNIFORM COMMERCIAL CODE, *supra* note 79, at 6–7.

¹⁰⁹ U.C.C. § 12-107(c) (AM. L. INST. & UNIF. L. COMM’N 2022).

¹¹⁰ U.C.C. § 9-306B(a) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments).

¹¹¹ U.C.C. § 3-104(a)(3)(iv)–(v) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments).

¹¹² U.C.C. § 5-116 (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments).

¹¹³ U.C.C. § 1-201(37) (AM. L. INST. & UNIF. L. COMM’N 2022) (2022 amendments) (substituting “record” for “writing” in definition of “sign”); see also U.C.C. § 1-201(10) (AM.

transactions that combine aspects of a sale or lease of goods with the sale, lease, or licensing of other property or with the provision of services was clarified.¹¹⁴ Thanks to the Zone Authority's Resolution Adopting U.C.C. Article 12 for Digital Assets, these became part of the CDEZ's law, too.

III. PENDING CDEZ REGULATIONS

The Zone Authority continued to build the CDEZ legal system in 2022 by launching proceedings for three additional rules:

- A Distributed Autonomous Organization (“DAO”) Regulation;¹¹⁵
- A Stablecoin Regulation;¹¹⁶ and
- A Banking and Commercial Services Code.¹¹⁷

The Zone Authority has published drafts of each prospective rule but as yet has finalized none.¹¹⁸

In each case, it appears that the Zone Authority largely complied with the Administrative Procedure Regulation that it issued earlier in 2022. Indeed, the Zone Authority exceeded the requirements of that regulation in the case of the DAO Regulation and Stablecoin Regulation by issuing advanced notices of proposed

L. INST. & UNIF. L. COMM'N 2022) (2022 amendments) (redefining “conspicuous”); U.C.C. § 1-201(36) (AM. L. INST. & UNIF. L. COMM'N 2022) (2022 amendments) (redefining “send”).

¹¹⁴ See U.C.C. § 2-106(5) (AM. L. INST. & UNIF. L. COMM'N 2022) (defining “hybrid transaction”); U.C.C. § 2A-103(1)(h.1) (AM. L. INST. & UNIF. L. COMM'N 2022) (defining “hybrid lease”); see also U.C.C. § 2-102 (AM. L. INST. & UNIF. L. COMM'N 2022) (2022 amendments) (defining scope of Article); U.C.C. § 2A-102 (AM. L. INST. & UNIF. L. COMM'N 2022) (2022 amendments) (same).

¹¹⁵ Draft Decentralized Autonomous Organization Regulation, Reg. 003-022 (draft Aug. 13, 2022) [hereinafter DAO Regulation Draft], http://zoneauthority.io/wp-content/uploads/2022/08/DAO-Rule-Notice-of-Proposed-Rule_.pdf [<http://perma.cc/BB2X-Q3KC>]; *PR004 – Catawba Digital Economic Zone Issues Proposed Regulation on DAOs*, CATAWBA DIGIT. ECON. ZONE (Aug. 13, 2022), <http://catawbadigital.zone/pr004-catawba-digital-economic-zone-issues-proposed-regulation-on-daos> [<http://perma.cc/A67U-P3X3>] (dating issuance of draft regulation).

¹¹⁶ Draft Stablecoin Regulation, Reg. 004-22 (draft Oct. 27, 2022), <http://zoneauthority.io/stablecoin-regulation-draft/>; *PR007 – Stablecoin Regulation: Draft*, CATAWBA DIGIT. ECON. ZONE (Oct. 27, 2022), <http://catawbadigital.zone/pr007-stablecoin-regulation-draft/> [<http://perma.cc/Q2MJ-PLDB>] (dating issuance of draft Stablecoin Regulation).

¹¹⁷ Draft Banking and Commercial Services Code (draft Oct. 27, 2022) <http://zoneauthority.io/banking-and-financial-services-code/> [<http://perma.cc/A87A-2AGD>]; *PR007 – Stablecoin Regulation: Draft*, CATAWBA DIGIT. ECON. ZONE (Oct. 27, 2022), <http://catawbadigital.zone/pr007-stablecoin-regulation-draft/> [<http://perma.cc/R3MV-4CTW>] (dating issuance of draft Banking and Commercial Services Code).

¹¹⁸ *Banking and Financial Services Code*, Catawba Digit. Econ. Zone, <http://zoneauthority.io/banking-and-financial-services-code> [<http://perma.cc/A87A-2AGD>] (last visited Mar. 16, 2023).

rulemakings for each, on June 1 and September 7, respectively.¹¹⁹ That was strictly speaking unnecessary because, as discussed above, the Administrative Procedure Regulation imposed no requirements for notices of or public participation in rulemakings before the Zone won its first resident, on September 29.¹²⁰ In the case of the Banking and Commercial Services Code, the Zone Authority went straight to issuing a draft rule and soliciting public commentary on that.¹²¹ While skipping an advance notice of rulemaking did not violate the as-yet inoperative Administrative Procedure Regulation, the Zone Authority appears to have published an incomplete version of the Code, thereby marring its otherwise impressive performance.¹²²

This section briefly reviews each of the three pending rules listed above, in order. It would hardly repay the effort to scrutinize them closely given that none have yet reached their final and binding form. Instead, the discussion aims to discern from these ongoing proceedings the future of fintech in the CDEZ.

A. DAO Regulation Draft

Though the fintech world very much wants distributed autonomous organizations, the legal world has struggled to figure them out. The Zone Authority has taken up that challenge. It began on June 1, 2022, by giving advance notice of an upcoming regulation for DAOs.¹²³ The Zone Authority described DAOs as:

blockchain-based, decentralized, distributed organizations, shaped more as a network than a traditional corporate hierarchy or pyramid. DAOs are organized via smart contracts. They are a way for parties with a mutual goal to coordinate, share resources, and distribute benefits. Even without traditional hierarchical structures, DAOs can provide democratic mechanisms of decision making. They also provide novel ways of structuring membership shares, voting rights, and contributions, compared to traditional organizations. DAOs can use

¹¹⁹ See *Advance Notice on Upcoming DAO Regulation*, CATAWBA DIGIT. ECON. ZONE (June 1, 2022), http://zoneauthority.io/wp-content/uploads/2022/06/DAO_ANPRM_with_Letterhead-3.pdf [<http://perma.cc/FT7L-7UP3>]; *Advance Notice of Proposed Rulemaking (ANPRM) on Stablecoins*, CATAWBA DIGIT. ECON. ZONE (Sept. 7, 2022), <http://zoneauthority.io/advance-notice-of-proposed-rulemaking-anprm-on-stablecoins/> [<http://perma.cc/D3DT-KRBC>].

¹²⁰ Administrative Procedure Regulation, *supra* note 32, § 103(b).

¹²¹ See generally, *Banking and Financial Services Code*, *supra* note 118.

¹²² After this Paper was submitted for publication and the author had notified the CDEZ of the incomplete publication, it vowed to remedy the mistake and reopen the draft regulations for public commentary. Letter from Joseph McKinney, CEO of CDEZ, to author (Dec. 23, 2022) (on file with author).

¹²³ *Advance Notice on Upcoming DAO Regulation*, *supra* note 119.

tokens to vote, incentivize and pay members, among many other activities normally performed by organizations.¹²⁴

As the Zone Authority's description makes clear, DAOs seem optimized for fintech. They do not easily fit into legacy legal systems, however.

The Advance Notice reviewed the state of the art in regulating DAOs and suggested that the CDEZ might again, as in enacting rules for digital assets, follow Wyoming's lead. One of the few states to offer legal personhood to DAOs, Wyoming allows them to take the form of a kind of limited liability company ("LLC").¹²⁵ The Advance Notice hinted that the Zone Authority might go beyond Wyoming, however, by allowing DAOs the alternative of forming as cooperative organizations ("co-ops").¹²⁶ The Zone Authority also welcomed the public to suggest still other classification options. Comments on the Advance Notice closed on July 15, 2022.¹²⁷

The Zone Authority issued its Decentralized Autonomous Organization Regulation Draft ("DAO Regulation Draft") on August 13, 2022.¹²⁸ The draft regulation offers DAOs two options for their form of organization: an LLC or an unincorporated nonprofit association ("UNA").¹²⁹ The Civil Ordinance that established the basic legal framework of the CDEZ recognizes both forms of legal person.¹³⁰ On top of these frameworks, the draft regulation imposes a number of conditions adapting them for life as a DAO.

Each such entity must, for example, register under a name including "DAO LLC" or "DAO UNA".¹³¹ Its governing public documents must furthermore include this disclosure: "The rights of members in a decentralized autonomous organization may differ materially from the rights of members in other limited liability companies or unincorporated nonprofit associations," and that zone law, underlying smart contracts, and internal governance "may define, reduce, or eliminate fiduciary duties and may restrict transfer of ownership interests, withdrawal, or resignation from the decentralized autonomous organization, return of capital contributions and dissolution of the decentralized autonomous

¹²⁴ *Id.* at 2.

¹²⁵ WYO. STAT. ANN. § 17-31-104 (2022).

¹²⁶ See generally *Advance Notice on Upcoming DAO Regulation*, *supra* note 119, at 4.

¹²⁷ See *Advance Notice on Upcoming DAO Regulation*, *supra* note 119, at 4.

¹²⁸ DAO Regulation Draft, *supra* note 115; *Catawba Digital Economic Zone Issues Proposed Regulation on DAOs*, *supra* note 115 (providing date of DAO Regulation Draft's issuance).

¹²⁹ DAO Regulation Draft, *supra* note 115.

¹³⁰ See ZONE CIVIL ORDINANCE, *supra* note 21, tit. II, ch. 7 (LLCs), ch. 9 (UNAs).

¹³¹ DAO Regulation Draft, *supra* note 115, § 104(d).

organization.”¹³² So that prospective members can understand the rights they will have in the organization, the founding documents of each DAO LLC or DAO UNA must “establish how the decentralized autonomous organization shall be managed by the members, including to what extent the management will be conducted algorithmically.”¹³³ In these, as in many other particulars, the CDEZ’s draft DAO regulations follow the lead of Wyoming DAO legislation.¹³⁴

The CDEZ draft regulations impose still other requirements on DAOs that want to form as LLCs or UNAs in the CDEZ. These, too, tend to mirror those of Wyoming’s DAO legislation. Both require that an applicant DAO provide digital identifiers for any smart contracts used to manage it, for instance.¹³⁵ It appears, however, that the CDEZ draft regulations go further than Wyoming law in requiring digital identifiers for all of the DAO’s members.¹³⁶ That is not necessarily to say, however, that these identifiers must disclose who stands behind them; they might conceivably function as mere pseudonyms.

The CDEZ’s DAO Regulation Draft also improvises in allowing to DAOs to take the form of UNA. That such an entity is called “nonprofit” suggests that it might not offer an attractive platform for fintech. The DAO Regulation Draft offers a partial fix of that seeming deficiency. Although the CDEZ’s framework for UNAs forbids them from paying dividends or making distributions to members or managers, it allows a UNA to “pay reasonable compensation or reimburse reasonable expenses to a member or manager for services rendered” and confer benefits consistent with its nonprofit purpose.¹³⁷ The DAO Regulation Draft clarifies that this exception “includes, but is not limited to, payments and compensations for potential staking and the assumption of risk in regard to the staking of a token being held in relation to the DAO UNA governance, . . . which shall not be construed as a distribution of profits to the members” in contravention of the

¹³² *Id.* § 104(c).

¹³³ *Id.* § 104(e).

¹³⁴ Compare DAO Regulation Draft, *supra* note 115, § 104, with WYO. STAT. ANN. § 17-31-104 (2022).

¹³⁵ Compare WYO. STAT. ANN. § 17-31-106(b) (2022), with DAO Regulation Draft, *supra* note 115, § 105(a)(4) (DAO LLC smart contracts), and DAO Regulation Draft, *supra* note 115, § 105(b)(5) (DAO UNA smart contracts respectively).

¹³⁶ See DAO Regulation Draft, *supra* note 115, § 105(a)(1) (DAO LLC members); *id.* § 105(b)(2) (DAO UNA members).

¹³⁷ ZONE CIVIL ORDINANCE, *supra* note 21, at tit. VII, ch. 9, § 25(a)–(b)(2) (forbidding dividends or distributions but allowing reasonable compensation and reimbursement).

limits imposed on UNAs.¹³⁸ In this way, the draft regulation leaves room for DAO UNA members to make money from participating in the governance of their nonprofit organization.

Why would any DAO bother complying with these requirements? Because doing so would afford its individual members the protection of limited liability for acts of the DAO.¹³⁹ Without that shelter, DAOs would likely qualify as partnerships or joint ventures, the members of which would bear joint and several liability for debts of the entity.¹⁴⁰ Whatever the form of its final regulations for DAOs, the CDEZ will doubtless want to ensure that they provide both commercial opportunities and protections from personal liability.

B. Stablecoin Regulation Draft

The Zone Authority gave advance notice of a proposed rulemaking for stablecoins on September 7, 2022.¹⁴¹ Comments on that notice closed on September 30, 2022.¹⁴² The Zone Authority published its Stablecoin Regulation Draft on October 27, 2022, concurrent with publication of the Banking and Commercial Services Code Draft discussed in the next subsection.¹⁴³ As the Zone Authority explained in an accompanying press release, the framework set forth in these two drafts “is guided by financial stability and consumer protection, requiring that all stablecoins be issued by regulated entities, holding a 11 ratio of assets to stablecoin tokens, and limiting those assets only to high-quality, liquid ones.”¹⁴⁴

What motivated the Zone Authority’s interest in stablecoins? As the advance notice observed, stablecoins offer fintech a way to smooth out the high volatility characteristic of popular cryptocurrencies like Bitcoin or Ethereum.¹⁴⁵ The value of a stablecoin is pegged to a relatively stable asset such as a fiat currency, a commodity like gold, or a specially designed financial

¹³⁸ DAO Regulation Draft, *supra* note 115, § 117.

¹³⁹ See ZONE CIVIL ORDINANCE, *supra* note 21, at tit. VII, ch. 7, § 304 (providing for limited liability of member of LLC); *id.* tit. VII, ch. 9, § 8 (providing same for UNA).

¹⁴⁰ *Advance Notice on Upcoming DAO Regulation*, *supra* note 119.

¹⁴¹ *Advance Notice of Proposed Rulemaking (ANPRM) on Stablecoins*, *supra* note 119.

¹⁴² *PR006 – Tribal Nation-Backed Economic Zone Solicits Feedback for New Stablecoin Regulatory Structure*, CATAWBA DIGIT. ECON. ZONE (Sept. 8, 2022), <http://catawbadigital.zone/wp-content/uploads/2022/09/PR006-CDEZ-ANPRM-Stablecoins-Press-Release-with-letterhead.-Sep-8th-2022.docx.pdf> [<http://perma.cc/H54M-UENM>].

¹⁴³ *PR007 – Stablecoin Regulation: Draft*, *supra* note 117.

¹⁴⁴ *Id.*

¹⁴⁵ *Advance Notice of Proposed Rulemaking (ANPRM) on Stablecoins*, *supra* note 119.

instrument.¹⁴⁶ Unfortunately for the nascent fintech sector, stablecoins have proven unreliable in practice. The Zone Authority aims to correct that deficiency by providing regulatory clarity and certainty for stablecoins without stymying innovation.¹⁴⁷

How does the Stablecoin Regulation Draft try to satisfy those goals? By limiting the issuance of stablecoins to select financial entities, chosen for their capacity to deliver on their promises.¹⁴⁸ Specifically, a Zone Payment Stablecoin Regulator will assess any would-be stablecoin issuer for its ability applicant “to maintain reserves backing its outstanding payment stablecoins on an at least a 1-to-1 basis.”¹⁴⁹ These reserves shall consist of U.S. coins and currency (including Federal Reserve notes), funds held as insured deposits, and other liquid assets as defined in federal laws or regulations or as provided for in the Zone’s own banking code.¹⁵⁰ Entities that fail to meet those standards would be strictly forbidden from offering or issuing stablecoins.¹⁵¹

One stablecoin evidently already has a lead in winning approval under the pending rules. Informed third parties claim that the CDEZ “is designed to utilize a new and innovative digital currency known as Fluent.”¹⁵² This commentary, co-written by parties involved in designing CDEZ,¹⁵³ one of whom serves as Chief Legal Officer of Nest,¹⁵⁴ the company issuing Fluent,¹⁵⁵ describes the stablecoin as “a bank-led, transparent stablecoin, designed with federated custody across multiple institutions to offer maximum stability.”¹⁵⁶ In compliance with the reserve requirements of the Stablecoin Regulation Draft, “the digital currency utilized in the Fluent system is one-to-one with the U.S. dollar, with all minted tokens backed with cash and approved assets.”¹⁵⁷

Comments on the Stablecoin Regulation Draft closed on November 26, 2022.¹⁵⁸ No final rule has yet issued. Even if it had,

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ Draft Stablecoin Regulation, *supra* note 116, § 103.

¹⁴⁹ *Id.* § 104(a)(4)(A).

¹⁵⁰ *Id.* § 106.

¹⁵¹ *Id.* § 111.

¹⁵² Guedel & Viles, *supra* note 8, at 600.

¹⁵³ *Id.* at 592.

¹⁵⁴ *See id.* at 591 n.* (introducing W. Gregory Guedel).

¹⁵⁵ *FLUENT: Federated Tokenization of Currency*, NEST FIN. GRP., <http://www.nestgroup.io/products#Fluent> [<http://perma.cc/T8RM-RY7D>] (last visited Dec. 22, 2022).

¹⁵⁶ Guedel & Viles, *supra* note 8, at 600.

¹⁵⁷ *Id.* at 600–01.

¹⁵⁸ *PR007 – Stablecoin Regulation: Draft*, *supra* note 116.

the draft's reliance on the Zone's still-prospective banking code would leave it less than fully realized. The discussion now turns to that, the last of the three currently pending rulemaking proceedings.

C. Banking and Commercial Services Code Draft

The Zone Authority published its Banking and Commercial Services Code Draft¹⁵⁹ simultaneously with the publication of its Stablecoin Regulation Draft, on October 27, 2022.¹⁶⁰ That makes sense administratively, given that the two sets of rule address interrelated matters. As the Zone Authority explained, “The banking code allows a large range of regulated institutions, including trusts, Special Depository Institutions, money transmitters, and full-scale banking corporations. The stablecoin framework complements the draft banking code and specifies the regulated entities that are permitted to issue stablecoins.”¹⁶¹

More than any other prospective rule, the Banking and Commercial Service Code Draft operates at a wholesale level rather than a retail one. In other words, it aims to provide a foundation on which large regulated commercial enterprises can build the infrastructure necessary to support smaller and more freewheeling entities, such as DAO LLCs and DAO UNAs dealing in stablecoins and other digital assets.¹⁶² As one might expect of enterprise-grade code for large, regulated entities, the Banking and Commercial Service Code Draft runs long—allegedly, for 129 pages of single-spaced text.¹⁶³ So voluminous a document would defy easy summary in any event. As the use of “allegedly” suggests, however, there is another problem with assessing the Banking and Commercial Service Code Draft: it was not initially published in full. Whereas the document's table of contents indicates that it ends after Chapter 190, the document published by the Zone Authority ends part way through Chapter 150 with a notice reading, “Page 80 of 129”.¹⁶⁴

Notified of this oversight, the CDEZ pledged to set matters right by publishing the entirety of the draft regulation and reopening public comments.¹⁶⁵ For present, the Zone Authority's

¹⁵⁹ Draft Banking and Commercial Services Code, *supra* note 117.

¹⁶⁰ Though the draft Code bears no date, its issuance was announced by a separate press release. *PR007 – Stablecoin Regulation: Draft*, *supra* note 116.

¹⁶¹ *Id.*

¹⁶² See Draft Banking and Commercial Services Code, *supra* note 117.

¹⁶³ See *id.* at 95 (ending with notice, “Page 80 of 129”).

¹⁶⁴ *Id.* at 1, 95.

¹⁶⁵ Letter from Joseph McKinney, CEO of CDEZ, to author (Dec. 23, 2022) (on file with author).

own summary of the Banking and Commercial Service Code Draft will have to suffice. The press release accompanying the draft's publication says it was based on the state-level banking codes of Wyoming, South Dakota, and North Dakota.¹⁶⁶ The Zone Authority explains these choices:

Wyoming was selected because of its provisions allowing banks to conduct digital assets business. Unlike Wyoming, this ability is not limited solely to special depository institutions. The framework takes most of its inspiration from South Dakota, which is the most widely used banking framework in the United States, holding the most assets under management of any State. The code also ensures that each bank is held accountable for the highest standards of compliance, including in money laundering, financial stability, and consumer protection. The proposed banking regulation draws on North Dakota for its implementation of a Public Bank. Like North Dakota, the Catawba Public bank is a “bank of banks”, facilitating payment rails and regulation of banks chartered within the Zone. The Banking Code also provides support in engaging key financial and regulatory stakeholders.¹⁶⁷

Further commentary on the prospective Banking and Commercial Services Code comes from third parties evidently tasked to help write it, W. Gregory Guedel and Philip H. Viles, Jr.¹⁶⁸ They summarize their Code's contents and conclude that it “not only provides the Tribal government with the means of exercising sovereign governance over economic activity, but it also attract and facilitates new business within the Nation's jurisdiction, thereby serving as a substantial and effective catalyst for economic development within Native American communities.”¹⁶⁹ It is impossible to say at this time to what degree the enacted Code will embody the author's version and what effect it will have in practice.

The deadline to submit comments on the Banking and Commercial Services Code Draft originally fell on November 26th, 2022.¹⁷⁰ Having been notified that less than the entire draft was published, however, the Zone Authority pledged to publish the whole and extend the deadline for comments.¹⁷¹ It is not too late

¹⁶⁶ *PR007 – Stablecoin Regulation: Draft*, *supra* note 116.

¹⁶⁷ *PR007 – Stablecoin Regulation: Draft*, *supra* note 116 (paragraph break omitted).

¹⁶⁸ Guedel & Viles, *supra* note 8, at 605 (claiming the paper's authors developed the CDEZ's Banking and Financial Services Code).

¹⁶⁹ *Id.* at 608.

¹⁷⁰ See *PR007 – Stablecoin Regulation: Draft*, *supra* note 116 (giving the deadline for comments on both the Stablecoin Regulation Draft and the Banking and Commercial Services Code Draft of Nov. 26, 2022).

¹⁷¹ Letter from Joseph McKinney, CEO of CDEZ, to author (Dec. 23, 2022) (on file with author).

to do so; the Zone Authority has not yet issued a final version of the Banking and Commercial Services Code.

CONCLUSION

This paper has reviewed the birth and rapid maturation of the CDEZ, a special jurisdiction dedicated to bringing the rule of law to fintech. The CDEZ already boasts of a number of firsts: the first entirely virtual zone to focus on fintech; the first time that a Native American tribe has taken up the regulation of a whole field of commerce; and the first special jurisdiction in the United States to provide its own civil laws and legal system. If all goes as planned, the CDEZ will also soon host the first tribal public bank in the United States.

The CDEZ launched in the spring of 2022 with a comprehensive set of rules for commerce, borrowed from tried and trusted sources. Before the year's end, it added to these an Administrative Procedure Regulation, a Digital Asset Regulation, and a Resolution adopting as local law new U.C.C. Article 12 and related amendments. The Zone Authority has begun rulemaking proceedings for regulations addressing DAOs, stablecoins, and banking.

Though the CDEZ has made a strong start, it will face considerable challenges in its campaign to establish a thriving online commercial hub. It remains unclear how best to adapt old rules for such novelties as cryptocurrencies, NFTs, and other digital assets. The Zone Authority will likewise have to blaze trails in figuring out how to regulate DAOs, stablecoins, and a tribal public bank. The Catawba will not be entirely alone in this pioneering effort—other jurisdictions have begun trying to attract the same businesses and customers—but it can hardly expect much help. Will the CDEZ win another first in the race to bring good governance to the fintech frontier? Only time will tell.

Dollar Trap and Digital Currency

Lan Cao*

The dollar's status as the world's reserve currency, cemented after World War II, has been called into question over the years. American stewardship of the dollar, as both a currency of the United States and an international reserve currency, has been a source of global resentment, from allies as well as rivals. Fractures within the international monetary system, many of which arise intrinsically from the dollar's unique status, have been compounded by the manner the United States has used the dollar: one, to solve financial disturbances such as those emerging from the 2008 housing crisis, and two, to punish certain countries like Iran and Russia by cutting them off from access to dollars and access to the dollar-based international financial system. This Article examines how, against this backdrop, China's establishment of a central bank digital bank currency, the digital yuan, is designed to serve both the Chinese government's aim to consolidate Party control domestically as well as to engage in dedollarization or yuan internationalization, as a way to bypass American weaponization of the dollar.

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* Betty Hutton Williams Professor of International Economic Law. The author thanks editors of the *Chapman Law Review* for putting together an excellent symposium and for their help in editing this article. Research for the article was supported by a summer research stipend from Chapman University Fowler School of Law.

INTRODUCTION

The history of money is a long and windy one. Our current system is on the cusp of a major paradigm shift driven by the establishment of private as well as sovereign digital money, with China in the forefront of the creation of the latter. More than a thousand years ago, when money was essentially coins, particularly gold and silver, China, under the Tang Dynasty (618 to 907 A.D.), invented bank notes or paper money, referred to as “flying cash” because it could blow away, unlike metal money.¹ Now, in a groundbreaking move, “the Chinese government is minting cash digitally, in a re-imagination of money that could shake a pillar of American power.”² China has rolled out its digital currency as part of a pilot program in fifteen of its twenty three provinces³ while the United States is still studying the issue.⁴

Although it might appear that money is already cashless and virtual, because credit cards and apps such as Apple Pay in the United States and WeChat in China have diminished reliance on bills and coins, cashless payment systems are simply systems of moving money electronically. A system of cashless payment is but “[t]he digitization of currency, which stems from the advent of electronic payment/clearance and mature interbank IT systems, allow[ing] commercial banks to more efficiently and independently generate the credit flows that expand broad money supply, or M2.”⁵

¹ James Kyngé & Sun Yu, *Virtual Control: The Agenda Behind China's New Digital Currency*, FIN. TIMES (Feb. 16, 2021), <http://www.ft.com/content/7511809e-827e-4526-81ad-ae83f405f623>.

² James T. Areddy, *China Creates Its Own Digital Currency, a First for Major Economy*, WALL ST. J. (Apr. 5, 2021, 10:48 AM), <http://www.wsj.com/articles/china-creates-its-own-digital-currency-a-first-for-major-economy-11617634118>. [<http://perma.cc/UVX8-5QXD>].

³ Lucas Mearian, *As China Pushes Its Digital Currency Plans, the US Falls Behind*, COMPUTERWORLD (Dec. 21, 2022, 3:00 AM), <http://www.computerworld.com/article/3683968/as-china-pushes-its-digital-currency-plans-the-us-falls-behind.html> [<http://perma.cc/8448-9B3T>].

⁴ Christopher Mims, *Central-Bank Digital Currencies Are Coming—Whether Countries Are Ready or Not*, WALL ST. J. (Jan. 16, 2023, 10:00 AM), <http://www.wsj.com/articles/digital-currencies-banking-system-11673625716>.

⁵ Dovey Wan, *Digital Renminbi: A Fiat Coin to Make MO Great Again*, COINDESK (May 17, 2019, 1:00 AM), <http://www.coindesk.com/markets/2019/05/17/digital-renminbi-a-fiat-coin-to-make-m0-great-again/> [<http://perma.cc/RZ5A-SWWS>]. Economists use M0, M1, M2, M3 as the four main measures of a country's money supply with each category reflecting the ease with which it can be exchanged for cash. The four measures are nested which means that M3 includes M1 and M2; M2 includes M0 and M1. Mike Finnegan, *Money Supply*, ECON FOCUS, First Quarter 2019, at 6, http://www.richmondfed.org/publications/research/econ_focus/2019/q1/jargon_alert.

The smallest and most liquid measure, M0, is strictly currency in circulation and money being kept by banks in reserves; hence, M0 is often referred to as the

Digital money spearheaded by China is in a different category altogether because in its current project, called Digital Currency/Electronic Payment (“DCEP”),⁶ “China is turning legal tender itself into a computer code.”⁷ In the old days, “central banks directly control base money creation/destruction but have only indirect power over the broader, credit flow-driven monetary supply. Now, with digital fiat currency, they have the potential to bypass commercial banks and regain control of currency creation/supply end to end, thereby structurally centralizing their power in policymaking.”⁸

Since 2014, China has been at work to create and establish a Central Bank Digital Currency (“CBDC”), prompted by its own concerns about challenges potentially posed by Facebook’s own private digital currency, the Libra.⁹ As the Libra was to be backed by a basket of currencies which was to include the U.S. dollar but not the yuan, China was concerned about how the Libra would affect its own currency domestically as well as internationally.¹⁰ Wang Xin, director of the Research Bureau of the People’s Bank of China (“PBOC”), raised this alarm:

If the digital currency is closely associated with the U.S. dollar, it could create a scenario under which sovereign currencies would coexist with U.S. dollar-centric digital currencies. There would be in essence one boss, that is the U.S. dollar and the United States. If so, it would bring a series of economic, financial and even international policy consequences.¹¹

‘monetary base.’ M1 is defined as all of M0 plus the remaining demand deposits not in reserves as well as traveler’s checks; it is often referred to as ‘narrow money.’ M2 is everything included in M1 plus savings accounts, time deposits (under \$100,000), and retail money market funds. M3 is everything in M2 plus larger time deposits and institutional money market funds.

Id.

⁶ See YAYA J. FANUSIE & EMILY JIN, CHINA’S DIGITAL CURRENCY: ADDING FINANCIAL DATA TO DIGITAL AUTHORITARIANISM 1 (2021).

⁷ Areddy, *supra* note 2. The difference between digital fiat currency and other cryptocurrencies is that “CBDCs [Central Bank Digital Currencies], like traditional cash, are backed by a central bank’s authority, which is why they’re called central bank digital currencies.” Mearian, *supra* note 3. Note, however, that this does not mean that the digital yuan itself will be based on blockchain. See *infra* notes 229–230 and accompanying text.

⁸ Wan, *supra* note 5, at 6.

⁹ See Miranda Wood, *How China’s Central Bank Digital Currency Will Help Renminbi To Challenge Dollar*, LEDGER INSIGHTS (Oct. 18, 2019) [hereinafter Wood, *China’s Central Bank*], <http://www.ledgerinsights.com/china-central-bank-digital-currency-cbdc-renminbi-dollar/> [<http://perma.cc/M6DY-65VX>]. The Libra, later renamed Diem, is unlikely to come to fruition due to concerns from regulators and lawmakers. Clare Duffy, *Facebook’s Dream of Creating Its Own Global Cryptocurrency Officially Comes to An End*, CNN BUS. (Feb. 1, 2022, 4:01 PM), <http://www.cnn.com/2022/02/01/tech/facebook-diem-association-dissolving/index.html> [<http://perma.cc/JR99-4LCH>].

¹⁰ Wood, *China’s Central Bank*, *supra* note 9.

¹¹ *Id.*

There are two edges to China's CBDC sword—domestic and international. Although it might seem on the surface like the CBDC is “just” for domestic use and, as this Article will demonstrate, for domestic control, a digital yuan is also purposefully designed to reshape the dollar-dominant international order. China's CBDC is meant to “simplify cross border transactions. For a long time, [China] has been dissatisfied with the U.S. dollar's (USD) ongoing role as the global reserve currency and is committed to extending its currency's reach.”¹²

The prospect of China reconstituting the international monetary system has created consternation on the international front. Jeremy Fleming, chief of the Government Communications Headquarters, Britain's security and intelligence organization, warned that China's advances in technology, such as its centralized digital currency, will be used to repress citizens at home and “rewrite international standards,” allowing it to evade international sanctions of the type used against Russia, as an example.¹³ U.S. officials have launched war game exercises that incorporate the potential threat of a digital yuan—also referred to as the e-CNY or the digital renminbi (“RMB”). In one of the scenarios held by the Harvard Kennedy School and Belfer Center for Science and International Affairs in Cambridge, Massachusetts, former high-ranking U.S. officials dealt with nightmare scenarios in which the CBDC undermined the dollar while North Korea used the digital yuan to build nuclear missiles and bypass U.S. sanctions.¹⁴ The Biden administration, “troubled by the long-term effects a digital yuan may have on the dollar's

¹² *Id.*

¹³ See Dan De Luce, *U.K. Spy Chief Warns China's Use of Technology Threatens Global Security*, NBC NEWS (Oct. 10, 2022, 2:00 PM), <http://www.nbcnews.com/politics/national-security/uk-spy-chief-warns-chinas-use-technology-threatens-global-security-rcna51548> [<http://perma.cc/NJD9-ZD4R>]; *Fear Driving China's Tech Manipulation Poses Threat to All—UK Spy Chief*, REUTERS (Oct. 11, 2022, 3:22 AM), <http://www.reuters.com/world/china/fear-driving-chinas-tech-manipulation-poses-threat-all-uk-spy-chief-2022-10-10/> [<http://perma.cc/7EBZ-NKKE>].

¹⁴ Nikhilesh De, *In Wargaming Exercise, A Digital Yuan Neuters US Sanctions and North Korea Buys Nukes*, COINDESK (Nov. 20, 2019, 11:35 AM), <http://www.coindesk.com/policy/2019/11/20/in-wargaming-exercise-a-digital-yuan-neuters-us-sanctions-and-north-korea-buys-nukes/> [<http://perma.cc/KK8Z-DPZX>]. Participants included former U.S. Defense Secretary Ash Carter; former Commodity Futures Trading Commission Chairman Gary Gensler; former Under Secretary of State for Political Affairs Nicholas Burns; former Deputy Assistant Secretary of the Treasury Jennifer Fowler; former special assistant and Deputy National Security Advisor Meghan O'Sullivan; former Secretary of Defense Chief of Staff Eric Rosenbach; former Treasury Secretary Lawrence Summers; former Ambassador to India Richard Verma; MIT's Digital Currency Initiative director Narula; and Belfer Center executive director Aditi Kumar. *Id.*

status as the world's reserve currency,"¹⁵ is coordinating actions among multiple government departments to better understand the operation and implications of the digital yuan.

This Article makes three primary points. First, digital currency issued by central banks ("CBDC") is likely to disrupt the fundamentals of the international monetary system the way Amazon disrupted conventional retailing and Airbnb disrupted the hotel industry. CBDC, like the digital yuan to be issued by the Central Bank of China ("CBOC"), is transforming our very understanding of money itself and is completely different from private digital currencies, or cryptocurrencies such as Bitcoin, because the latter exists outside the global financial system and is not officially considered legal tender.¹⁶ Second, China's digital yuan is likely to pose a significant challenge to the current dollar-dominated monetary order.¹⁷ It is through this hegemonic order, after all, that the United States has been able to use the dollar to sanction countries it disfavors and, in the process, disrupt the financial systems—even of its allies who object to American unilateral use of dollar sanctions. The fact that "an authoritarian state and U.S. rival has taken the lead to introduce a national digital currency is propelling what was once a wonky topic for cryptocurrency theorists into a point of anxiety in Washington."¹⁸ And third, the digital yuan serves not only China's external objective of international digitalization, but also its internal objective of "digital authoritarianism."¹⁹

In other words, China's issuance of a digital yuan serves both its international goal of a greater role for the yuan in its quest to challenge the dollar-dominated order and its domestic goal of greater state control over private money.²⁰ For China, the digital yuan is more than a medium of exchange. It is also a block against

¹⁵ Sebastian Sinclair, *Biden Administration Concerned over Long-Term Effects of Digital Yuan: Report*, COINDESK (Sept. 14, 2021, 5:38 PM), <http://www.coindesk.com/markets/2021/04/12/biden-administration-concerned-over-long-term-effects-of-digital-yuan-report/> [<http://perma.cc/B4R8-VNNW>].

¹⁶ See Areddy, *supra* note 2.

¹⁷ David Marcus, head of Calibra, Facebook's blockchain division, believed that China's digital yuan project is not rooted purely in domestic concerns: "I think their goal is not domestic. It's really broad and it has the objective of rewiring the financial networks of a lot of countries with digital assets that they control. I think you'll see a lot of projects that will have a more disruptive mindset." Miranda Wood, *David Marcus, Mark Carney, Infosys Founder Discuss Stablecoins at IMF*, LEDGERINSIGHTS (Oct. 16, 2019), <http://www.ledgerinsights.com/marcus-carney-discuss-stablecoins-imf/> [<http://perma.cc/M4AD-ZSMP>].

¹⁸ Areddy, *supra* note 2.

¹⁹ See FANUSIE & JIN, *supra* note 6, at 1–2.

²⁰ *Id.*

foreign domination, both in the form of dollar dominance and dollar weaponization by the U.S. government, as well as “a bulwark against the potential encroachment of foreign digital currencies.”²¹ Among governments, China has taken the lead in establishing its own digital currency as a counter to the private cryptocurrencies trespassing into the traditional domain of sovereigns. Indeed, the year 2022 was the year users in twenty-three pilot cities in China could freely download the digital yuan app for IOS and Android from Chinese app stores, allowing them to pay for goods and services with the digital yuan.²² WeChat, with more than 1.2 billion users, has also announced it would allow its users to select the digital yuan as a payment option, and Alibaba as well plans to incorporate the digital yuan into its ecosystem.²³ Despite the appearance of harmony and coexistence between the private versus state’s payment system, for the Chinese government, the establishment of the digital yuan is not a technocratic or technological project. It is rather a quest for domestic control, both to reign in the increasingly powerful private fintech²⁴ industry and to institute “mass surveillance over the Chinese population.”²⁵ In a report issued by the Centre for a New American Security, a think tank based in Washington, D.C.,²⁶ Yaya Fanusie and Emily Jin wrote, “[t]he digital renminbi is likely to be a boon for [Chinese Communist Party] surveillance in the economy and for government interference in the lives of Chinese citizens.”²⁷

Part I of this Article examines the reasons behind mounting dissatisfaction with the dollar-based regime. The dollar is not just the currency of the United States; it is also an international currency. As John Connally, the Treasury Secretary during the Nixon Administration said, “the dollar is our currency, but it’s

²¹ See Kyng & Yu, *supra* note 1. Mu Changchun, head of the central bank’s Digital Currency Research Institute, argued in 2020 that a digital yuan would be needed to counter Facebook’s proposed Libra and keep it from “encroaching on China’s monetary system.” See *id.* Also a director at the PBOC, he stated that Facebook’s announcement of Libra “shocked the central bank[s] around the world.” Wood, *China’s Digital Bank*, *supra* note 9.

²² Arendse Huld, *China Launches Digital Yuan App — All You Need to Know*, CHINA BRIEFING (Sept. 22, 2022), <http://www.china-briefing.com/news/china-launches-digital-yuan-app-what-you-need-to-know> [<http://perma.cc/JVT2-WEH6>].

²³ *Id.*

²⁴ “Fintech is a portmanteau for ‘financial technology.’ It’s a catch-all term for technology used to augment, streamline, digitize or disrupt traditional financial services.” Stephanie Walden, *What is Fintech?*, FORBES (July 25, 2022, 3:33 AM), <http://www.forbes.com/advisor/banking/what-is-fintech/> [<http://perma.cc/74WN-23L2>].

²⁵ See Kyng & Yu, *supra* note 1.

²⁶ FANUSIE & JIN, *supra* note 6.

²⁷ Kyng & Yu, *supra* note 1; see also FANUSIE & JIN, *supra* note 6, at 11.

your problem.”²⁸ Section A of Part I shows that built-in tensions and paradoxes inherent in a system where dollar hegemony reigns have resulted in a distorted financial system that is dissatisfactory to many countries. As a result, these countries believe the system is not sustainable because the distortions have caused negative externalities that are detrimental to their economies.

Section B looks beyond dissatisfaction with the *inherent* asymmetries arising out of a system where the money of one country, the United States, also serves as the international reserve currency of the world. Section B examines how the United States has *strategically* leveraged these inherent asymmetries for its own ends and how other countries perceive American exploitation as mismanagement of its dollar stewardship. China and even certain European allies, for example, charge that the United States has overused the dollar as an international economic weapon, particularly in its extraterritorial sanctions regime. Section B focuses on the dollar-based sanctions regime against Iran for two reasons: first, because it provides a blueprint for subsequent dollar sanctions such as those currently imposed against Russia; and second, because it swept many Chinese companies into its orbit. Even as globalization has been touted as creating positive linkages among countries in the international economic system, it has also made many countries susceptible to punitive financial sanctions by the United States because of America’s dollar privilege.

Part II shows that the onset of digital currencies has created new and unique opportunities for countries like China to leverage for their own benefit as a counter to dollar dominance. The issue is not whether the dollar will be replaced by the yuan or another currency, or whether this possibility is imminent. That would be too narrow a frame through which to understand current monetary events. The issue is that China is using the digital yuan and its DCEP project to pursue “global dominance in financial technology”²⁹ and “counter U.S. financial influence around the globe.”³⁰ China’s

²⁸ Benjamin Purvis, *Why the Strong Dollar Creates Headaches Globally*, WASH. POST (Dec. 1, 2022, 8:07 AM), http://www.washingtonpost.com/business/why-the-strong-dollar-creates-headaches-globally/2022/12/01/ca16871c-7161-11ed-867c-8ec695e4afcd_story.html [<http://perma.cc/NE8E-GHK4>].

²⁹ See FANUSIE & JIN, *supra* note 6, at 2; see also *Fintech Will Be the Commanding Heights of Global Financial Competition in Future: PBOC Vice-Governor Fan Yifei*, CHINA BANKING NEWS (Nov. 29, 2019), <http://www.chinabankingnews.com/2019/11/29/fintech-will-be-the-commanding-heights-of-global-financial-competition-in-future-pboc-vice-governor-fan-yifei/> [<http://perma.cc/CX78-FQKV>].

³⁰ See FANUSIE & JIN, *supra* note 6, at 2.

“international aim is long term and more aspirational, driven by Beijing’s sense that progress in digital currency is a critical next stage of geopolitical technology competition.”³¹

When Bitcoin first launched in 2009, most governments, except China, were not tuned in to its potential significance.³² But Zhou Xiaochuan, China’s top central banker from 2002 to 2018, has said that he found Bitcoin both dazzling and frightening; as early as 2014, he commissioned a formal study to explore the possibility of a state-issued digitized yuan, starting a project that culminated in the Chinese government’s launching of trials in 2020.³³ Mu Changdu, who oversees the digitalization project at the PBOC declared, “[i]n order to protect our currency sovereignty and legal currency status, we have to plan ahead.”³⁴

Part II begins with an explanation of the apparatus and organization needed to digitalize money and facilitate its interface with the existing banking framework. Part II then examines how China views a digital yuan as a unique opportunity to challenge the dollar’s status as top dog currency. In fact, this objective is projected quite explicitly in one of the government’s marketing projects—an English-language animation circulated by the government’s top broadcaster showing a man in an American flag shirt knocked out by a golden coin representing a digital yuan.³⁵ China’s state media issued a video with this voiceover: “This is one of the building blocks of China’s move toward world market status and greater involvement in setting the framework of the global economy.”³⁶

Part II explores another reason behind China’s enthusiastic endorsement of a digital yuan which I am calling “digitalization with Chinese characteristics.” The term “socialism with Chinese characteristics” was popularized by Deng Xiaoping in the 1980s, who nudged China away from the central plan towards the market, including via foreign investment, to spur economic growth while also insisting, to placate Communist hardliners, that market economics would not be inconsistent with socialist principles.³⁷ Socialism with Chinese characteristics is Marxism

³¹ *Id.*

³² *Areddy, supra* note 2.

³³ *Id.*

³⁴ *Id.*

³⁵ *See id.*

³⁶ *Id.*

³⁷ *See, e.g.,* Lan Cao, *The Cat that Catches Mice: China’s Challenge to the Dominant Privatization Model*, 21 BROOKLYN J. INT’L L. 97, 100 (1995) [hereinafter Cao, *The Cat that Catches Mice*].

adapted to Chinese conditions, shaped by an emphasis on pragmatism—hence Deng’s resort to a Chinese saying, “[i]t does not matter if it is a yellow cat or a black cat, as long as it catches mice,” to support “market socialism.”³⁸ In subsequent years, with the disintegration of the Soviet Union and the concomitant efforts by the former Soviet states to transition from central planning to market through privatization, China also embarked on its own version of privatization, but again, with a twist which could be referred to as “privatization with Chinese characteristics.”³⁹ While the former Soviet states privatized entities by converting state-owned enterprises (“SOE”) into private companies, that is, by selling SOE shares to private buyers,⁴⁰ China claimed to also have engaged in privatization, but it did so not to turn SOE shares into privately owned shares, but to sweep a growing parallel sector of private money, accumulated through market reform initiated during the Deng Xiao Ping era under state control.⁴¹

Part II will show that China again is pursuing state control of the private sector, this time, through its issuance of a digital yuan. Analysts attributed the rise in Bitcoin to Chinese investors who sold yuan and bought Bitcoin.⁴² The growing strength and appeal of private, decentralized cryptocurrencies such as Bitcoin, caused a great deal of consternation within the state apparatus.⁴³

Chinese authorities began shutting down the country’s bitcoin exchanges in 2017.⁴⁴ The move sent a shockwave through the virtual currency market, especially because China has been a hub for Bitcoin mining, with eighty percent of Bitcoin activity

³⁸ See *id.* at 108, 110.

³⁹ See Lan Cao, *Chinese Privatization: Between Plan and Market*, 63 LAW & CONTEMP. PROBS. 13, 17–24 (2000) [hereinafter Cao, *Chinese Privatization*].

⁴⁰ See *id.* at 18.

⁴¹ See *id.* at 43–44, 58.

⁴² See Arjun Kharpal, *Chinese Bitcoin Traders Still Wield “Enormous Influence” Despite Beijing’s 4-year Crypto Crackdown*, CNBC (May 25, 2021, 8:13 PM), <http://www.cnbc.com/2021/05/26/chinese-bitcoin-traders-wield-enormous-influence-despite-crackdown.html> [http://perma.cc/9YFM-MC6N].

⁴³ See Ahmet Faruk Aysan & Farrukh Nawaz Kayani, *China’s Transition to a Digital Currency: Does It Threaten Dollarization?*, 2 ASIA & THE GLOB. ECON. (2022). The goals of private versus state cryptos are different: “[t]he underlying goal of cryptocurrency is to create a market for digital currency absent of state intervention.” *Id.* By contrast, “CBDCs are highly centralized, as they are monitored by the central bank, which maintains complete control over the supply of digital currency in the economy using contractionary and expansionary policies.” *Id.*

⁴⁴ See Aysan & Kyani, *supra* note 42.

taking place using the yuan.⁴⁵ But because holders of virtual currencies can bypass China's capital-controlled banking system, they pose a risk to the government's ability to maintain a grip on the yuan. Even as different countries wrestled with Bitcoin's surge in value, China's growing concern centered mainly on "preventing capital from fleeing to digital currencies" and protecting government power.⁴⁶

The digital yuan, issued and managed by the central bank, allows the government to reassert control over money. At the same time, because it is programmable and trackable, it can be used to reinforce state surveillance and state control. Digitalization by the government removes one of the main appeals of cryptocurrencies—anonymity. It equips the state with new tools to monitor every aspect of the economy and the activities of its peoples, with implications for "surveillance, privacy, and anonymity."⁴⁷ As Martin Chorzepa of the Peterson Institute for International Economics in Washington, D.C., said, "[n]o government has a more ambitious and far-reaching plan to harness the power of data to change the way it governs than the Chinese government."⁴⁸

In sum, although it may not appear that the dollar's reign is threatened in any serious way, this Article argues that there are enough crevices and fissures in the dollar-dominated monetary system such that a challenge to the dollar's hegemony is likely and foreseeable. As Josh Lipsky, formerly of the International Monetary Fund ("IMF") and now a staffer at the Atlantic Council, recognized, "[a]nything that threatens the dollar is a national-security issue. This threatens the dollar over the long term."⁴⁹

⁴⁵ See Chao Deng & Paul Vigna, *China to Shut Bitcoin Exchanges*, WALL ST. J. (Sept. 11, 2017, 8:16 PM), <http://www.wsj.com/articles/china-to-shut-bitcoin-exchanges-sources-1505100862>.

⁴⁶ *Id.* China's central bank drafted instructions prohibiting Chinese platforms from providing virtual-currency trading services in a move designed to end commercial trading. *See id.*

⁴⁷ *Digital Yuan Gives China a New Tool to Strike Back at Critics*, BLOOMBERG (Apr. 20, 2021, 10:02 PM), <http://www.bloomberg.com/news/articles/2021-04-20/digital-yuan-gives-china-a-new-tool-to-strike-back-at-critics>.

⁴⁸ See Christina Larson, *Who Needs Democracy When You Have Data?*, MIT TECH. REV. (Aug. 20, 2018), <http://www.technologyreview.com/2018/08/20/240293/who-needs-democracy-when-you-have-data/> [<http://perma.cc/LF5N-WRC2>]. The government has used networked technology to harvest data about people and firms and to monitor citizens. *See infra* notes 249–250.

⁴⁹ Areddy, *supra* note 2.

I. DOLLAR HEGEMONY AND “EXORBITANT PRIVILEGE”

A. The Dollar and the International Economic System

Through various cycles, money has been reinvented in different ways,⁵⁰ culminating most recently in the establishment of the post-World War II international economic system at Bretton Woods, New Hampshire. Before Bretton Woods, although this is by no means uniform throughout history, the major economies, particularly the West, fixed their currencies to gold which did not require the establishment or management of any permanent international institution because all that was needed was convertibility rights of “tender notes (bank notes) in a defined amount of gold.”⁵¹

As each country fixed its currency to gold, no one country was in a privileged position, since the coin of the realm was gold, not any particular currency. However, a major downside of the Gold Standard was that it constrained the ability of states to increase their money supply because such supply was linked to the availability of relatively scarce gold reserves.⁵² This limit on the ability of states to actively manage their monetary policy was found to be problematic, especially during wartime.

The interwar years between World War I and II were turbulent economically, with different countries alternating between maintaining and severing their currencies from gold.⁵³ Bretton Woods’ objective was a return to stability, and it was agreed that the post-war financial system should be linked to gold, given “the extent to which gold was seen as a symbol of stability.”⁵⁴

⁵⁰ See generally Lan Cao, *Currency Wars and the Erosion of Dollar Hegemony*, 38 MICH. J. INT’L L. 57, 73–78 (2016) [hereinafter Cao, *Erosion of Dollar Hegemony*] (discussing the history of money).

⁵¹ GIOVANNI TRIA & ANGELO FEDERICO ARCELLI, TOWARDS A RENEWED BRETTON WOODS AGREEMENT 2 (2020); see also THOMAS COTTIER ET AL., INTERNATIONAL LAW IN FINANCIAL REGULATION AND MONETARY AFFAIRS 53 n. 1 (2012); Andreas F. Lowenfeld, *The International Monetary System: A Look Back Over Seven Decades*, 13 J. INT’L ECON. L. 575, 576 (2010).

During the Depression, to ensure the continued fixed exchange rate between gold and dollar and to ensure that private citizens would not hoard gold and dump dollars, President Franklin Delano Roosevelt issued Executive Order 6102, which not only banned private ownership of gold by U.S. citizens but also required U.S. persons, with few exceptions, to surrender their gold in exchange for paper money at the exchange rate of \$20.67 per ounce. JAMES RICKARDS, CURRENCY WARS, THE MAKING OF THE NEXT GLOBAL CRISIS 71 (2012) [hereinafter RICKARDS, CURRENCY WARS].

⁵² See *Pro and Con: Gold Standard*, Britannica, <http://www.britannica.com/story/pro-and-con-gold-standard#:~:text=A%20gold%20standard%20would%20reduce,and%20increase%20the%20national%20debt> [http://perma.cc/DZ4L-6VPC] (last visited Apr. 6, 2023).

⁵³ RICKARDS, CURRENCY WARS, *supra* note 51, at 60–90.

⁵⁴ KWASI KWARTENG, WAR AND GOLD: A FIVE-HUNDRED-YEAR HISTORY OF EMPIRES, ADVENTURES, AND DEBT 4 (2014).

As the dominant superpower after World War II, the United States, accounting for fifty percent of the world's Gross Domestic Product ("GDP"), became the dominant architect of the new post-war order.⁵⁵ The United States favored a return, albeit indirectly, to a Gold Standard, not based on gold, but on the U.S. dollar as the main international reserve currency.⁵⁶ International monetary exchange rates were fixed to the dollar, and the dollar was then fixed to gold at the price of \$35 dollars per ounce.⁵⁷ IMF members formed a money pool by contributing their currencies and gold, which the IMF could then, under strict rules, lend to countries in need.⁵⁸ The system was tied to gold, indirectly, via the dollar.

The dollar, thus, was essentially as good as gold, since it was backed by and convertible to gold upon demand. Gold had to be mined but the dollar only had to be printed. When the United States issues treasury bonds, the world buys them because the world desires dollar securities, trusting that the dollar will be stable and that the securities are backed by the full faith and credit of the United States.⁵⁹ Such high demand for dollar securities means the United States does not have to pay high interest rates on them, allowing Americans to have "access to a vast supply of credit and permit[s] the public to borrow at lower interest rates for homes and automobiles and the government to finance larger deficits longer and at lower interest rates."⁶⁰

As a result, the United States, unlike other countries, does not have to "worry about balance of payments crises as it can pay for imports in dollars the Federal Reserve can just print."⁶¹ This quintessential American capacity "to purchase foreign goods and companies using resources conjured out of thin air was the exorbitant privilege of which French Finance Minister Valery

⁵⁵ See TRIA & ARCELLI, *supra* note 51, at vii.

⁵⁶ Nick Lioudis, *What is the Gold Standard? Advantages, Disadvantages, and History*, INVESTOPEDIA (Mar. 4, 2022), <http://www.investopedia.com/ask/answers/09/gold-standard.asp> [<http://perma.cc/3P4K-EEYH>].

⁵⁷ *Id.*

⁵⁸ See J. KEITH HORSEFIELD, *THE INTERNATIONAL MONETARY FUND 1945-1965: TWENTY YEARS OF INTERNATIONAL MONETARY COOPERATION VOLUME 1: CHRONICLE 18-19* (1969).

⁵⁹ Shobhit Seth, *Why China Buys U.S. Debt With Treasury Bonds*, INVESTOPEDIA (Oct. 23, 2022), <http://www.investopedia.com/articles/investing/040115/reasons-why-china-buys-us-treasury-bonds> [<http://perma.cc/38KR-EJMA>].

⁶⁰ KISHORE MAHBUBANI, *THE GREAT CONVERGENCE: ASIA, THE WEST AND THE LOGIC OF ONE WORLD* 72 (2014).

⁶¹ Liam Halligan, *The Dollar's 70-year Dominance Is Coming to An End*, THE TELEGRAPH (July 19, 2014, 5:30 PM) [hereinafter Halligan, *The Dollar's Dominance*], <http://www.telegraph.co.uk/finance/comment/liamhalligan/10978178/The-dollars-70-year-dominance-is-coming-toan-end.html> [<http://perma.cc/Z826-PW5R>].

Giscard d'Estaing so vociferously complained.”⁶² The French indignantly pushed for a return to gold, which they viewed as “an indisputable monetary base, and one that does not bear the mark of any particular country.”⁶³ If the French demand had been met, it would have resulted in the United States having to pay its foreign debt, not in its own currency which it prints, but in gold.⁶⁴ The United States would not be able to continue running persistent and massive trade deficits because it would run out of gold, and U.S. consumers would also need to reduce their purchases of foreign goods.⁶⁵

From a normative standpoint, there is a built-in, systemic asymmetry when one country's national currency also serves as the world's international reserve currency, leading predictably to friction and policy disputes. As the economist Robert Triffin predicted and explained as early as the 1960s, the country whose currency functions as an international reserve currency is faced with a paradox.⁶⁶ While it derives an “exorbitant privilege”⁶⁷ from this unique position, it must also be willing to supply the world with its currency to fulfill the world's economic needs, usually by running a trade deficit—that is, by importing foreign goods and services and paying in its own national currency, which provides the foreign countries with the dollar they need.⁶⁸ To maintain the Bretton Woods arrangement, the United States had to support a balance of payments current account⁶⁹ deficit to provide international liquidity for the conversion of U.S. dollars into gold, upon demand. The outflow of U.S. dollars from trade is also exacerbated by an outflow due to other reasons, such as the Marshall Plan to rebuild Europe and support for U.S. military bases established abroad.⁷⁰

⁶² BARRY EICHENGREEN, *EXORBITANT PRIVILEGE* 40 (2011).

⁶³ RICKARDS, *CURRENCY WARS*, *supra* note 51, at 82.

⁶⁴ See PAUL R. VIOTTI, *THE DOLLAR AND NATIONAL SECURITY: THE MONETARY COMPONENT OF HARD POWER* 15 (2014).

⁶⁵ See KWARTENG, *supra* note 54, at 211.

⁶⁶ Tim Smith, *How the Triffin Dilemma Affects Currencies*, INVESTOPEDIA (Sept. 15, 2022), <http://www.investopedia.com/financial-edge/1011/how-the-triffin-dilemma-affects-currencies.aspx> [<http://perma.cc/ZDV6-5V2S>].

⁶⁷ EICHENGREEN, *supra* note 62, at 40.

⁶⁸ See Smith, *supra* note 66.

⁶⁹ Balance of payments of a country is the difference between money flowing into the country during a period of time versus the outflow of money to the world as a result of financial transactions made by individuals, firms, as well as government bodies. See Reem Heikal, *What Is the Balance of Payments?*, INVESTOPEDIA (Apr. 3, 2022), <http://www.investopedia.com/insights/what-is-the-balance-of-payments> [<http://perma.cc/K44A-D8K8>]. A country's current account records the value of imports and exports of goods and services as well as international transfers of capital. See *id.*

⁷⁰ See Smith, *supra* note 66.

In the end, the U.S. dollar in circulation outside the United States exceeded the amount of gold the United States itself held in reserve, making the Gold Standard indirectly anchored to the U.S. dollar unsustainable in the long run. Foreign governments also sought to exchange dollars they held for physical gold, depleting U.S. gold reserves.

In August 1971, President Richard Nixon shocked the world by announcing that dollars could no longer be exchanged for gold, closing the “gold window.”⁷¹ The end of the Bretton Woods era meant that the dollar was no longer tied to gold; the United States would no longer intervene in the market to fix the par value of gold to the dollar.⁷² In essence, the dollar became nothing but paper currency unbacked by something of extrinsic value. Nonetheless, the dollar remained the world’s central currency, a status sealed by a deal struck between the United States and Saudi Arabia in which oil would be traded exclusively in U.S. dollars. Indeed, “the United States has guaranteed Saudi Arabia’s security in exchange for Saudi support for the dollar as the sole medium of exchange for energy exports”⁷³

Because every country still needed oil, every country still needed to accumulate dollars even when it was no longer anchored to gold. It is primarily through the Saudi deal “that the dollar came to occupy a genuinely central role in world commodities trade,”⁷⁴ allowing it to pay higher OPEC (Organization of the Petroleum Exporting Countries) cartel prices for oil in its own currency whereas other countries had to buy dollars to make oil payments which in turn meant they had to accumulate dollar reserves.

Dollar supremacy, however, became increasingly problematic in an increasingly multi-polar world. The international economic system lurched from crisis to crisis;⁷⁵ but for the most part, the

⁷¹ Will Kenton, *What is Nixon Shock? Definition, What Happened, and Aftereffects*, INVESTOPEDIA (Aug. 30, 2022), <http://www.investopedia.com/terms/n/nixon-shock.asp> [<http://perma.cc/Y97G-5XSL>].

⁷² See RICKARDS, CURRENCY WARS, *supra* note 51, at 86.

⁷³ JAMES RICKARDS, THE DEATH OF MONEY 156 (2014) [hereinafter RICKARDS, DEATH OF MONEY].

⁷⁴ John A. Mathews & Mark Selden, *China: The Emergence of the Petro Yuan and the Challenge to US Dollar Hegemony*, 16 ASIA PACIFIC J. 1, 6 (2018), <http://apjif.org/-Mark-Selden—John-A—Mathews/5218/article.pdf> [<http://perma.cc/4QB9-SDP9>].

⁷⁵ There were multiple currency crises that were not dollar-related—for example, the 1991 sterling crisis, the 1994 Mexico peso crisis, and the 1997 East Asia-Russia crisis. See generally Cao, *Erosion of Dollar Hegemony*, *supra* note 50. These crises actually had the effect of strengthening the dollar because it was viewed all the more as a safe haven in a world of monetary turbulence. See RICKARDS, CURRENCY WARS, *supra* note 51, at 96–97; see generally Cao, *Erosion of Dollar Hegemony*, *supra* note 50.

dollar remains strong—until the next crisis. The financial crisis of 2007-2008 revealed deep fractures in the system generally and the monetary relationship between China and the United States particularly. Zhou Xiaochuan, the governor of the PBOC specifically mentioned the Triffin dilemma as one of the root causes of international monetary disruptions:

Issuing countries of reserve currencies are constantly confronted with the dilemma between achieving their domestic monetary policy goals and meeting other countries' demand for reserve currencies. On the one hand, the monetary authorities cannot simply focus on domestic goals without carrying out their international responsibilities; on the other hand, they cannot pursue different domestic and international objectives at the same time.⁷⁶

Governor Zhou has advocated in favor of “[t]he reestablishment of a new and widely accepted reserve currency with a stable valuation benchmark . . . [that is], the creation of an international currency unit, based on the Keynesian proposal.”⁷⁷

Given the Triffin Dilemma and China's export-oriented strategy, it was predictable that the yuan and the dollar would be on a collision course and that China would spearhead the campaign to destabilize the dollar system. After the Tiananmen Square crisis, the government focused on export-oriented economic growth, and consequently, political stability.⁷⁸ To encourage the world to buy China's exports by making their products cheaper, the Chinese government kept the yuan deliberately devalued, using six rounds of devaluations over a ten-year period.⁷⁹

The devalued yuan created a vicious cycle for U.S. monetary policy as well. In 2002, then Fed Chairman Alan Greenspan responded by lowering U.S. interest rates, adopting a 4.75 % cut from July 2000 to July 2002, to accomplish several objectives, such as addressing the tech bubble burst but also counteracting China's monetary policy.⁸⁰ A devalued yuan meant cheap Chinese exports and consequently falling prices, which could result in persistent deflation—as businesses and consumers wait for prices to fall even

⁷⁶ Zhou Xiaochuan, *Reform the International Monetary System*, BANK FOR INT'L SETTLEMENTS 1 (Mar. 23, 2009), <http://www.bis.org/review/r090402c.pdf> [<http://perma.cc/S6AK-YEQV>].

⁷⁷ *Id.* at 2.

⁷⁸ See RICKARDS, CURRENCY WARS, *supra* note 51, at 102–03.

⁷⁹ See *id.* at 101.

⁸⁰ See *id.* at 103–04.

lower before committing to a transaction.⁸¹ The Fed kept interest rates in the United States low to ward off deflation. Predictably, a policy of sustained low interest rates meant that even marginal borrowers with a weak credit record would be able to borrow while institutional investors who need a higher rate of return and higher yield would venture in search of higher risk instruments besides money market and U.S. government securities. The end result: subprime residential and commercial loans that ultimately borrowers could not carry, leading to the 2008 financial crisis and housing bubble in the United States.⁸²

However, the U.S. strategy of low interest rates, coupled with printing dollars to create new money and increase the money supply, also had global effect and contributed to the financial crisis in China and elsewhere. To focus on China as an example of the increasingly dysfunctional and problematic monetary relationship between the dollar and the yuan: the yuan has been pegged to the dollar until 2006 when China permitted it to float within a narrow margin centered around a fixed base rate determined by a basket of world currencies.⁸³ The PBOC control of the yuan in international settlement means, for example, that when a Chinese exporter is paid in dollars, the exporter must hand the dollars over to the PBOC in exchange for yuan at the official pegged rate. Furthermore, in order to keep the yuan devalued vis-à-vis the dollar, and conversely, the dollar overvalued vis-à-vis the yuan, the PBOC must fan further demand for dollars by purchasing dollars.⁸⁴ To preserve the dollar-yuan peg, dollar accumulation also meant that China had to print more yuan which it would use to buy dollars. “In effect, China had outsourced its monetary policy to the Fed, and as the Fed printed more, the PBOC also printed more in order to maintain the pegged exchange rate.”⁸⁵

⁸¹ See Heather Stewart, *China's Currency Devaluation Could Spark "Tidal Wave of Deflation,"* THE GUARDIAN (Aug. 12, 2015), <http://www.theguardian.com/business/2015/aug/12/chinas-currency-devaluation-could-spark-tidal-wave-of-deflation> [<http://perma.cc/28Z2-H22V>].

⁸² See *id.*

⁸³ China recognizes the disadvantages of pegging the yuan to the dollar. In January 2016, Fang Xinghai, a senior economic adviser to the Chinese leadership, said the government should “manage the yuan according to its performance against a basket of global currencies, as opposed to just setting it against the U.S. dollar.” Lingling Wei & Jon Hilsenrath, *China Trying to Allay Global Concerns About Its Currency Regime*, WALL ST. J. (Jan. 21, 2016), <http://www.wsj.com/articles/china-serious-about-move-to-unpeg-yuan-from-yuan-from-u-s-dollar-says-official-1453372857> [<http://perma.cc/53ZE-J7MY>].

⁸⁴ See WAYNE M. MORRISON & MARC LABONTE, CONG. RSCH. SERV., RL34314, CHINA'S HOLDINGS OF U.S. SECURITIES: IMPLICATIONS FOR THE U.S. ECONOMY 1 (2008). Note that the RMB is also known as the yuan.

⁸⁵ RICKARDS, CURRENCY WARS, *supra* note 51, at 106.

As an example of how U.S. dollar policy affects the world, when the United States was faced with the 2008 financial crisis, it pursued a strategy dubbed the “secret weapon”—quantitative easing or QE.⁸⁶ The Fed could have cut interest rates to lower the price of money available to consumers⁸⁷ to spur spending as a counter to the financial crisis; but instead it decided to increase the supply of money “by going into the financial markets to buy assets and . . . [creating] new money to pay for them.”⁸⁸ QE is the preferred strategy if interest rates are already very low and there is not much room to make them lower.⁸⁹ Central banks, such as the Fed, create money electronically, the equivalent of “printing money” although no new physical notes need to be produced.⁹⁰ Pursuant to QE, this newly created money is used to buy government and other securities.⁹¹ Given the high demand for such bonds, the price of the bonds will go up; when the prices of bonds go up because of high demand, interest rates on those bonds go down, since the bond issuer does not need to convince people to buy them by promising high interest rates, as demand for the bonds already exists. When interest rates go down, more people are able to borrow and spend money.⁹²

However, as explained further below, QE had a huge impact on other currencies, particularly the yuan. John Williams, President of the Federal Reserve Bank in San Francisco in 2011 explained:

When interest rates in the U.S. fall relative to rates in other countries, the dollar tends to decline as money flows to foreign markets with higher returns. One estimate is that a \$600 billion program like QE2

⁸⁶ *See id.* at 133.

⁸⁷ “Lower rates mean you get less interest on your savings, so it’s less attractive to save money than to spend it. And lower interest rates make it cheaper to borrow money, so it’s easier to buy a new house, or car, or expand your business.” Ben King, *What is Quantitative Easing And How Will It Affect You*, BBC NEWS (Nov. 5, 2020), <http://www.bbc.com/news/business-15198789> [<http://perma.cc/7VMW-UFJW>].

⁸⁸ Andrew Walker, *Has Quantitative Easing Worked in the U.S.?*, BBC NEWS (Oct. 30, 2014), <http://www.bbc.com/news/business-29778331> [<http://perma.cc/Q9SL-MY62>].

⁸⁹ Nathaniel Frentz et al., *How the Federal Reserve’s Quantitative Easing Affects the Federal Budget*, CONG. BUDGET OFFICE, NONPARTISAN ANALYSIS FOR THE U.S. CONG. (Sept. 2022), <http://www.cbo.gov/publication/58457#:~:text=Historically%2C%20the%20Federal%20Reserve%20has,increasing%20liquidity%20in%20financial%20markets> [<http://perma.cc/A7EL-JPLG>] (“Historically, the Federal Reserve has used QE when it has already lowered interest rates to near zero and additional monetary stimulus is needed. QE provides that additional stimulus by reducing long-term interest rates and increasing liquidity in financial markets.”).

⁹⁰ *See id.*

⁹¹ *See* Investopedia Team, *What is Quantitative Easing (QE), and How Does It Work?*, (Aug. 8, 2022), <http://www.investopedia.com/terms/q/quantitative-easing.asp> [<http://perma.cc/JK3L-AVMV>].

⁹² *See id.*

causes the dollar to fall by roughly 3 or 4% That helps stimulate the U.S. economy by making American goods more competitive at home and abroad.⁹³

U.S. exports increased.⁹⁴ Once QE put more dollars into circulation, the value of the dollar depreciates. Its status as the world's reserve currency means that many products, especially commodities, are priced in dollars. When the dollar goes down, the price of such products goes up (because it takes more dollars to buy them).⁹⁵ China and other countries that depend on purchasing raw materials to make for exports are faced with a steep rise in manufacturing costs.⁹⁶ China's trade minister, Chen Deming, said, "[u]ncontrolled printing of dollars and rising international prices for commodities are causing an imported inflationary 'shock' for China and are a key factor behind increasing uncertainty."⁹⁷

Through QE, the United States got the exact result it wanted. The United States didn't get a devalued yuan as it wished, but it was able to export inflation to China.⁹⁸ More dollars flowed into China, causing the Chinese to have to recalibrate the yuan to U.S./yuan peg, as already observed. Chinese revaluation of the yuan and U.S.-exported inflation increased the costs of Chinese exports, which meant U.S. exports became relatively more competitive.⁹⁹

U.S. QE policy ensured low interest rates in the United States and elsewhere. The Brazilian Finance Minister, Guido Mantega, called this combustible situation of commodity inflation a "currency war" launched by the United States, remarking that "Brazil was stuck between the rock of currency appreciation and the hard place of inflation."¹⁰⁰ Inflation, after all, was one of the major sparks for the 1989 Tiananmen Square

⁹³ John C. Williams, *The Federal Reserve's Unconventional Policies*, FRBSF ECON. LETTER (Nov. 13, 2012), <http://www.frbsf.org/economic-research/publications/economic-letter/2012/november/federal-reserve-unconventional-policies> [<http://perma.cc/TF7Q-HGTC>].

⁹⁴ *U.S. Exports 1970-2023*, MACROTRENDS, <http://www.macrotrends.net/countries/USA/united-states/exports> [<http://perma.cc/UET4-RATV>] (noting that U.S. exports increased from 2011 to 2012).

⁹⁵ Chuck Kowalski, *How the Dollar Impacts Commodity Prices*, THE BALANCE, <http://www.thebalancemoney.com/how-the-dollar-impacts-commodity-prices-809294#:~:text=Historically%2C%20the%20prices%20of%20commodities,of%20commodities%20generally%20move%20higher> [<http://perma.cc/Q5AB-6PTB>] (last updated Dec. 29, 2021).

⁹⁶ Ben Baden, *Why China Has a Point About Quantitative Easing*, U.S. NEWS (Oct. 29, 2010), <http://money.usnews.com/money/business-economy/articles/2010/10/29/why-china-has-a-point-about-quantitative-easing> [<http://perma.cc/NT8D-VCA8>].

⁹⁷ *Id.*

⁹⁸ For the United States, however, despite an oversupply of newly created money, inflation is contained because the United States gets cheap imports from trade. See RICKARDS, DEATH OF MONEY, *supra* note 73, at 75.

⁹⁹ RICKARDS, CURRENCY WARS, *supra* note 51, at 135–36.

¹⁰⁰ *Id.* at 123.

protests.¹⁰¹ Dollar inflows into emerging economies in search of higher yields caused chaos in countries such as South Korea, Brazil, Indonesia, Thailand, Vietnam, and elsewhere.¹⁰² There may be many reasons behind the rise in commodity prices in many countries, and in the Middle East, desertification or drought is certainly one reason; but commentators have noted the connection between QE by the United States and food prices rising in many parts of the world, triggering riots and revolutions like the Arab Spring.¹⁰³ The Middle East and North Africa, which depend heavily on imported food, saw food prices rising 37% in Egypt,¹⁰⁴ and 59% in Jordan and Syria.¹⁰⁵ It was not surprising then that “[t]he civil unrest, riots and insurrection that erupted in Tunisia in early 2011 and quickly spread to Egypt, Jordan, Yemen, Morocco, Libya and beyond were as much a reaction to rising food and energy prices and lower standards of living as they were to dictatorships and lack of democracy.”¹⁰⁶ It is certainly no coincidence that the person who catalyzed the Arab Spring protests by self-immolation, Mohamad Bouazizi, was a food vendor.¹⁰⁷ With China clinging on to its tried-and-true export-oriented growth model through the deliberate devaluation of the yuan, and with the United States insistent that it will “inflate away China’s export cost advantage,”¹⁰⁸ inflation was exported to many other countries besides China.

And so, the familiar story continues. In a system in which one country can merely print money while other countries have to produce and export in order to gain access to the first country’s

¹⁰¹ See Simon Constable, *Why China’s Leaders Should Start Freaking Over Pork Prices*, FORBES (Mar. 14, 2017), <http://www.forbes.com/sites/simonconstable/2017/03/14/why-chinas-leaders-should-start-freaking-over-pork-prices/?sh=4e1f1d7c6007> [<http://perma.cc/UZA3-K6T9>] (discussing how inflation, especially rising food prices, sparked the Tiananmen Square uprising and also the Arab Spring).

¹⁰² RICKARDS, CURRENCY WARS, *supra* note 51, at 137.

¹⁰³ See Andrew Lilico, *How the Fed Triggered the Arab Spring Uprisings in Two Easy Graphs*, THE TELEGRAPH (May 4, 2011), <http://www.telegraph.co.uk/finance/economics/8492078/How-the-Fed-triggered-the-Arab-Spring-uprisings-in-two-easy-graphs.html>. [<http://perma.cc/J9FD-SFQY>].

¹⁰⁴ Rami Zurayk, *Use Your Loaf: Why Food Prices Were Crucial in the Arab Spring*, THE GUARDIAN (July 16, 2011), <http://www.theguardian.com/lifeandstyle/2011/jul/17/bread-food-arab-spring> [<http://perma.cc/7A3X-HWPX>].

¹⁰⁵ Radi Khasawnay, *Is the West to Blame for Middle East Unrest*, FIN. NEWS (Feb. 1, 2011), <http://www.fnlondon.com/articles/qe-blame-unrest-20110201> [<http://perma.cc/NV4J-HSCY>].

¹⁰⁶ RICKARDS, CURRENCY WARS, *supra* note 63 at 138.

¹⁰⁷ Joe Sterling, *A Year Later, Bouazizi’s Legacy Still Burns*, CNN (Dec. 17, 2011), <http://www.cnn.com/2011/12/17/world/meast/arab-spring-one-year-later/index.html> [<http://perma.cc/2HHC-5U2J>].

¹⁰⁸ RICKARDS, CURRENCY WARS, *supra* note 51, at 138.

money because it is a world reserve currency, there is bound to be intense dissatisfaction. But this dissatisfaction is understood to emerge from the intrinsic structure of the system. The problem is compounded, however, when the top-dog country not only benefits from the system but leverages its currency as a weapon against others it wishes to isolate and ostracize.

B. Weaponizing the Dollar-based System

Given the dollar's unique and dominant status, the system spawned by dollar internationalization can and has been used as a weapon against countries the United States determines should be punished. The oversized role of the dollar in the international financial system has caused growing consternation from the beginning, not just with the Soviet bloc but also among the non-aligned and even American allies, all of whom feared dollar weaponization through sanctions or seizures.¹⁰⁹ Even before 9/11, the United States had engaged in dollar weaponization in varying degrees, ranging from seizing dollar reserves against specific countries, like Iran in the 1970s¹¹⁰ and freezing Libya's assets in the 1980s,¹¹¹ to more general measures designed to effectuate money-laundering, anticorruption and taxation policies extraterritorially.¹¹² But after 9/11, the use of the dollar as a weapon intensified; as President George W. Bush declared, the United States aimed to "starve the terrorists of funding"¹¹³ in a way only the United States, through its dollar hegemony, can.

This Section B examines two significant sanction regimes imposed by the United States against Iran and Russia, and how such dollar-based sanctions have accelerated global, particularly Chinese, dissatisfaction with dollar dominance. Section B uses Iran as a study of American financial warfare because the Iranian experience became a model for subsequent actions such as those currently in place against Russia. Dollar weaponization has also been referred to as "dollar unilateralism"—using "the unique status of the U.S. dollar in global financial markets to pursue

¹⁰⁹ See, e.g., JULIUS SEN, LSE IDEAS, THE WEAPONISATION OF THE DOLLAR: POLICY OPTIONS FOR SMALL COUNTRIES (2019), <http://www.lse.ac.uk/ideas/Assets/Documents/updates/LSE-IDEAS-Weaponisation-Dollar.pdf> [<http://perma.cc/WP6X-SP2S>].

¹¹⁰ See Exec. Order No. 12170, 3 C.F.R. 457-58 (1979).

¹¹¹ See Exec. Order No. 12544, 3 C.F.R. 183 (1986).

¹¹² See RENA S. MILLER & LIANA W. ROSEN, CONG. RSCH. SERV., R44776, ANTI MONEY LAUNDERING: AN OVERVIEW FOR CONGRESS 11 (2017).

¹¹³ *President Bush Addresses the Nation*, WASH. POST (Sept. 20, 2001) http://www.washingtonpost.com/wp-srv/nation/specials/attacked/transcripts/bushaddress_092001.html [<http://perma.cc/89Q2-CDHY>].

policy goals independently, rather than work through traditional inter-governmental and multilateral channels.”¹¹⁴ Stuart Levey, the Treasury Department’s first under-secretary of terrorism and financial intelligence, recalled President George W. Bush’s concern that the United States did not have adequate leverage because conventional trade sanctions had been used against Iran.¹¹⁵ Levey’s solutions centered around restricting Iran’s access to the international financial system¹¹⁶ including accounts with links to Iran’s government held in European banks.¹¹⁷

Similarly, when President Obama was considering military action against Iranian nuclear installations, the administration turned instead to dollar warfare to strangle Iran’s economy.¹¹⁸ The steps the United States took to sanction Iran, according to Levey, paved the way for sanctions to be speedily launched against Russia in 2022. As Levey put it, “[o]n Iran, we were using machetes to cut down the path step by step, but now people are able to go down it very quickly. . . . Going after the central bank of a country like Russia is about as powerful a step as you can take in the category of financial sector sanctions.”¹¹⁹

The increasing weaponization of the dollar has caused some consternation even in the United States as expressed in 2016 by Jacob Lew, the Secretary of the Treasury:

We must be conscious of the risk that overuse of sanctions could undermine our leadership position within the global economy, and the effectiveness of the sanctions themselves. . . . [F]inancial transactions may begin to move outside of the United States entirely, which could threaten the central role of the U.S. financial system globally, not to mention the effectiveness of our sanctions in the future.¹²⁰

¹¹⁴ Suzanne Katzenstein, *Dollar Unilateralism: The New Frontline of National Security*, 90 IND. L.J. 293, 294–95 (2015).

¹¹⁵ See Valentina Pop, Sam Fleming & James Politi, *Weaponisation of Finance: How the West Unleashed ‘Shock and Awe’ on Russia*, Fin. Times (Apr. 6, 2022), <http://www.ft.com/content/5b397d6b-bde4-4a8c-b9a4-080485d6c64a> [<http://perma.cc/NA92-46KQ>].

¹¹⁶ See *id.*

¹¹⁷ See *id.*

¹¹⁸ See *id.*

¹¹⁹ *Id.*

¹²⁰ Jackie Calmes, *Lew Defends Sanctions but Cautions on Overuse*, N.Y. TIMES (Mar. 29, 2016), <http://www.nytimes.com/2016/03/30/us/politics/lew-defends-sanctions-but-cautionson-overuse.html> [<http://perma.cc/9L7U-58GJ>]; see also Adam Szubin, Acting Under Secretary, U.S. Dep’t of the Treasury, Remarks by Acting Under Secretary Adam Szubin at the Foundation for Defense of Democracies Annual Forum (Apr. 13, 2016), <http://home.treasury.gov/news/press-releases/j10419> [<http://perma.cc/AF8U-ZQLW>] (observing the need to “balance the cost and benefits of sanctions”).

Ironically, or perhaps not, this sentiment was echoed by a Chinese commentator, Ma Xin, who stated, “[a]s America increasingly utilizes financial sanctions and its financial power, it also increasingly encourages peripheral countries to ‘de-dollarize.’ This gives the internationalization of the yuan a strategic opening.”¹²¹

One of the most comprehensive sanctions regimes was imposed upon Iran through a succession of Security Council Resolutions. On December 23, 2006, the Resolution 1737 was approved, requiring member states to use financial sanctions such as asset freezes and financial service prohibitions against designated entities and individuals.¹²² The list of sanctioned entities and individuals was further expanded through Resolution 1803, which was passed on March 3, 2008.¹²³

The United States, however, also imposed unilateral secondary sanctions against foreign companies, especially those that transacted with Iran’s energy sector.¹²⁴ For example, it blocked the Central Bank of Iran from accessing the U.S. financial market.¹²⁵ Because the United States had minimal investment in Iran since the hostage crisis of 1979, U.S. government prohibition alone was not sufficient to isolate Iran and therefore, the United States needed to limit non-U.S. financial institutions as well from transacting with Iranian banks.¹²⁶ For example, under the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 (“CISADA”), signed into law by President Obama on July 1, 2010,¹²⁷ the Treasury Department was empowered to terminate the accounts of non-U.S. financial institutions that did certain kinds of businesses

¹²¹ MA XIN, FINANCIAL SANCTIONS: AMERICA’S NEW TYPE OF GLOBAL ASYMMETRIC POWER 189 (2013) (cited in Cameron Rotblat, Comment, *Weaponing the Plumbing: Dollar Diplomacy, Yuan Internationalization, and the Future of Financial Sanctions*, 12 UCLA J. INT’L L. & FOREIGN AFF. 311, 312 (2017)).

¹²² S.C. Res. 1737 (Dec. 23, 2006).

¹²³ S.C. Res. 1803 (Mar. 3, 2008).

¹²⁴ Cameron Rotblat, Comment, *Weaponing the Plumbing: Dollar Diplomacy, Yuan Internationalization, and the Future of Financial Sanctions*, 12 UCLA J. INT’L L. & FOREIGN AFF. 311, 320 (2017).

¹²⁵ *Id.* at 321; see also Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act), Pub. L. No. 107-56, § 311, 116 Stat. 272, 298-304 (codified as amended at 31 U.S.C. §5318A).

¹²⁶ See JUAN C. ZARATE, TREASURY’S WAR: THE UNLEASHING OF A NEW ERA OF FINANCIAL SANCTIONS 290–316 (2013); see also Rotblat, *supra* note 124, at 321.

¹²⁷ The Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 (CISADA), Pub. L. No. 111-195, 124 Stat. 1312 (codified at 22 U.S.C. §§ 8501–51).

with Iran¹²⁸ as well as businesses with the Central Bank of Iran,¹²⁹ with an authorized escape valve—a provision allowing President Obama to grant 180-day exceptions for any entity that significantly reduced its Iranian crude oil purchases.¹³⁰

So powerful is the reach and scope of the U.S. dollar that even banks with no territorial presence in the United States hold dollar-denominated accounts at U.S. banks for their customers who need access to U.S. dollars.¹³¹ Because of the dollar's singular dominance, the United States could effectively launch secondary sanctions that are effective simply by threatening to sever any bank, U.S. or otherwise, from access to U.S. financial system if the bank at issue conducted business with Iranian banks. Forced between choosing access to Iranian banks or U.S. banks, non-U.S. financial institutions are likely to choose the latter.¹³²

Even more potent sanctions have been utilized—banning Iran from the international banking system, the Society for Worldwide Interbank Financial Telecommunication (“SWIFT”), altogether.¹³³ When SWIFT, concerned about its reputation for independence and neutrality, balked,¹³⁴ the Senate Banking Committee adopted a bill on February 2, 2012, granting the U.S. President authority to sanction SWIFT, created under Belgian law, if it provided services to certain Iranian banks. Subject to U.S. pressure, the European Union followed U.S. lead and ordered the Belgium-based organization that manages SWIFT, itself subject to EU laws, to prevent Iranian banks from using it.¹³⁵ This means Iranian banks

¹²⁸ *Id.*

¹²⁹ National Defense Authorization Act for Fiscal Year 2012, Pub. L. No. 112-81, 125 Stat. 1298, 1647 (2011) (“NDAA”). The NDAA for fiscal year 2013 also authorized unilateral sanctions against foreign banks that engaged in “significant financial” transactions with Iran’s energy, shipping, and shipbuilding sectors. National Defense Authorization Act for Fiscal Year 2013, Pub. L. No. 112-239, 126 Stat. 1632, 2007–08 (2012).

¹³⁰ National Defense Authorization Act for Fiscal Year 2012, Pub. L. No. 112-81, 125 Stat. 1298, 1648–49 (2011).

¹³¹ See ALAN WHEATLEY, *THE POWER OF CURRENCIES AND THE CURRENCIES OF POWER* 76 (2013).

¹³² See *Poor Correspondents*, *ECONOMIST* (June 14, 2014), <http://www.economist.com/news/fmance-and-economics/21604183-big-banks-are-cuttingcustomers-and-retreating-markets-fear> [<http://perma.cc/5X2G-7TQF>].

¹³³ Philip Blenkinsop, *Cross-Border Payment Body SWIFT Resists Iran Precedent*, *REUTERS* (Feb. 9, 2012, 6:42 AM), <http://uk.reuters.com/article/uk-iransanctions-swift-idUKTRE818IE920120209> [<http://perma.cc/S8QU-5MDN>].

¹³⁴ *See id.*

¹³⁵ See ORDE F. KITTRIE, *LAWFARE: LAW AS A WEAPON OF WAR* 90 (2016); Rotblat, *supra* note 124, at 323; Rachele Younglai & Roberta Rampton, *U.S. Pushes EU, SWIFT to Eject Iran Banks*, *REUTERS* (Feb. 15, 2012), <http://www.reuters.com/article/us-iran-usa-swift/u-s-pushes-eu-swift-to-eject-iran-banks-idUSTRE81F00I20120216> [<http://perma.cc/2MSB->

could not send or receive international electronic payments which in turn limits Iranian access to international currency.¹³⁶

Despite Chinese resistance to these types of secondary sanctions, even Chinese companies ultimately succumbed to U.S. pressure. It is important to note that China has an interest in engaging with Iran's oil industry, given the fact that Iran "lies at the crossroads of China's 'One Belt, One Road' project, which aims to invest more than \$1 trillion in infrastructure from railroads and ports to energy, in more than 60 countries spanning Europe, Africa and Asia."¹³⁷ Nonetheless, in 2010 and 2011, Chinese energy companies agreed to stop or delay work in Iran's energy sector to avoid U.S. sanctions.¹³⁸ In 2012, the United States increased pressure on China by implementing unilateral secondary sanctions against foreign energy companies and banks that had been authorized under CISADA,¹³⁹ preventing them access to the U.S. financial system.¹⁴⁰ A Chinese bank, the Bank of Kunlun, had to relinquish its international business outside Iran because it had difficulty accessing U.S. dollars; the United States had prohibited U.S. "financial institutions from opening or holding correspondent or payable-through accounts for the Chinese bank."¹⁴¹ China had to reduce Iranian oil imports in order to qualify for Presidential waivers as provided by NDAA.¹⁴²

VZGG]; *Compliance: Swift and Sanctions*, SWIFT, <http://www.swift.com/about-us/legal/compliance-0/swift-and-sanctions> [<http://perma.cc/L373-GZJD>].

¹³⁶ *Id.*

¹³⁷ Kate Duguid, *Iran Oil Sanctions Could Advance China's "Petro Yuan"*, REUTERS (May 10, 2018), <http://www.reuters.com/article/uk-iran-nuclear-china-oil/iran-oil-sanctions-could-advance-chinas-petro-yuan-idUSKBN1IB32H> [<http://perma.cc/UXN6-H2K9>].

¹³⁸ See Chen Aizhu & Chris Buckley, *Exclusive: China Curbs Iran Energy Work*, REUTERS (Sept. 2, 2011), <http://www.reuters.com/article/us-china-iran-usa-idUSTRE78112K20110902> [<http://perma.cc/A5U4-VZEX>]; see also *Oil Sanctions on Iran: Cracking Under Pressure?*, THE ECONOMIST 6 (2012), <http://www.ciaonet.org/attachments/26233/uploads> [<http://perma.cc/3J4Y-QSMR>].

¹³⁹ See *Three Companies Sanctioned Under the Amended Iran Sanctions Act*, U.S. DEPT. OF STATE (Jan. 12, 2012), <http://2009-2017.state.gov/r/pa/prs/ps/2012/01/180552.htm> [<http://perma.cc/G4A3-JJA7>]; see also *Treasury Sanctions Kunlun Bank in China and Elaf Bank in Iraq for Business with Designated Iranian Banks*, U.S. DEP'T OF THE TREASURY (July 31, 2012), <http://home.treasury.gov/news/press-releases/tg1661#:~:text=The%20financial%20institutions%20sanctioned%20today,against%20two%20dozen%20Iranian%20banks> [<http://perma.cc/GF4Q-RAN3>].

¹⁴⁰ *Treasury Sanctions Kunlun Bank in China and Elaf Bank in Iraq for Business with Designated Iranian Banks*, *supra* note 139.

¹⁴¹ Rotblat, *supra* note 124, at 327.

¹⁴² Rick Gladstone, *U.S. Exempts Singapore and China on Iran Oil*, N.Y. TIMES (June 28, 2012), <http://www.nytimes.com/2012/06/29/world/us-exempts-china-and-singapore-from-sanctions-on-iranian-oil.html> [<http://perma.cc/FN2Q-9RJG>]; Timothy Gardner, *U.S. Extends Iran Oil Sanctions Waivers to China, India, South Korea*, REUTERS (Nov. 29, 2013),

Thus, even as Iranian oil was boycotted by the EU and suffered from a dramatic drop in demand, creating an opportunity for China to buy it on the cheap and expand its petroleum reserve, China had no choice but to succumb to U.S. insistence on the maintenance of secondary sanctions against Iran.¹⁴³

The severe drop in Iranian oil exports was the major factor in the ability of the P5+1 countries (consisting of the United Nations Security Council five permanent members plus Germany) to corral Iran into signing the Joint Comprehensive Plan of Action (“JCPOA”) on July 14, 2015, to prevent Iran from developing nuclear weapons.¹⁴⁴ While China voted as a permanent member of the Security Council in favor of UN sanctions, the United States threatened unilateral secondary sanctions against China, preventing Chinese banks from accessing the U.S. financial system should any do business with Iran, even in areas not included in Security Council resolutions.¹⁴⁵ The dollar-based sanctions regime has further motivated China to make the yuan a more international currency.¹⁴⁶ Efforts by the United States and the European Union to cut Iran off from the SWIFT banking system¹⁴⁷ have also resulted in China’s creation of its own bank messaging system—the Cross-border Interbank Payment System (“CIPS”)—which allows international transfers of the yuan without having to rely on SWIFT.¹⁴⁸

<http://www.reuters.com/article/us-usa-iran-sanctions-india-exclusive/exclusive-amid-rising-trade-tensions-with-u-s-india-wants-to-extend-iran-oil-sanctions-waiver-sources-idUSKCN1QO0TAidUKBRE9AS0Q420131129> [<http://perma.cc/SQ7J-G4JT>]; *U.S. Grants China Six-Month Iran Oil Sanctions Reprieve*, BBC NEWS (June 29, 2012), <http://www.bbc.com/news/world-asia-china-18639255> [<http://perma.cc/67M9-XLDQ>].

¹⁴³ Gladstone, *supra* note 142.

¹⁴⁴ See Rotblat, *supra* note 124, at 312–13. The five permanent members of the United Nations Security Council are the United States, the United Kingdom, France, Russia, and China. See *id.* at 319.

¹⁴⁵ *Id.* at 313.

¹⁴⁶ ARTHUR KROEBER, CHINA’S GLOBAL CURRENCY: LEVER FOR FINANCIAL REFORM 7–9, 19 (Brookings-Tsinghua Ctr. for Pub. Pol’y 2013), <http://www.brookings.edu/wpcontent/uploads/2016/06/china-global-currency-financial-reform-kroeber.pdf>.

¹⁴⁷ The Society for Worldwide Interbank Financial Telecommunication (SWIFT) provides a global network for sending standardized messages between financial institutions in more than 200 countries and territories for making payments or settling trades. See *Swift History*, SWIFT, <http://www.swift.com/about-us/history> [<http://perma.cc/5VYN-DW29>] (last visited Feb. 13, 2023).

¹⁴⁸ See Barry Eichengreen, *Sanctions, SWIFT, and China’s Cross-Border Interbank Payments System*, CSIS (May 20, 2022), <http://www.csis.org/analysis/sanctions-swift-and-chinas-cross-border-interbank-payments-system> [<http://perma.cc/B7KA-GQC8>]; Gabriel Wildau, *China Launch of Renminbi Payments System Reflects Swift Spying Concerns*, FIN. TIMES (Oct. 8, 2015), <http://www.ft.com/content/84241292-66a1-11e5-a155-02b6f8af6a62>

Its Iran experience has hastened China's efforts to escape from the dollar's grip through the internationalization of its own currency, the yuan. Russia, China's largest oil supplier, along with Angola, China's third-largest oil supplier, already accepted yuan for payment; Venezuela, another large oil producer, has been in the yuan sphere since 2017.¹⁴⁹ China is negotiating with Saudi Arabia to pay for its oil in yuan, a move that could put a real dent in longstanding U.S.-Saudi understanding that oil is to be paid in dollars.¹⁵⁰ When President Trump withdrew the United States from the Iran nuclear deal, the door opened for China to use its leverage as the world's largest importer of crude oil to demand that Iranian oil exported to China be priced in yuan instead of dollars.¹⁵¹

Because oil is the most traded commodity in the world, even shifting a portion of the global oil trade from dollar to yuan is significant. In March 2018, China launched a "crude futures exchange that could become a yuan-denominated benchmark,"¹⁵² providing a platform for the first RMB-denominated futures contracts that foreigners can buy and sell directly¹⁵³ and overtaking even oil futures in Singapore and Dubai.¹⁵⁴

The "launch of the futures contract means that countries selling oil to China will be accumulating billions of Chinese yuan

[<http://perma.cc/5GUL-6MU9>]; *Russia May Use China's Payment Infrastructure Instead of SWIFT—VTB Bank Head*, TASS (Mar. 11, 2015), <http://tass.com/economy/782054> [<http://perma.cc/AVL3-4LAK>].

¹⁴⁹ See Mathews & Selden, *supra* note 74, at 22.

¹⁵⁰ See George Glover, *China Wants to Buy More Oil from Saudi Arabia*, MKT. INSIDERS (Dec. 9, 2022), <http://markets.businessinsider.com/news/commodities/dollar-dominance-dedollarization-china-saudi-arabia-oil-deal-crude-price-2022-12> [<http://perma.cc/TT4K-UBZA>].

¹⁵¹ See Duguid, *supra* note 137. For China, "[p]ricing imports in yuan would therefore spare China the cost of exchanging dollars, and would increase the use of the renminbi in global financial trade, which could ultimately hurt the dollar's international clout." See *id.*

¹⁵² See *id.*; accord Sri Jegarajah, *China Has Grand Ambitions to Dethrone the Dollar*, CNBC (Oct. 24, 2017), <http://www.cnbc.com/2017/10/24/petro-yuan-china-wants-to-dethrone-dollar-rmb-denominated-oil-contracts.html> [<http://perma.cc/R9VA-GQGZ>]. An oil futures contract is a contract for a future delivery of oil at a specified price, allowing the parties involved to hedge against possible price fluctuations in the future and thus provide market stability.

¹⁵³ See David Dollar & Samantha Gross, *China's Currency Displacing the Dollar in Global Oil Trade? Don't Count on It*, BROOKINGS (Apr. 19, 2018), <http://www.brookings.edu/blog/order-from-chaos/2018/04/19/chinas-currency-displacing-the-dollar-in-global-oil-trade-dont-count-on-it/> [<http://perma.cc/SF74-MZSB>].

China surpassed the United States to become the world's largest importer of crude oil in 2017, a clear motivation for creating a mechanism to price oil in RMB. Additionally, adding a benchmark that reflects the types of oil needed by Chinese refineries poses a clear business purpose. China's long-term goal is to increase the use of China's currency in global trade, not just in oil.

Id.

¹⁵⁴ See Mathews & Selden, *supra* note 74, at 1.

which they will then be looking to recycle back to China through purchases of Chinese goods and technologies or purchases of Chinese government bonds, thus strengthening the yuan as an international reserve currency.”¹⁵⁵ In other words, China is modeling itself after the United States, following in its footsteps, imitating the route taken by the latter in its quest to dollarize the international economy. As is the case with the recycling of petrodollars when oil is denominated in dollars, as China increasingly pays for its oil imports in its own currency, foreign suppliers will accumulate more yuan and will need to have more yuan-denominated accounts which they will use to buy Chinese goods and services, in the process bolstering Chinese capital markets and yuan internationalization.

Yuan-denominated trade is designed not necessarily to overthrow the dollar per se. For now, it is meant more “to promote not only Chinese economic growth and financial clout but also its geopolitical influence and soft power while serving as a means for countries to evade US sanctions.”¹⁵⁶

The same story is being played out in sanctions against Russia for its invasion of Ukraine on February 24, 2022.¹⁵⁷ The United States and its allies launched sanctions against Russia using, predictably, its dollar arsenal by restricting Russian payments in U.S. dollars and euros.¹⁵⁸ Some of the actions taken included freezing the assets of key Russian oligarchs; removing select Russian banks from the SWIFT messaging system to “ensure that these banks are disconnected from the international financial system;”¹⁵⁹ barring Russia from using the \$600 million it has in U.S. banks, restricting Russian ability to repay its international loans.¹⁶⁰ This was meant to ban Russia from making debt repayments owed to U.S. bondholders in order to push Russia into

¹⁵⁵ See *id.* at 5.

¹⁵⁶ See *id.* at 8.

¹⁵⁷ See Vladimir Putin, President of Russia, Address by the President of the Russian Federation (Feb. 24, 2022), <http://en.kremlin.ru/events/president/news/67843> [<http://perma.cc/XP9Q-QX3R>].

¹⁵⁸ European Commission, *Joint Statement on Further Restrictive Economic Measures*, EU (Feb. 26, 2022), http://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_22_1423 [<http://perma.cc/9JQC-H77X>].

¹⁵⁹ *Id.* This resulted in significant payment delays to the country for oil and gas exports. See *What Are the Sanctions on Russia and Are They Hurting Its Economy*, BBC (June 27, 2022), <http://www.bbc.com/news/world-europe-60125659> [<http://perma.cc/88B6-YRBP>]; see also *Sanctions Have Frozen Around \$300 Bln of Russian Reserves, FinMin Says*, REUTERS (Mar. 13, 2022, 4:30 AM), <http://www.reuters.com/article/ukraine-crisis-russia-reserves-idUSL5N2VG0BU> [<http://perma.cc/ZE2U-PX8B>].

¹⁶⁰ *What Are the Sanctions on Russia and Are They Hurting Its Economy?*, *supra* note 159.

default.¹⁶¹ Most significantly, Russia's central bank was blocked from accessing the \$630 billion (£470 billion) of reserves it has in foreign currencies.¹⁶² This amount is double what Russia had in its foreign currency reserve since its last invasion of Ukraine and annexation of Crimea in 2014.¹⁶³ This vast amount of reserve was viewed as "a war chest that would enable Russia to continue to buy things that could only be bought in foreign currency, even if customers overseas refused to trade with it and supply it with that currency. It was Russia's insurance policy."¹⁶⁴ Unfortunately for Russia, with most of it kept in banks in the West, Putin probably assumed that the international "financial system wouldn't be turned off – not to a nation of Russia's size."¹⁶⁵

Despite the fact that Russia had taken steps since its 2014 annexation of Crimea to decrease its holdings of dollar assets from its reserves by shifting to gold and other hard currencies, it is nonetheless undeniable that freezing its reserves "has undermined its ability to stabilize the ruble and recapitalize its sanctioned banks as they face the risk of bank runs."¹⁶⁶ As a result, the ruble has depreciated by 40% and without access to foreign currency to support it, the Russian central bank had no choice but to double its key interest rate from 9.5% to 20%.¹⁶⁷ Given severe hard currency shortages, Russia blocked hard currency outflow,

¹⁶¹ See Jeff Stein, *U.S. Pushes Russia Toward Default by Blocking Debt Payments*, WASH. POST (May 24, 2022), <http://www.washingtonpost.com/us-policy/2022/05/24/treasury-russia-debt-default/> [<http://perma.cc/NU3N-ZPGC>].

¹⁶² See sources cited *supra* note 159; Peter Martin, *Putin's Biggest Mistake of the Ukraine War? Trusting the Western Financial System*, THE CONVERSATION (Mar. 7, 2022), <http://theconversation.com/putins-biggest-mistake-of-the-ukraine-wartrusting-the-western-financial-system-178635> [<http://perma.cc/RX2T-TRSD>] ("And, much less expected, it froze the reserves of Russia's central bank stored in France, Germany, Italy, the United Kingdom, Canada, and the US – the hundreds of billions of savings legitimately placed in foreign banks for safekeeping.").

¹⁶³ Martin, *supra* note 162.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ Douglas W. Arner, Ross P. Buckley, Anton N. Didenko & Dirk A. Zetzsche, *Ukraine, Sanctions and Central Bank Digital Currencies: The Weaponization of Digital Finance and the End of Global Monetary Hegemony?*, 7 ASIAGLOBAL PAPERS 1, 43 (Jan. 2023); see also Nicholas Gordon, *Banks Are Stopping Putin from Tapping a \$630 Billion War Chest Russia Stockpiled Before Invading Ukraine*, FORTUNE (Mar. 2, 2022), <http://www.yahoo.com/video/banks-stopping-putin-tapping-630-070824734.html> [<http://perma.cc/5JSD-A6L7>].

¹⁶⁷ See Martin, *supra* note 162; Barbara Kollmeyer, *Russian Central Bank Lifts Interest Rates to 20% as Ruble Plunges Over Western Sanctions*, MARKETWATCH (Feb. 28, 2022), <http://www.marketwatch.com/story/russian-central-bank-lifts-interest-rates-to-20-as-ruble-plunges-over-western-sanctions-11646033022> [<http://perma.cc/PW3Z-H658>] ("An increase in the key rate will make it possible to ensure an increase in deposit rates to the levels necessary to compensate for the increased devaluation and inflation risks. This will help maintain financial and price stability and protect citizens' savings from depreciation.").

stopped servicing government debt owed to foreigners, and required Russian companies earning dollars to sell 80% of dollar earnings to the government in exchange for rubles.¹⁶⁸

As has been observed, sanctions against the Russian central bank likely “broke the bond of trust that makes a bank a bank. And while effective – Russia can’t get access to hundreds of billions of foreign dollars it has painstakingly built up to buy supplies and support the ruble on currency markets – it can only be done at this scale once.”¹⁶⁹ This is because a country like China will have taken note and will be taking actions to insulate itself as much as possible from being the next Russia or the next Iran. Given the track record of how the dollar has been used as a weapon, “anyone who keeps money in dollars [or euros, pounds, yen etc.] today can no longer be sure that the US [and the EU] will not steal their money.”¹⁷⁰

Indeed, as Russia’s war against Ukraine has dragged on, many European governments, including those of Poland, Lithuania, Latvia, and Slovakia have called for the seizure (not just freezing) of Russia’s currency reserves.¹⁷¹ There is debate within the U.S. government itself as to the legality of seizure, with Secretary of the Treasury Janet Yellen stating it would be illegal while others disagreed.¹⁷²

The decision to freeze the central bank’s foreign currency reserve was in effect tantamount to a decision “declaring financial war on Russia. . . . This is a very new kind of war—the weaponisation of the US dollar and other western currencies to punish their adversaries.”¹⁷³

¹⁶⁸ See Martin, *supra* note 162; Anna Hirtenstein, *Putin Imposes Capital Controls Including Restrictions on External Debt Payments*, WALL ST. J. (Feb. 28, 2022), <http://www.wsj.com/livecoverage/russia-ukraine-latest-news-2022-02-28/card/Kedzfom80kQt11B7xaRs> [<http://perma.cc/472X-Z7J2>].

¹⁶⁹ Martin, *supra* note 162.

¹⁷⁰ Arney et al., *supra* note 166, at 45.

¹⁷¹ Sam Fleming, James Shotter & Amy Kazmin, *EU Debates Tapping Sanctions—Hit Russian Assets to Pay for Rebuilding Ukraine*, FIN. TIMES (Apr. 26, 2022), <http://www.ft.com/content/91ffdd88-fa02-4ae2-931d-f47f042e9ed4> [<http://perma.cc/5G6P-VJN7>]; Sam Fleming, *EU Should Seize Russian Reserves to Rebuild Ukraine, Top Diplomat Says*, FIN. TIMES (May 8, 2022), <http://www.ft.com/content/82b0444f-889a-4f3d-8dbc-1d04162807f3> [<http://perma.cc/2LM9-JWTQ>].

¹⁷² See David Lawder, *Yellen: Not Legal for U.S. to Seize Russian Official Assets*, REUTERS (May 19, 2022), <http://www.reuters.com/world/yellen-not-legal-us-government-seize-russian-central-bank-assets-2022-05-18/> [<http://perma.cc/ACA7-VR88>]; Robert Litan, *Russia Can Be Made to Pay for Ukraine Damage Now*, BLOOMBERG (Mar. 16, 2022), <http://www.bloomberg.com/opinion/articles/2022-03-16/russia-can-be-made-to-pay-for-ukraine-damage-now?leadSource=verify%20wall> [<http://perma.cc/A2JA-ET8F>].

¹⁷³ Pop et al., *supra* note 116.

The Iranian model is being applied more or less against Russia, but the key difference is that it is the first time the dollar “weapon has been used against a major economy and the first time as part of a war.”¹⁷⁴ Although the dollar has been used as a financial weapon, it has been limited to specific objectives like blocking terrorists from accessing dollars or blocking Iran’s nuclear program.¹⁷⁵ In fact, it is the first time freezing currency reserves has been done to a G20 country and a member of the United Nations Security Council.¹⁷⁶

As President Joe Biden said, “These economic sanctions are a new kind of economic statecraft with the power to inflict damage that rivals military might.”¹⁷⁷ Moreover, because of allied unity against Russian aggression and because of the prior Iran experience, within seventy-two hours of intensive diplomacy, a plan was put together to not only sanction Russia’s central bank but also to do so in a way that would preempt any possible Russian countermeasures.¹⁷⁸ The allies ensured that Moscow would be unaware and caught “off-guard” so that it could not convert some of its reserves into other currencies.¹⁷⁹ According to U.S. Deputy Secretary of Treasury Wally Adeyemo, “We were in a place where we knew they really couldn’t find another convertible currency that they could use and try to subvert this.”¹⁸⁰ As observers noted, “[b]y all accounts, Russian officials were stunned at the speed at which they were frozen — a very different reaction from the one it faced after annexing

¹⁷⁴ *Id.*; see Laurence H. Tribe & Jeremy Lewin, *\$100 Billion. Russia’s Treasure in the U.S. Should Be Turned Against Putin.*, N.Y. TIMES (Apr. 15, 2022), <http://www.nytimes.com/2022/04/15/opinion/russia-war-currency-reserves.html> [<http://perma.cc/SGS2-AARQ>]; see generally Minami Funakoshi, Hugh Lawson & Kannaki Deka, *Tracking Sanctions Against Russia*, REUTERS (Mar. 9, 2022), <http://www.reuters.com/graphics/UKRAINE-CRISIS/SANCTIONS/byvrjenzmve/> [<http://perma.cc/2NED-9GXE>].

¹⁷⁵ See Robin Wigglesworth, Polina Ivanova & Colby Smith, *Financial Warfare: Will There Be a Backlash Against the Dollar?*, FIN. TIMES (Apr. 6, 2022), <http://www.ft.com/content/220db8f2-2980-410f-aab8-f471369ac3cf> [<http://perma.cc/NZ4K-DTM5>].

¹⁷⁶ Martin, *supra* note 162. As Barry Eichengreen observed, “It’s a huge deal. Freezing the assets of the Russian central bank certainly came as a surprise to me, and it would appear to Putin as well . . . These issues have always come up in the past whenever the words ‘weaponise’ and ‘dollar’ are spoken. The worry is always that this will work to the disfavour of US banks, and you go some way towards eroding the dollar’s exorbitant privilege.” Wigglesworth et al., *supra* note 175.

¹⁷⁷ Pop et al., *supra* note 116.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

Crimea in 2014, when it took a year for weak sanctions to be imposed.”¹⁸¹

Yu Yongding, a leading economist at the Chinese Academy of Social Sciences and former adviser to China’s central bank, warned that such actions had “fundamentally undermined national credibility in the international monetary system. What contracts and agreements can’t be dishonoured in international financial activities if foreign central banks’ assets can be frozen.”¹⁸² These sanctions have been called “earth shattering. They’ve broken the mould.”¹⁸³ Professor Mitu Gulati argued that “[i]f you change the rules for Russia, you’re changing the rules for the whole world Once these rules change, they change international finance forever.”¹⁸⁴

II. DIGITAL CURRENCY

Using power and leverage to freeze another country’s foreign currency reserves can destabilize:

the credibility of the existing international monetary and payments systems . . . while emphasizing the power of digital finance. This system is founded on the trust that states can safely store their savings with foreign banks and central banks and these funds will not be frozen or expropriated in circumstances such as these.”¹⁸⁵

Even Russia seemed to have shared such assumptions.¹⁸⁶ A breach of this trust has long-term consequences for a rule-based system.¹⁸⁷ In fact, some have argued that even freezing (not going so far as seizing) put the system at risk.¹⁸⁸

¹⁸¹ Alan Rappeport & David E. Sanger, *Seizing Russian Assets to Help Ukraine Sets Off White House Debate*, N.Y. TIMES (May 31, 2022), <http://www.nytimes.com/2022/05/31/us/politics/russia-sanctions-central-bank-assets.html> [<http://perma.cc/2RM8-8NP3>].

¹⁸² Wigglesworth et al., *supra* note 175.

¹⁸³ *Id.*

¹⁸⁴ *Id.* Even allies like the EU are looking for ways to reduce reliance on the dollar; the EU announced its intention “to reduce its reliance on the dollar for commodity pricing and other contracts.” Matthew Oresman, *Bypassing the Buck*, THE WORLD TODAY 22 (Aug. & Sept. 2020), <http://www.pillsburylaw.com/images/content/1/4/v2/141914/Chatham-House-MO-310720.pdf> [<http://perma.cc/F8BK-NBS9>]; *see also* Jim Brunsten, Sam Fleming, & Philip Stafford, *EU Sets Out Plans to Curb Reliance on Dollar in Post-Trump Era*, FIN. TIMES (Jan. 16, 2021), <http://www.ft.com/content/20f39e33-e360-479e-82e2-5441d24f0e0b> [<http://perma.cc/2GD8-4JBS>] (describing EU efforts to “find energy alternatives to crude oil, where the main benchmarks such as Brent and WTI are tied to the dollar”).

¹⁸⁵ Arney et al., *supra* note 166, at 44.

¹⁸⁶ *See* Martin, *supra* note 162.

¹⁸⁷ *See* Joshua Kirschenbaum & Nicolas Véron, *Now is Not the Time to Confiscate Russia’s Central Bank Reserves*, BRUEGEL (May 16, 2022), <http://www.bruegel.org/blog-post/now-not-time-confiscate-russias-central-bank-reserves> [<http://perma.cc/P28Q-JMRU>].

¹⁸⁸ *Id.*

While Western allies have rallied around using the financial system to sanction Russia, many other countries have refused to participate. South Africa, Brazil, and even Mexico have refused to “take sides,” opting instead for a “neutral” approach.¹⁸⁹ There is no global alliance, in other words, only a Western-led coalition. China, in particular, has refused to join the chorus of criticism.¹⁹⁰ Thus by launching the dollar as a weapon, “the US and its allies risk provoking a backlash that could undermine the US currency and sunder the global financial system into rival blocks that could leave everyone worse off.”¹⁹¹ As Zoltan Pozsar, an analyst at Credit Suisse said, “[w]ars also upend the dominance of currencies and serve as a doula to the birth of new monetary systems.”¹⁹²

Russia’s foreign minister considers Western freezing of its central bank reserves theft.¹⁹³ And Larry Fink, the ten trillion asset manager of Black Rock, wrote in his annual letter to shareholders that the Russian invasion of Ukraine had significant unintended consequences, such as unleashing the beginning of the end of globalization as well as the adoption of digital currencies because cryptos can function both as a safe asset as well as a sanction circumvention device.¹⁹⁴ Indeed, after the invasion and the imposition of sanctions, the price of bitcoin and other cryptos jumped, spurred by the assumption that cryptos could be used to evade sanctions.¹⁹⁵ As stated, digital currencies is an area where China has had a head start. The next section explores the Chinese digital currency experiment.

A. China and the Digital Yuan

In the last twenty years, the domination of the dollar has remained relatively stable although there have been significant challenges, such as increased European integration, the rapid growth of China, and the acceleration of yuan

¹⁸⁹ Wigglesworth et al., *supra* note 175.

¹⁹⁰ *See id.*

¹⁹¹ *Id.*

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *See* Tanaya Macheel, *BlackRock’s Fink Says Russia-Ukraine War Could Accelerate Use of Cryptocurrencies*, CNBC (Mar. 24, 2022), <http://www.cnbc.com/2022/03/24/blackrocks-fink-says-russia-ukraine-war-could-accelerate-use-of-cryptocurrencies.html#:~:text=Russia’s%20invasion%20of%20Ukraine%20could,annual%20letter%20to%20shareholders%20Thurs%20day> [<http://perma.cc/4L4P-LM22>].

¹⁹⁵ *See* Tanaya Macheel & Arjun Kharpal, *Bitcoin Jumps as Russia Ukraine Conflict Continues and U.S. Imposes Further Sanctions*, CNBC (Mar. 1, 2022), <http://www.cnbc.com/2022/03/01/bitcoin-btc-price-jumps-as-russia-ukraine-conflict-continues.html> [<http://perma.cc/X3SE-SHMP>].

internationalization.¹⁹⁶ And although digital money like Bitcoin has produced all kinds of distributed ledger technology (“DLT”), it has not been viewed as a credible challenger to the dollar or other hard currencies because it is not widely used as a medium of exchange, a means of payment, or a store of value.¹⁹⁷

In 2019, however, Facebook’s own proposed cryptocurrency, Libra, became a force to contend with, not necessarily because of any new technological innovation but rather because of its potential global reach, given the fact that one-third of the world’s population regularly uses Facebook and would find useful and convenient the range of payment systems offered, such as FacebookPay, WhatsAppPay, and Instagram Pay.¹⁹⁸ As an alternative payment system that is private, Libra would nonetheless be backed by a basket of major currencies, potentially disrupting existing payment systems and jeopardizing global and regional stability.¹⁹⁹ Its potential scope and reach meant that it posed a real threat to monetary sovereignty—too big to ignore.²⁰⁰

Governments responded by jumpstarting their own CBDCs.²⁰¹ The highest profile announcement came from the CBOC, which launched the digital yuan in late 2019,²⁰² prompting scholars to declare “that China’s digital yuan, if – or when – available offshore and on a wholesale (and not just retail) basis, will prove to be a powerful disruption” in the international monetary system.²⁰³

Despite reports to the contrary, China does not oppose cryptocurrencies, only private ones, purportedly because of privacy and fraud concerns.²⁰⁴ In fact, China has pursued its plan to develop block-chain based digital yuan as early as 2014.²⁰⁵ As this section demonstrates, China’s plan to create a central digital yuan is akin to its prior experiments in marketization and privatization.

¹⁹⁶ See Carol Bertaut, Bastian von Beschwitz & Stephanie Curcuru, *The International Role of the U.S. Dollar*, BD. OF GOVERNORS OF THE FED. RESRV. SYS. (Oct. 6, 2021), <http://www.federalreserve.gov/econres/notes/feds-notes/the-international-role-of-the-u-s-dollar-20211006.html> [<http://perma.cc/XP7G-DMRY>].

¹⁹⁷ Arney et al., *supra* note 166, at 19.

¹⁹⁸ *Id.*

¹⁹⁹ *See id.*

²⁰⁰ *See id.*

²⁰¹ See Arjun Kharpal, *In a World Where Central Banks Issue Digital Currencies, Bitcoin and Libra May Find a Place*, CNBC (Aug. 19, 2020), <http://www.cnbc.com/2020/08/20/central-bank-digital-currencies-bitcoin-libra-could-play-a-role.html> [<http://perma.cc/LFN9-ZPQH>].

²⁰² Arney et al., *supra* note 166, at 23–24.

²⁰³ *Id.* at 24.

²⁰⁴ Wan, *supra* note 5.

²⁰⁵ *See id.* at 2.

That is, both experiments, despite their names, were conducted in a way meant not to promote but to co-opt the market and the private sector, and in the process, to preserve, if not further solidify, the power of the state.

China, in other words, is following a similar trajectory to the two major ones in prior years. In 1978, in an effort to introduce markets without antagonizing Party hard-liners, Deng Xiao Ping devised an “open door” policy, allowing market activities to exist and thrive in the non-state sector without dismantling or undermining the state sector.²⁰⁶ Deng called this “socialism with Chinese characteristics.”²⁰⁷ In the 1990s, when the Soviet Union collapsed and former Soviet bloc countries began to transition from centrally planned to market economies, China took a different, albeit familiar, path—“privatization with Chinese characteristics.”²⁰⁸ In brief, instead of privatizing state owned enterprises as was being done in countries in Eastern Europe and the former Soviet Union (and hence risk losing state control over the economy), the Chinese government established and used the stock market to induce private Chinese citizens with surplus but private capital kept outside banks and state purview to invest in Chinese companies that were majority owned by the state.²⁰⁹ In essence, this meant that “privatization” was being pursued to bring private capital under state control, as private capital was being used to buy minority shares in state-owned enterprises.²¹⁰

As this Article will demonstrate, China’s digital yuan project is following the same trajectory the government took with respect to prior market reforms, to further state control and remove the potential threats the government believes underlie private cryptocurrencies. In addition, the project packs an additional wallop—challenging the U.S. dollar and particularly its extraterritorial and unilateral use by the U.S. government to punish other states for behaviors the United States wishes to sanction.

The PBOC’s investment in a digital yuan is to be distinguished from digital money that is already widespread in parts of China. In cities like Beijing, few transactions are effectuated through traditional mechanisms such as cash, check, or credit card, as they have been supplanted by digital payment systems devised by Alibaba and Tencent, two of China’s most

²⁰⁶ Cao, *supra* note 37, at 109.

²⁰⁷ *Id.* at 100.

²⁰⁸ *See id.* at 98, 100.

²⁰⁹ *See id.* at 98–100.

²¹⁰ *See id.* at 152.

powerful tech companies.²¹¹ Although “highly advanced digital payment systems like Alipay and WeChat have created a cashless and cardless economy . . . built upon a network of commercial bank accounts, operating at the M2 level of money supply,”²¹² a digital yuan would transform the monetary system in a wholly different way. The digital yuan “is mainly a substitute for cash in circulation (M0), and will coexist with physical RMB.”²¹³

The PBOC itself describes the difference the following way: although the digital yuan and existing electronic payment systems are “on different dimensions,” they are also designed to “complement each other.”²¹⁴ The digital yuan is the equivalent of M0 and mainly functions as retail payment, supplementing existing electronic payment systems.²¹⁵ However, there are significant differences between the two systems. According to the PBOC, the digital yuan, being China’s legal tender, is the safest asset; it can be transferred without the need to have bank accounts or online access; and it “supports managed anonymity, which helps protect privacy and user information.”²¹⁶

The PBOC uses what it calls “a centralized management model and a two-tier operational system”²¹⁷ in the digital yuan universe. This is also referred to as “one CBDC, two databases, and three centers.”²¹⁸ One CBDC refers to the digital yuan issued by the PBOC.²¹⁹ Two databases refer to China’s use of a two-tiered system in which the government issues digital currency to

²¹¹ See Niall Ferguson, *Bet Your Bottom Dollar, the Future of Currency is Digital*, THE GLOBE & MAIL (Sept. 20, 2019), <http://www.theglobeandmail.com/opinion/article-bet-your-bottom-dollar-the-future-of-currency-is-digital/> [<http://perma.cc/7RUY-34RK>].

²¹² Wan, *supra* note 5.

²¹³ See WORKING GRP. ON E-CNY RSCH. & DEV. OF THE PEOPLE’S BANK OF CHINA, PROGRESS OF RESEARCH & DEVELOPMENT OF E-CNY IN CHINA 3 (2021) [hereinafter PEOPLE’S BANK OF CHINA], <http://www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021071614584691871.pdf> [<http://perma.cc/Y5JX-7R5K>].

²¹⁴ See *id.* at 5.

²¹⁵ See *id.* The PBOC also states the following: “The e-CNY is a substitute for M0. Thus, it is treated the same as the physical RMB under M0, which carries and pays no interest.” *Id.* at 7.

²¹⁶ See *id.* at 5.

²¹⁷ See *id.* at 3. In a one-tier system, the central bank itself would directly issue and circulate and maintain digital services to the public; contrastingly, in a two tier system—which is what China has—the central bank issues digital currency to authorized operators who then are responsible for exchange and circulation. See *id.* at 8. The central bank selects commercial banks which in turn “open different types of digital wallets for customers based on the strength of customer personal information identification, and provide e-CNY exchange services.” See *id.* at 8.

²¹⁸ Aysan & Kayani, *supra* note 43, at 5.

²¹⁹ See *id.*

commercial banks, which then issue it to the public.²²⁰ The three centers refer first to the registration process in which the government “manages the data and identity of each customer.”²²¹ The second “maintains records on the amount of digital currency owned by a private entity and documents its transaction history.”²²² Finally, the third is more of the analytical center, in that it “evaluates and analyzes the purpose of the transactions and stores of money, as all kinds of surveillance are employed.”²²³

The PBOC opted against a single use system in which it would disburse DCEPs directly to consumers because while it does want to harness and leverage the private payment system, it does not want to kill it by disintermediating the banking system.²²⁴ The PBOC’s plan is instead to issue digital yuans to authorized operators—commercial banks—and manage the digital yuan while the authorized operators are empowered with exchanging and circulating it to the public.²²⁵ In other words, a digital yuan “would be integrated into M0, thus restoring control and influence to the PBOC.”²²⁶ The state is cleverly planning to use commercial firms, perhaps piggybacking on the technological innovations they have forged, to accomplish its objective. As the Vice President of PBOC Fan Yifei put it in a public interview, “With the help of technology innovation, we can gradually transit into issuance and circulation of digital RMB and impose effective supervision of the private sector.”²²⁷ Ultimately, it is not surprising that the government’s preference for a bifurcated monetary structure is most likely rooted in its emphasis on controlling as well as benefitting from the crucial financial system, particularly the private sector.²²⁸

As it is issued by the CBDC, though operated by approved commercial banks, the digital yuan is not a private decentralized currency nor does it operate on the blockchain.²²⁹ The digital yuan

²²⁰ *See id.*

²²¹ *See id.*

²²² *See id.*

²²³ *See id.*

²²⁴ *See* FANUSIE & JIN, *supra* note 6, at 8.

²²⁵ *See* PEOPLE’S BANK OF CHINA, *supra* note 213, at 3.

²²⁶ *See* Wan, *supra* note 5.

²²⁷ *See id.*; *see also* Fan Yifei, *On Digital Currencies, Central Bank Should Lead*, BLOOMBERG (Sept. 1, 2016, 2:00 PM), <http://www.bloomberg.com/opinion/articles/2016-09-01/on-digital-currencies-central-banks-should-lead?leadSource=uverify%20wall> [<http://perma.cc/3CAX-FJKB>].

²²⁸ *See* FANUSIE & JIN, *supra* note 6, at 8.

²²⁹ *See* Huld, *supra* note 22. Approved banks are ICBC, Agricultural Bank of China, Bank of China, China Construction Bank, Bank of Communications, Postal Savings Bank of China, and China Merchant’s Bank. In addition, there are two online banks: WeBank (WeChat Pay) and MyBank (Alipay). *See id.*

is its own creature. “Unlike Bitcoin and other cryptocurrencies, e-CNY does not operate through a blockchain-based decentralized ledger; rather, it is a centralized operation, issued and supervised by the PBOC. At this technical level, the e-CNY is not fundamentally different from other online digital payment options in China such as AliPay and WeChat.”²³⁰ But the digital yuan, unlike private electronic payment systems like AliPay or WeChat, “has all the basic functions of money, i.e., unit of account, medium of exchange and store of value. . . . [and] is the central bank’s liabilities to the public. Backed by sovereign credit, e-CNY has the status of legal tender.”²³¹

Users can access the digital yuan from an online wallet accessible through the digital yuan app with the ability to “set up multiple digital wallets on the app and set parameters, such as daily spend limits and the apps and services that can be paid for with the wallet, and link different bank cards.”²³² There are different categories of digital wallets per transaction or daily limits assigned by authorized operators based on the strength of customers’ personal information, with anonymity available for certain accounts deemed the least privileged.²³³ There are also personal and corporate wallets, as well as parent and sub-wallets.²³⁴ During the trial stage, users can withdraw digital yuan from their ATMs directly to their smartphones’ e-wallets, then pay simply by holding the smartphone app close to the electronic point-of-sale device.²³⁵

Mu Changchun, head of the central bank’s Digital Currency Research Institute, admitted that despite an official policy of so-called privacy protections and “controlled anonymity,”

²³⁰ See Lorand Laskai, *Let’s Start with What China’s Digital Currency is Not*, STANFORD UNIV. (Mar. 8, 2022), <http://digichina.stanford.edu/work/lets-start-with-what-chinas-digital-currency-is-not/> [<http://perma.cc/KP9Y-9Q4R>]; see also Barclay Bram, *China’s Digital Yuan is a Warning to the World*, WIRED (Aug. 23, 2021, 6:00 AM), <http://www.wired.co.uk/article/digital-yuan-china-bitcoin-libra> [<http://perma.cc/D7RK-QHN5>].

More than 88 of CBDC projects, at pilot or production phase, use blockchain as the underlying technology. However, unlike cryptocurrencies which use blockchain as a way of maintaining anonymity and decentralisation in the system, CBDCs rely on a centralised ledger. This means that Central Banks are able to access an incredibly rich seam of data about the financial transactions of their populations – data that otherwise would not be captured by existing systems or would require going through intricate proxies.

Id.

²³¹ See PEOPLE’S BANK OF CHINA, *supra* note 213, at 3.

²³² See Huld, *supra* note 22.

²³³ See PEOPLE’S BANK OF CHINA, *supra* note 213, at 9.

²³⁴ See *id.*

²³⁵ See Kynge & Yu, *supra* note 1.

there is ambiguity in terms of how much anonymity can be allowed.²³⁶ “We know the demand from the general public is to keep anonymity by using paper money and coins . . . we will give those people who demand it anonymity in their transactions,” Mu stated, “[b]ut at the same time, we will keep the balance between the ‘controllable anonymity’ and anti-money laundering, CTF [counter-terrorist financing], and also tax issues, online gambling and any electronic criminal activities.”²³⁷

Interestingly, despite the possibility that the government can easily pierce anonymity based on professed concerns like money laundering or criminal activities, the PBOC emphasizes that there are plenty of privacy guarantees, even if those need to be balanced against security issues.²³⁸ In one of its reports, the PBOC highlights the “variety of technologies, including digital certificate system, digital signature, and encrypted storage to make double-spending, illegal duplication and counterfeit, transaction falsification, and repudiation unfeasible.”²³⁹

Given the need to juggle both privacy and security concerns, the PBOC calls its agenda “managed anonymity”—that is, “anonymity for small value and traceable for high value”²⁴⁰ ostensibly to protect “personal information and privacy”²⁴¹ while also guarding against large risks involved in “illegal and criminal activities, such as tele-fraud, Internet gambling, money laundering, and tax evasion by making sure that transactions comply with AML/CFT requirements [(anti-money laundering/combating the financing of terrorism)].”²⁴² According to the PBOC, the digital yuan will be protected by a firewall, shielding e-CNY information in accordance with strict security and privacy standards.²⁴³ The government claims, through Mu Changchun—director of the central bank’s Digital Currency Research Institute—that the digital yuan will have the “highest level of privacy protection” and that the central bank would have no direct knowledge of users’ identity unless it had suspicion of illegal activities.²⁴⁴

²³⁶ *See id.*

²³⁷ *Id.*

²³⁸ The PBOC touts the institutional design of the digital one as one that promotes security against terrorism and money laundering as well as privacy and data protection. *See* PEOPLE’S BANK OF CHINA, *supra* note 213, at 6.

²³⁹ *See* Huld, *supra* note 22.

²⁴⁰ *See* PEOPLE’S BANK OF CHINA, *supra* note 213, at 7.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ *Id.*

²⁴⁴ *Digital Yuan Gives China a New Tool to Strike Back at Critics*, *supra* note 47.

In reality, however, by controlling the IT infrastructure and the cloud, the PBOC would be able to control “monetary issuance and ledger management.”²⁴⁵ The PBOC cloud would hold crucial information from the database it controls, allowing it to verify user identity and information, including users’ digital wallets.²⁴⁶ Hence, a digital yuan:

will not only make cash and coinage obsolete (which is already happening in China), but also make commercial banks and M2 easier to control. It means the PBOC can more effectively control and regulate an overextended debt market. Thanks to blockchain’s traceability and programmability, it will become much more difficult to hide banking products and services from balance sheets.²⁴⁷

The ability to accurately assess monetary policy like currency supply is likely to be accurate and swift because the government can control the rules of the game at the code level, dictating where digital money is allowed or not allowed to go towards.

For example, if the PBOC deems it necessary to cool down a hot housing market, it could simply write a program cutting off digital yuan from being used in the real estate sector.²⁴⁸ Private individuals can be placed under instant surveillance, as their spending history and debt/asset balance are all too evident which means the government can easily monitor not just ordinary use but also money laundering, tax evasion, and capital flight.²⁴⁹

This enhanced monitoring ability “dovetails with a government fintech plan issued in late 2019” in which it aimed to exploit FinTech’s trove “of financial data to promote the construction of a ‘nationwide integrated big data cent[er].’”²⁵⁰ Already, the government has gathered and leveraged its citizens’ data under various guises.²⁵¹ For example, under the State Council’s 2014 “Social Credit System,” through the use of blacklists, the government created a plan to inculcate the “construction of sincerity in government affairs, commercial sincerity, and judicial credibility.”²⁵² Through the judicial system, the government publishes names of people who have not paid fines or judgments against them; the list is shared with businesses and government

²⁴⁵ Wan, *supra* note 5.

²⁴⁶ *Id.*

²⁴⁷ *Id.*

²⁴⁸ *Id.*

²⁴⁹ *Id.*

²⁵⁰ Kyngé & Yu, *supra* note 1 (quoting FANUSIE & JIN, *supra* note 6, at 11).

²⁵¹ Larson, *supra* note 48.

²⁵² *Id.*

institutions, which can lead to being blacklisted—resulting in an inability to get loans or promotions, book flights, or luxury hotels.²⁵³

This has been referred to as “data-driven governance,”²⁵⁴ and it is quite reasonable to believe that a centralized digital currency as that implemented by China can only result in further data concentration under government control. As Emily Jin of the Center for a New American Security observed:

If the central bank can successfully roll out the digital renminbi, it indeed would be a crucial tool for domestic control. . . . People could still try to circumvent the monitoring capability of [the currency], but I’d imagine that would be incredibly difficult given that the system would allow the central bank to track real-time transactions. . . . [Thus,] there will be no such thing as true anonymity for users.²⁵⁵

Indeed, the PBOC, “as the registrar and verifier of the digital currency[,] will likely be able to cut off access to DCEP funds in order to punish or coerce any user.”²⁵⁶

Even as the appeal of cryptocurrencies is built around freedom and uses the language of libertarianism, there is the creeping fear that a central bank digital currency issued by the PBOC will lead to even greater government control in China as it is a top-down design.²⁵⁷ This would complement already existing surveillance projects, like the so-called sharp eyes initiative, to install CCTVs all over public spaces; the so-called social credit system comprised of police records, financial, travel, political, medical, and online data used to create a trustworthiness rating which can affect whether someone can buy a plane ticket or attend university; and the state-mandated installation of Covid-19 health codes onto mobile phones to track someone’s risk of infection through a digital footprint.²⁵⁸ Digitalization “enables the central bank to track all transactions at the individual level in real time. Beijing aims to use this feature to combat money laundering, corruption and the financing of ‘terrorism’ at home by strengthening the already formidable surveillance powers of the ruling Communist party.”²⁵⁹

²⁵³ *Id.*

²⁵⁴ *Id.*

²⁵⁵ Kynge & Yu, *supra* note 1. The head of Asian business at one of the top Wall Street banks, who declined to be identified, warned, “[t]he digital renminbi will put every transaction on to the radar of the People’s Bank of China [central bank].” *Id.* Samantha Hoffman, senior analyst at the Australian Strategic Policy Institute, put it this way: “The [digital renminbi] is heavily about the party’s ability to exercise control” *Id.*

²⁵⁶ FANUSIE & JIN, *supra* note 6, at 11.

²⁵⁷ See Kynge and Yu, *supra* note 1.

²⁵⁸ See Orville Schell, *Technology Has Abetted China’s Surveillance State*, FIN. TIMES (Sept. 2, 2020), <http://www.ft.com/content/6b61aaaa-3325-44dc-8110-bf4a351185fb>.

²⁵⁹ Kynge and Yu, *supra* note 1.

The digital yuan is also the government's response to the challenge posed by the increasing power of China's domestic private sector, especially in the domestic e-payment system in which Tencent and Antgroup are dominant.²⁶⁰ The FinTech industry is an especially thriving domestic e-commerce sector, having captured more than fifty percent of the Chinese population that regularly uses mobile payments, making China a leader in the establishment of a cashless society.²⁶¹ Mobile payments have captured the imagination of not just city dwellers but also more rural ones, with twenty percent of users in townships and villages.²⁶² However, this FinTech industry is dominated by private companies like Alipay and WeChat Pay,²⁶³ which can be used even outside of China by Chinese overseas travelers and in China by foreign tourists holding credit cards issued in their own countries.²⁶⁴

The private FinTech industry has in its control a vast trove of consumer data. Although the government, theoretically speaking, could access such data, the data is stored by companies like Ant and Tencent in a way that is not easily accessible or legible to the government. But now, "by building out the DCNY, the PBOC will be able to create a digital architecture that is significantly more effective at capturing the types of data that the government is interested in having, with no intermediary capable of pushback."²⁶⁵

Indeed, this tug of war between the government and the private FinTech industry can be seen in the government's cancellation of Ant Group's initial public offering estimated at \$37 billion,²⁶⁶ dubbed the "Chinese 'techlash.'"²⁶⁷ In doing so, the Chinese government sent an undeniable message: "No private business gets

²⁶⁰ *See id.*

²⁶¹ Daniel Slotta, *Digital Payments in China - Statistics & Facts*, STATISTA (Jan. 6, 2023), <http://www.statista.com/topics/1211/digital-payments-in-china/#dossierKeyfigures> [<http://perma.cc/7BFQ-WKNU>].

²⁶² *See id.*

²⁶³ The private FinTech industry in China is vast and interconnected. *See* Kynge & Yu, *supra* note 1.

Alipay and WeChat Pay not only form the backbone of China's payments system in an economy that is already largely cashless. Their business also supports the share prices of Tencent, which is one of the world's 10 largest companies with a capitalisation of more than \$920bn, and Alibaba, which owns a stake in Ant Group.

Id.

²⁶⁴ *See* Slotta, *supra* note 261.

²⁶⁵ Bram, *supra* note 230.

²⁶⁶ *See* Kynge & Yu, *supra* note 1.

²⁶⁷ Bram, *supra* note 230.

to swagger unless the government is on board with it.”²⁶⁸ Chinese regulators denied the Initial Public Offering (“IPO”) scheduled in Shanghai and Hong Kong at the last minute despite the fact that it would have been even more lucrative than the IPO of Saudi Aramco, the state-run oil company—an act akin to a giant slap in the face of Ant’s controlling shareholder, Jack Ma, founder of Alibaba, to make clear “that international bragging rights mattered less than ensuring private companies know where they stand next to the state.”²⁶⁹ As Kellee S. Tsai, the dean of the School of Humanities and Social Science at the Hong Kong University of Science and Technology said, “What happened to Ant reinforces that sense that it’s really essential to show respect for party-state authority Capitalists have to play by the political rules of the game.”²⁷⁰

Although the state-controlled media described the move as necessitated by the government’s desire to protect investors, others disagreed. Andrew Collier, the founder and managing director of Orient Capital Research, believed the move was meant to protect big government-run banks whose profit was undercut by the Ant group: “[m]y personal view is that the banks were looking for an excuse to nip this in the bud and also give them adequate time to try to get their own online operations up to speed.”²⁷¹ The government considers its state banking system as an instrument of its economic power, and anything that threatens the centralized banking system is a threat to its own power.²⁷²

Under President Xi Jinping, Chinese regulators also cracked down on private innovation that was deemed too risky or freewheeling, including closure of the once vibrant peer-to-peer (“P2P”) lending platforms, which had numbered around ten thousand in 2015 but have essentially dwindled down to approximately twenty-nine—as they had been “regulated out of existence.”²⁷³ P2Ps had very low costs and succeeded in collecting

²⁶⁸ Raymond Zhong, *In Halting Ant’s I.P.O., China Sends a Warning to Business*, N.Y. TIMES (Dec. 24, 2020), <http://www.nytimes.com/2020/11/06/technology/china-ant-group-ipo.html>.

²⁶⁹ *See id.*

²⁷⁰ *Id.*

²⁷¹ *Id.*

²⁷² *See* Kyng & Yu, *supra* note 1.

²⁷³ *See* Herbert Poenisch, *China Moves Towards Greater Control Over Fintechs*, OMFIF (Mar. 12, 2021), <http://www.omfif.org/2021/03/china-moves-towards-greater-control-over-fintechs> [<http://perma.cc/YY4Y-6HQA>]. Peer-to-peer lending platforms “were initially celebrated as a technological and financial innovation, allowing millions of small savers to invest and millions of small- and medium-sized enterprises to borrow small amounts of money.” *Id.*

vast amounts of data.²⁷⁴ Through P2Ps, borrowers and investors can be efficiently matched online, resulting in a win-win scenario where borrowers can receive lower interest rates and lenders higher interest rates because intermediaries—which normally take a cut—are bypassed.²⁷⁵ P2Ps became attractive because there was an excess of uninvested cash in China, given the fact that the Chinese have one of the highest personal savings rates in the world—fourty-six percent compared to four percent in the United States.²⁷⁶ Investors, including state-owned enterprises, flocked to P2Ps, many expecting returns to be guaranteed because Chinese investors are used to receiving guaranteed rates of return—given the fact that most financial institutions are state-owned.²⁷⁷ The industry was riddled with fraud, inefficiencies, failure to do due diligence, and risk assessment on borrowers, causing the state to step in to address the crisis by imposing stricter regulations.²⁷⁸

At the same time, even if regulatory oversight was necessary, there is no doubt that state scrutiny was triggered by the government's concerns about its own state banks and their own access to deposits. As noted:

Access to deposits was also at the core of the investigation into Ant's business model. China's big banks regard such access as their privilege and called on the supervisory authorities to push out any intruders. They labelled what the fintechs were doing illegal fund raising activity, which needed to be cleaned up. Established banks wanted to play on a level playing field with fintechs.²⁷⁹

These concerns were echoed at the 2020 FinTech festival held in Singapore by Guo Shuqing—the chairman of the China Banking and Regulatory Commission and chief representative of the Communist Party of China at the PBOC—who exhorted greater control over the fintech industry by “[c]lipping the wings of big fintech companies and putting the state in charge.”²⁸⁰

According to Minxin Pei, professor of government at Claremont McKenna College, China is struggling for “a balanced course between opening and maintaining control. . . . The

²⁷⁴ *Id.*

²⁷⁵ See Joe Ngai, *What Today's Shake-Out in China's Peer-to-Peer Lending Market Means for Fintech*, MCKINSEY & CO. (Oct. 9, 2018), <http://www.mckinsey.com/cn/our-insights/perspectives-on-china-blog/what-todays-shakeout-in-chinas-peer-to-peer-lending-market-means-for-fintech> [<http://perma.cc/PJE7-A4WB>].

²⁷⁶ *See id.*

²⁷⁷ *See id.*

²⁷⁸ *See id.*

²⁷⁹ Poenisch, *supra* note 273.

²⁸⁰ *Id.*

sentiment is one of uncertainty, caution. . . . When you have Ant, which is truly gigantic, which will allow people to move money around a lot more easily, with very little transparency, really — that can worry the hell out of them.”²⁸¹

The digital yuan is one way that the government can “undermine the market position of Alipay and WeChat Pay, the two most popular and privately owned platforms run by Ant Group and Tencent.”²⁸² Authorities such as Wang Yongli, a former vice-president of the Bank of China, one of China’s largest state-owned banks, predict that “[t]he wide use of the digital renminbi will affect the market position and profit model of third-party payment platforms like Alipay and WeChat pay.”²⁸³ Others, such as a director at a state-owned bank wishing to remain anonymous, have similarly predicted: “The digital currency will deal a blow to Alipay and WeChat as it could replace them It is likely that the government will use administrative power to promote the use of digital renminbi to undermine the monopoly on consumer data held by the technology firms.”²⁸⁴

Such administrative authority is part and parcel of the digital yuan, derived from its status as legal tender and therefore must be accepted by all merchants who will be required to install e-yuan terminals once digitalization is finalized.²⁸⁵ A sense that the popularization of the digital renminbi could come at the expense of Alipay and WeChat Pay is reinforced by Beijing’s messaging through state media coverage.²⁸⁶ In a dispatch from the streets of Beijing during Chinese New Year, a reporter from CCTV, the official television station, elevated the e-yuan over other payment systems.²⁸⁷ Through its state media, Beijing has been promoting it as a “more convenient” alternative, as it is as convenient as cash since it can be used offline.²⁸⁸ “If there is no internet connection, users can still transfer money between two offline devices by using what the state media calls ‘dual offline technology.’”²⁸⁹ Although the e-yuan will not be hostile to the private payment system, the central bank has designed the e-yuan to be independent of Alipay

²⁸¹ Zhong, *supra* note 268.

²⁸² Kyngé & Yu, *supra* note 1.

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *See id.*

²⁸⁶ *Id.*

²⁸⁷ *Id.*

²⁸⁸ *Id.*

²⁸⁹ *Id.*

and WeChat Pay.²⁹⁰ While both private platforms can be used for e-yuan transactions, it is likely that “the private platforms will be enlisted to promote the e-yuan’s rise.”²⁹¹ Indeed, even as the government allows both systems to coexist for the time being, the rise of the state system and an increase in its market share will cut into Alipay and WeChat Pay consumer lending business.²⁹²

In fact, China even required Alipay, a private company, to switch to UnionPay, the state-owned Chinese equivalent of Visa or Mastercard with close ties to the PBOC, for barcode payment clearing.²⁹³ Alipay and other payment services constitute sixteen% of China’s GDP, the highest percentage in the world; therefore, hitching Alipay, a distributor of the digital yuan, to UnionPay “would allow China’s central bank to distribute and keep track of it easily. This works both ways because UnionPay also has plans to ramp up international adoption.”²⁹⁴ Thus, even though the linkage is also good for UnionPay’s own international ambitions, it especially fits into the government’s quest for control. This is because “[s]ince 2018, Alipay and WeChat have agreements for barcode payments to be cleared via Unionpay, effectively giving the central bank oversight.”²⁹⁵

The desire of the Communist Party for control cannot be overstated, especially in today’s China, where “the authorities under Xi Jinping, the country’s top leader, have brought a steely, uncompromising edge to their tactics for enforcing the Communist Party’s will.”²⁹⁶ However, given the fact that internationalizing the yuan is one of the government’s top priorities so China can be freed “from having to settle most of its

²⁹⁰ *Id.*

²⁹¹ *Id.*

²⁹² *See id.*

²⁹³ *See* Wood, *supra* note 9. UnionPay is one of the first third-party payment service institutions in China to have a cooperation agreement with the Digital Currency Research Institute, the CBDC branch of the central People’s Bank of China. *UnionPay Debuts Self-Service Network for Merchants to Add Digital Yuan Options*, PYMNTS (Mar. 29, 2022), <http://www.pymnts.com/personnel/2022/digital-bank-gxs-executive-director-to-step-down/> [<http://perma.cc/28EX-7CGP>].

²⁹⁴ Wood, *supra* note 9. UnionPay cards are accepted in 173 countries and regions, including South Africa, Australia, New Zealand, Canada, and Russia. *Id.* French supermarket Carrefour and U.S. giant Walmart also use UnionPay to process payments. *Id.* In addition, UnionPay issues cards in 54 countries and regions, including Belt and Road Initiative countries like Laos, Tanzania, and Tajikistan. *See id.*

²⁹⁵ *How China Will Implement Its Central Bank Digital Currency*, LEDGER INSIGHTS (Aug. 29, 2019), <http://www.ledgerinsights.com/how-china-will-implement-its-central-bank-digital-currency-cbdc/> [<http://perma.cc/HB9W-SP5F>].

²⁹⁶ Zhong, *supra* note 268.

trade transactions in the US dollar,”²⁹⁷ the government also realizes its desire for control has to be tempered.

This is because there is potentially an inherent tension between the desire for yuan internationalization on the one hand and domestic control on the other. The ability to see and potentially monitor every transaction might put foreign banks in a quandary with respect to confidentiality rules in their home countries.²⁹⁸ The ambiguity in “managed anonymity” is likely to “hamper Beijing’s longstanding aspirations to promote the use of its currency internationally as part of [its] long-range ambition to free itself from having to settle most of its trade transactions in the US dollar.”²⁹⁹ As a Hong Kong businessperson who preferred anonymity put it, “If the Communist party will get insight into every trade we do through the digital renminbi, then I think a lot of people outside China will prefer not to use it.”³⁰⁰

Thus, it would not be surprising if that degree of state control backfires because it spooks foreign investors and companies “already wary of China’s track record on intellectual property rights, economic coercion[,] and rule of law.”³⁰¹ Foreign companies are already concerned about how quickly the Swedish retailer H&M was canceled from the Chinese market when it announced it would stop importing cotton from Xinjian, out of concern for how the government was treating the Uyghur Muslim minorities.³⁰² Alibaba Group’s Tmall and JD.com dropped H&M from its sites as the Communist Youth League intensified its calls for boycott of not just H&M but other Western brands like Nike and Burberry.³⁰³ Imagine a scenario in which “foreign merchants had to use the e-CNY [digital yuan], . . . the government could prohibit transactions with H&M wallets and the store could disappear from digital yuan apps.”³⁰⁴

As Yaya Fanusie, a cryptocurrency expert and adjunct senior fellow at the Center for a New American Security, observed, “[t]his is the other side of the coin—Beijing not as a sanctions evader, but

²⁹⁷ Kyngé & Yu, *supra* note 1.

²⁹⁸ See *Digital Yuan Gives China a New Tool to Strike Back at Critics*, *supra* note 47.

²⁹⁹ Kyngé & Yu, *supra* note 1.

³⁰⁰ *Id.*

³⁰¹ *Digital Yuan Gives China a New Tool to Strike Back at Critics*, *supra* note 47.

³⁰² See Vanessa Friedman & Elizabeth Paton, *What Is Going On with China, Cotton and All of These Clothing Brands?*, N.Y. TIMES (Apr. 2, 2021), <http://www.nytimes.com/2021/03/29/style/china-cotton-uyghur-hm-nike.html>.

³⁰³ See *id.*

³⁰⁴ *Digital Yuan Gives China a New Tool to Strike Back at Critics*, *supra* note 47.

more empowered to enforce its own financial muscle China's digital currency is as much about data as it is about money."³⁰⁵

B. Digital Yuan's Dollar Challenge

Even as China aims to use the digital yuan to further domestic control, it is also taking steps to liberalize and internationalize its monetary system. "As an easily accessible exchange of value with clear international ambitions, the CBDC could be China's way of challenging the dominance of the USD."³⁰⁶ For many years, China has taken a series of actions designed to set the yuan towards an internationalization path. For example, in 2014, China surpassed the United States as the largest trader of goods in the world.³⁰⁷ Thus, for China, "there is a disconnect between the highest proportion of the world's trade going through China and its denomination in USD."³⁰⁸ The government has taken many steps to begin yuan internationalization: (1) it has established an official link between the Shanghai-Hong Kong and Shenzhen-Hong Kong stock markets in 2014 and 2016, respectively, as a step towards the gradual internationalization of the capital market; (2) it allowed investors from China and Hong Kong to trade bonds on each other's interbank markets, resulting in an increase in foreign institutions holding yuan-denominated bonds, approximately in the amount of 82.6 billion yuan or 12.4 billion dollars in 2017; and (3) it established the Belt and Road Initiative which has increased the use of the yuan as a funding mechanism, providing large loans to borrowing countries,³⁰⁹ resulting in a record amount of exported yuan.³¹⁰ The actual loan amount is unclear because fifty percent of

³⁰⁵ *Id.*

³⁰⁶ Wood, *supra* note 9.

³⁰⁷ See China 'Overtakes' US as World's Largest Goods Trader, BBC (Jan. 10, 2014), <http://www.bbc.com/news/business-25678415> [<http://perma.cc/8ENZ-GZMD>] (stating that, despite concerns about China presenting inaccurate information, "analysts also said that even if the issue of inflated numbers was taken into account, China would still take the top spot from the US").

³⁰⁸ Wood, *supra* note 9.

³⁰⁹ See Xinhua, *Chinese Yuan's Global March, a Year After SDR Entry*, CHINADAILY (Oct. 1, 2017, 4:33 PM), http://www.chinadaily.com.cn/business/2017-10/01/content_32728611.htm [<http://perma.cc/F5WZ-5RAE>]; see also BARRY EICHENGREEN & MASAHIRO KAWAI, *RENMINBI INTERNATIONALIZATION: ACHIEVEMENTS, PROSPECTS, AND CHALLENGES* (2015).

³¹⁰ Sebastian Horn, Carmen Reinhart & Christoph Trebesch, *China's Overseas Lending* 14 (Kiel Inst. for the World Econ., Working Paper No. 2132, 2020), http://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/Christoph_Trebesch/KWP_2132.pdf [<http://perma.cc/H3GF-9QRY>].

Developing and emerging countries are now much more indebted to China than to all other major creditor governments combined: According to our

China's lending to developing countries is not reported to either the IMF or the World Bank and is not on the radar screen of credit rating agencies like Moody's or Standard and Poor's.³¹¹ What is clear, however, is the rise in demand for yuan among the countries along the "Silk Road Economic Belt" or the BRI, particularly in Africa—where there was an increase of 123% in RMB used for payments to China from 2014 to 2018.³¹²

In January 2021, the government, via China's CIPS and the Payment & Clearing Association of China—both supervised by the PBOC—formed a joint venture called Finance Gateway Information Services Company with SWIFT to promote global use of the digital yuan.³¹³ The joint venture was designed to facilitate the rollout of digital currency and further "information system integration, data processing and technological consultancy."³¹⁴ As a director at a large state-owned bank remarked, "[a] bigger goal of ours is to challenge the dominance of the US dollar in international trade settlement. . . . But progress towards this will only be gradual."³¹⁵

A digital yuan would give China geopolitical leverage over companies that want access to China's massive internal market. Additionally, the Chinese government would have enhanced power to monitor digital transactions and retaliate against any foreign or domestic entity that holds prohibited opinions on issues like Taiwan, Hong Kong, and human rights. At a government-backed U.S.-China Economic and Security Review Commission hearing, Matt Pottinger, former U.S. deputy national security adviser, stated, "[i]f you think that the United States has a lot of power through our Treasury sanctions authorities, you ain't seen nothing yet That currency can be turned off like a light switch."³¹⁶

estimates, developing and emerging market sovereigns owe 370 billion USD to China compared to 246 billion USD in debt owed to the group of 22 Paris Club member governments

Id.

³¹¹ See *id.* at 1–2.

³¹² See *Rise of the Chinese Influence Strengthens RMB Demand*, SWIFT (June 5, 2019), <http://www.swift.com/news-events/news/rise-chinese-influence-strengthens-rmb-demand> [<http://perma.cc/X86A-66GJ>].

³¹³ See *UPDATE 1-SWIFT Sets Up JV with China's Central Bank*, REUTERS (Feb. 4, 2021, 1:43 AM), <http://www.reuters.com/article/china-swift-pboc/update-1-swift-sets-up-jv-with-chinas-central-bank-idUSL1N2KA0MS> [<http://perma.cc/427J-LY6T>]; see also Kyng & Yu, *supra* note 1.

³¹⁴ See *UPDATE 1-SWIFT Sets Up JV with China's Central Bank*, *supra* note 313.

³¹⁵ Kyng & Yu, *supra* note 1.

³¹⁶ *Digital Yuan Gives China A New Tool to Strike Back at Critics*, *supra* note 47.

It is also apparent that the PBOC's interest in the digital yuan transcends domestic objectives and has significant "geopolitical implications."³¹⁷ As early as 2018, the PBOC was alerted, in a report titled *A Brief Analysis of Stablecoins* by Li Liangsong of the central bank³¹⁸ itself, of the need to explore yuan-pegged cryptocurrency given the rise of stablecoins pegged to the U.S. dollar and the potential that "it could increase the dominance of the dollar in the global economy."³¹⁹ Li Liangsong saw the need to rein in stablecoins to preempt a threat to central institutions and to create an environment in which "[t]he evolution of this monetary system will likely be eventually achieved by a central bank-issued fiat digital currency."³²⁰ PBOC researchers warned that "private U.S.-dollar-based stablecoins prevalent in the market could increase the dollar's global dominance and hurt the renminbi's international use."³²¹ And the vice chair of the China Center for International Economic Exchanges, Huang Qifan, also saw the need to launch a digital currency project as a counterbalance to American financial and political domination of SWIFT.³²² It is through SWIFT, deemed a "financial instrument"³²³ of the United States, that the United States could "exercise global hegemony and carry out long-arm jurisdiction."³²⁴ In explicit terms, Huang acknowledged that a digital yuan "is conducive to the circulation and internationalization of the RMB."³²⁵

Jeremy Allaire, CEO of the crypto-finance firm Circle, described China's digitalization efforts as a way to "bypass the Western banking system."³²⁶ Indeed, China's goal for the yuan is broad and deep, using digitalization to achieve "a stronger foothold in the global financial system of the future. Beijing aims to counter the U.S. role as standards setter, cultivate Chinese government leadership in international engagement on digital currency technology, and potentially offer technological know-

³¹⁷ FANUSIE & JIN, *supra* note 6, at 4.

³¹⁸ See Shaurya Malwa, *People's Bank of China Recommends Yuan-Pegged Stablecoin*, CRYPTOSLATE (Apr. 22, 2021, 12:05 PM), <http://cryptoslate.com/peoples-bank-of-china-recommends-yuan-pegged-stablecoin/> [<http://perma.cc/QR5V-GDEP>].

³¹⁹ *Id.*

³²⁰ *Id.*

³²¹ FANUSIE & JIN, *supra* note 6, at 4.

³²² See *id.* at 5.

³²³ Miranda Wood, *China "Likely to be the First" to Issue Central Bank Digital Currency, Says Official*, LEDGER INSIGHTS (Oct. 29, 2019), <http://www.ledgerinsights.com/china-first-issue-central-bank-digital-currency/> [<http://perma.cc/3JGU-8VC7>].

³²⁴ *Id.*

³²⁵ *Id.*

³²⁶ Wood, *supra* note 9.

how to other interested nations.”³²⁷ By being the first to launch a CBDC, one could say that “China is trying to set international standards on CBDCs and gain an advantage against any potential international competitors, whether from state-based or private digital currencies.”³²⁸

Commentators have noted that “China’s technocrats aspire to build a payments system that is easier for its trading partners to use and harder for America to block.”³²⁹ Because the digital yuan is essentially brand new and details have yet to be worked out, one can only surmise for now how China might use it to block or bypass dollar sanction. Sun Lijian of Fudan University observed as follows:

It is necessary and capable for China to establish a new payment system network to break the monopoly of the US dollar, and the legal digital currency will be an important magic weapon. You can use channels such as ‘overseas online shopping’ consumption, investment and loans from countries along the ‘Belt and Road’ to open up overseas markets.³³⁰

A report from the Hoover Institute warned that a “weakening of US-led sanctions regimes could be among the most significant potential geostrategic implications of the e-CNY.”³³¹ Transactions facilitated through the digital yuan might succeed in avoiding SWIFT and its network of correspondent banks; this is in fact “part of the promise (and peril) of digital currencies tied directly to central banks and linked to scalable cross-border mechanisms.”³³² The digital yuan could “make it easier and cheaper for foreigners to make cross-border payments—and harder for America to block those transactions for geopolitical purposes.”³³³

The government could set up a special zone to handle application for wallets from users abroad.³³⁴ Approved financial institutions could screen foreign applicants through “know-your-

³²⁷ FANUSIE & JIN, *supra* note 6, at 5.

³²⁸ *Id.*

³²⁹ *The Digital Yuan Offers China a Way to Dodge the Dollar*, THE ECONOMIST (Sept. 5, 2022), <http://www.economist.com/finance-and-economics/2022/09/05/the-digital-yuan-offers-china-a-way-to-dodge-the-dollar>.

³³⁰ Sun Lijian, *New Opportunities for the Development of China’s Legal Digital Currency*, CHINA FIN. MAG. (Sept. 14, 2020, 8:02 PM), <http://mp.weixin.qq.com/s/wFWDLkluQGJBQpEhLjo1ZA> [<http://perma.cc/UQ2D-NRSY>]. *But see* Laura He, *China’s Digital Yuan Could Be Used by Athletes and Visitors at the Beijing Olympics*, CNN BUS. (Apr. 19, 2021, 9:32 AM), <http://www.cnn.com/2021/04/19/investing/china-digital-yuan-us-dollar-intl-hnk/index.html> [<http://perma.cc/92LS-YNGA>].

³³¹ HOOVER INST., DIGITAL CURRENCIES: THE US, CHINA, AND THE WORLD AT A CROSSROADS 94 (Darrell Duffie & Elizabeth Economy eds., 2022).

³³² *Id.* at 95.

³³³ *The Digital Yuan Offers China a Way to Dodge the Dollar*, *supra* note 329.

³³⁴ *Id.*

customer” mechanisms.³³⁵ And the process could be further streamlined when foreign users can apply for e-yuan wallets remotely through Chinese banks with a presence in their own home countries.³³⁶ Foreigners who hold e-CNY wallets could then transact with other wallet holders. Once a foreigner has qualified for a wallet, e-CNY transactions with other wallet holders would be easy and cheap; at some point, there would be no need to even have a “Chinese user on the other side of the trade.”³³⁷

Realistically speaking, however, since the United States would not be able to monitor digital yuan transactions the way it could dollar payments, it is possible some such e-yuan transactions would escape U.S. scrutiny. But “if the . . . e-CNY became too big a threat to its sanctions regime, America could in theory ban its use by any institution that wants to retain access to the American clearing system. That would force the world to choose between the dollar and the digital yuan,”³³⁸ and at this stage, it is unlikely the dollar would be abandoned.

Although the e-yuan will not magically allow China to inoculate itself from dollar-based sanctions right away, as this Article has shown, it is one step towards the direction China has been planning for.

CONCLUSION

For decades, the dollar’s hegemonic influence on the international monetary system has been a source of resentment by allies and rivals alike. As this Article has shown, the dollar is not only the world’s reserve currency but also the U.S. national currency, giving the United States unprecedented influence on the world’s economy. In addition, the United States has exploited the dollar’s dominance, using dollar sanctions, often unilaterally, to punish countries whose behavior is deemed unacceptable by the United States. China has objected when American sanctions have swept Chinese companies into its orbit, forcing them to stop transacting with nationals of countries subject to dollar sanctions.

Against that backdrop, the deployment of China’s digital yuan is meant to be a step towards whittling down U.S. dollar hegemony as well as blocking or sidestepping dollar weapons. Although the government professed benign motives for its

³³⁵ *Id.*

³³⁶ *Id.*

³³⁷ *Id.*

³³⁸ *Id.*

interest in and issuance of the digital yuan, the reality is more complex. China's CBDC is designed to accomplish two objectives, international and domestic. First, the digital yuan can jumpstart the internationalization of the yuan and position it as a rival to the dollar. Second, China's establishment of its own digital currency—digitalization with Chinese characteristics—is meant to subdue and manage private threats to the state by bringing the powerful private FinTech sector, as well as private digital currencies, into state control.

As this Article has demonstrated, dedollarization has become a priority for many countries. For Russia, this became a priority as early as 2014 when it was faced with Western sanctions following its annexation of Crimea and has become urgent since its invasion of Ukraine.³³⁹ Given its own quest to dethrone the dollar and its increasing rivalry with the United States, China has not participated in isolating Putin and has staked a nonadversarial, even arguably supportive position towards Russia, as Chinese President Xi Jinping defied the West in a high-stakes visit to Moscow in March 2023. For China, Russia is a “giant lab in which the government is conducting an experiment in forced disengagement from the Western economic, industrial, cultural, and financial sectors,”³⁴⁰ providing Beijing with an opportunity “to observe . . . in real time [how] to prepare for similar shocks”³⁴¹ Locked out of the dollar-based international financial system, Russia has been turning to the yuan.³⁴² After Xi's visit, Putin announced that Russia is “in favor of using the Chinese yuan for settlements between Russia and the countries of Asia, Africa, and Latin America.”³⁴³

Because the digital yuan system is capable of sidestepping traditional payment mechanisms, “[c]itizens will not have to rely on costly commercial banks and messaging services like SWIFT

³³⁹ Mrugank Bhusari and Maia Nikoladze, *Russia and China: Partners in Dedollarization*, *ECONOGRAPHICS* (Feb. 18, 2022), <http://www.atlanticcouncil.org/blogs/econographics/russia-and-china-partners-in-dedollarization/> [<http://perma.cc/CA7K-8KA5>].

³⁴⁰ Mikhail Korostikov, *Xi in Moscow: Russia Offers China a Glimpse of Its Own Future*, *CARNEGIE POLITIKA* (Mar. 24, 2023), <http://carnegieendowment.org/politika/89374> [<http://perma.cc/P6ZB-6DGY>].

³⁴¹ *Id.*

³⁴² *Can Russia and China Succeed in Dethroning the Dollar?* *AL JAZEERA* (Apr. 1 2023), <http://www.aljazeera.com/program/counting-the-cost/2023/4/1/can-russia-and-china-succeed-in-dethroning-the-dollar> [<http://perma.cc/F2H3-468E>].

³⁴³ Fareed Zakaria, *The Dollar is Our Superpower and Russia and China Are Threatening It*, *WASH. POST* (Mar. 24, 2023), <http://www.washingtonpost.com/opinions/2023/03/24/us-dollar-strength-russia-china/>.

for cross-border payments.”³⁴⁴ Transactions can be made digitally through “a simple exchange of tokens,”³⁴⁵ assuming other countries have similar technological ecosystems capable of facilitating token exchanges.³⁴⁶ Other possibilities abound to avoid dollar sanctions through cross-border CBDC initiatives, such as the joint project between the PBOC and the Central Bank of the United Arab Emirates to create a multiple CBDC bridge to “facilitate real-time cross-border foreign exchange payments on distributed ledger technology.”³⁴⁷

Dedollarization is not likely to happen in one fell swoop, precipitated by a Big Bang event. Although dissatisfaction with the dollar and U.S. management of the world’s reserve currency has been bubbling for many years, the dollar has maintained its hegemonic status. This Article, however, has demonstrated that yuan internationalization and digitalization should be understood and considered within a wider context, possibly signaling the beginning of the end of dollar hegemony.

³⁴⁴ Rajesh Bansal & Somya Singh, *China’s Digital Yuan: An Alternative to the Dollar-Dominated System*, CARNEGIE INDIA (Aug. 31, 2021), <http://carnegieindia.org/2021/08/31/china-s-digital-yuan-alternative-to-dollar-dominated-financial-system-pub-85203> [<http://perma.cc/P5Y2-WJZ7>].

³⁴⁵ *Id.*

³⁴⁶ *Id.*

³⁴⁷ *Id.*

The Historical Context of Stock Settlement and Blockchain

*George S. Geis**

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* William S. Potter Professor of Law, The University of Virginia School of Law. E-mail: geis@virginia.edu. Thanks to Peter Hamilton and Caleb Theriot for helpful research assistance.

INTRODUCTION

In 1968, the U.S. stock market collapsed.¹ It did not flatline, of course, but major markets closed every Wednesday in an event now known as the “Wall Street Paperwork Crisis.”² This seizure was not caused by problems at the front end of a trade; brokers and dealers could easily keep up with the various client orders to buy or sell stock. Rather, the difficulties arose from back-end bottlenecks that occurred during the clearing and settlement process—the method by which a share of stock is transferred from seller to buyer.³ This two-step process is necessary because the initial moment of contracting—the trade—is not executed on an instantaneous basis. The shares are exchanged later, thereby fulfilling the contractual commitment, via a settlement and clearing process that is often described as the “back-office plumbing” of securities markets.⁴

The Wall Street Paperwork Crisis of 1968 led to a fascinating Congressional investigation and the establishment of a novel second-generation system for clearing trades.⁵ This solution finessed the paperwork problems arising from first-generation clearing, reopened markets for the full workweek, and made good sense at the time. It remains largely in place today, more than fifty years later, even as our financial markets encompass vastly different trading structures and exponential trading volume.

In 2021, however, sectors of the U.S. stock market stumbled again. Early in the year, investors flooded into GameStop stock on a surprisingly rapid basis, driving up the price of the stock from \$17.25 per share at the start of the year to \$347 per share by January 27, 2021.⁶ On Thursday, January 28, however, several trading firms, including the popular broker Robinhood,

¹ See JOEL SELIGMAN, *THE TRANSFORMATION OF WALL STREET: A HISTORY OF THE SECURITIES AND EXCHANGE COMMISSION AND MODERN FINANCE* 412 (3d ed. 2003).

² See, e.g., *id.*; VIRGINIA B. MORRIS & STUART Z. GOLDSTEIN, *GUIDE TO CLEARANCE & SETTLEMENT: AN INTRODUCTION TO DTCC* 4 (2009).

³ See MORRIS & GOLDSTEIN, *supra* note 2.

⁴ See Seligman *supra* note 1.

⁵ See *infra* Part II.A–B.

⁶ See, e.g., Oscar Gonzalez & David Priest, *Robinhood Backlash: What You Should Know About the GameStop Stock Controversy*, CNET (Mar. 17, 2021, 3:42 PM), <http://www.cnet.com/personal-finance/investing/robinhood-backlash-what-you-should-know-about-the-gamestop-stock-controversy/> [<http://perma.cc/DC8A-8YZR>]; Nikhilesh De, *What Really Happened When Robinhood Suspended GameStop Trading*, COINDESK (Feb. 16, 2021, 8:03 AM), <http://www.coindesk.com/markets/2021/02/16/what-really-happened-when-robinhood-suspended-gamestop-trading/> [<http://perma.cc/FGD5-GKVY>]; Statista Rsch. Dep't, *Daily Stock p-Price of GameStop Corporation from December 30, 2020 to March 22, 2023*, STATISTA (Mar. 23, 2023), <http://www.statista.com/statistics/1199882/gamestop-daily-stock-price/> [<http://perma.cc/6P3P-WACZ>].

told customers that they could no longer sell shares of GameStop or several other hot companies.⁷ The backlash was angry and loud—especially as GameStop’s shares plummeted in value. Some investors felt that they were locked into a position from which they could not escape.

Again, there was a Congressional inquiry into the problem.⁸ What had happened? Some conspiracy theorists alleged that the halt had been the result of a secret plot between Robinhood and hedge fund traders who were losing money from the rise in GameStop’s shares.⁹ But the problem was again connected to the back-office plumbing of stock settlement processes. This time, the second-generation clearing system could not keep up with the desires of traders, and an unexpectedly large capital call by the central clearinghouse that ran the back-office forced brokers like Robinhood to stop their clients’ trading (more on this exact process shortly).¹⁰ This trading halt was not as pervasive as the 1968 crisis, but it was a signal (and just one of many) that the second-generation system was showing its age.

Is a third generation of stock settlement possible? For several years now, commentators and entrepreneurs have promoted blockchain technology as a possible strategy for modernizing stock settlement and mitigating trading and governance concerns that can arise with our current clearing system.¹¹ Numerous experiments have resulted, and some countries have even promised

⁷ See Gonzalez & Priest, *supra* note 6.

⁸ See *Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part I: Virtual Hearing Before the H. Comm. on Fin. Servs.*, 117th Cong. 2–224 (2021) [hereinafter *Game Stopped: Part I*]; *Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part II: Virtual Hearing Before the H. Comm. On Fin. Servs.*, 117th Cong. 5–80 (2021). The unusual situation also led to some unexpected political consensus. For example, Democratic Representative Alexandria Ocasio-Cortez tweeted, “This is unacceptable. We now need to know more about @RobinhoodApp’s decision to block retail investors from purchasing stock while hedge funds are freely able to trade the stock as they see fit.” See Alexandria Ocasio-Cortez (@AOC), TWITTER (Jan. 28, 2021, 8:36 AM), <http://twitter.com/aoc/status/1354830697459032066> [<http://perma.cc/K8LY-E3LR>]. Republican Senator Ted Cruz responded, “[f]ully agree,” and Donald Trump Jr. added, “[t]his is what a rigged system looks like, folks.” See Ted Cruz (@tedcruz), TWITTER (Jan. 28, 2021, 8:47 AM), <http://twitter.com/tedcruz/status/1354833603943931905?lang=en> [<http://perma.cc/8KQS-FL8M>]; Donald Trump Jr. (@DonaldJTrumpJr), TWITTER (Jan. 28, 2021, 6:07 AM), http://twitter.com/DonaldJTrumpJr/status/1354793103090212865?ref_src=twsrc%5Etfw [<http://perma.cc/4N29-TQRN>].

⁹ See *Game Stopped: Part I*, *supra* note 8, at 45.

¹⁰ See *id.* at 45–46.

¹¹ See, e.g., Brandon Ferrick, *Modernizing the Stockholder Shield: How Blockchains and Distributed Ledgers Could Rescue the Appraisal Remedy*, 60 B.C. L. REV. 621 (2019); George S. Geis, *Traceable Shares and Corporate Law*, 113 NW. U. L. REV. 227 (2018); Kevin V. Tu, *Blockchain Stock Ledgers*, 96 IND. L.J. 223 (2020).

to move their entire stock market infrastructure to the blockchain.¹² Yet despite this enthusiasm, progress towards stock settlement systems on the blockchain has been slow in the United States. Why?

One plausible explanation is that market participants are risk averse. The current, second-generation clearing system seems to work out okay—most of the time—and incumbents are naturally worried about the possibility that exchanging a seemingly adequate system for the shiny new model might lead to structural collapse. Moreover, recent turmoil in cryptocurrency markets and infrastructures has undoubtedly led some to question whether the promise of underlying blockchain technology has been overhyped.

The thesis of this Article, however, is that the historical context for stock settlement has slowed experimentation with reform via blockchain technology. Ironically, some of the same rules that were promulgated to enforce modernization efforts for second-generation clearing and settlement five decades ago now seem to stand in the way of a potentially better system.¹³ Said differently, ossified laws and a limited awareness of the historical rationale for current regulatory requirements may be hindering technological updates to stock settlement and clearing. Moreover, the resulting institutional structure of settlement has led to a relatively slow-moving and risk-averse bureaucracy where some players have suboptimal incentives to update settlement technology.

This Article traces the history, politics, and policy of stock settlement regulation. It highlights the transition to our current system, evaluates legal barriers to innovation, and discusses the possibility of technological, regulatory, or market reforms that could facilitate transition to a blockchain-based settlement platform. The organization is chronological: Part I describes the first-generation system for clearing stock trades, focusing on Wall Street in the 1960s and the breakdown in settlement processes. Part II looks at the second-generation fix, how it works, and why it can sometimes lead to legal and business problems in today's economy. Finally, Part III examines the promise of the third-generation settlement technology, surveys some of the lingering barriers that slow experimentation, and offers a few suggestions for moving forward. A brief conclusion summarizes the discussion.

¹² See, e.g., Jackie Range, *New Australian Securities Exchange Chief Defends Blockchain Plans*, FIN. TIMES (Sept. 4, 2016), <http://www.ft.com/content/45851b58-62d1-11e6-8310-ecf0bddad227> [<http://perma.cc/DP97-B45Q>].

¹³ See *infra* Part III.B.

I. FIRST GENERATION: PEN & PAPER

Our mental model for corporate governance often envisions a stable body of shareholders who keep an eye on key decisions and cast their votes year after year. But we do not live in a static world, of course, and ownership patterns often change as investors buy and sell on secondary markets. How exactly do the firms, shareholders, and various exchange intermediaries keep track of all this and conduct this transfer of rights? And as importantly, how does the efficacy of settlement systems impact corporate governance and other goals of corporate law? To understand these questions, one must go back in time. The history of back-office stock settlement remains relevant for modern analysis, so let us turn to Wall Street in the 1960s.

A. Wall Street in the 1960s

Stock trading in the 1960s looked almost nothing like it does today.¹⁴ Even many of the key players are now long-forgotten and mysterious names: Auchincloss, Redpath & Parker; F.I. Dupont & Co.; Hayden, Stone & Co.; Dempsey-Tegeler; and Goodbody & Co., just to name a few.¹⁵ Shares typically traded on one of several exchanges—the New York Stock Exchange (“NYSE”) was the most important, but the American Stock Exchange (“AMEX”) offered a viable alternative.¹⁶ Smaller companies in Boston or Chicago or California might use regional exchanges, such as the Pacific Stock Exchange.¹⁷ And the upstart over the counter (“OTC”) exchange had recently begun to knit together a virtual community of traders doing business over the phone.¹⁸

Putting aside the OTC for the moment, exchanges relied on the presence of human traders who would arrive at the pits each weekday in their colorful jackets to buy or sell some dedicated array of stocks. Not just anyone could saunter into the trading pits, of course; one had to belong to an exchange to trade, and membership was limited.¹⁹ The dominant NYSE, for instance, had about 650 member firms, each of whom owned a “seat” on the exchange.²⁰ Roughly 400 of these firms served as representative

¹⁴ See Wyatt Wells, *Certificates and Computers: The Remaking of Wall Street, 1967 to 1971*, 74 BUS. HIST. REV. 193–94 (2000).

¹⁵ See JOHN BROOKS, *THE GO-GO YEARS: THE DRAMA AND CRASHING FINALE OF WALL STREET'S BULLISH 60S* 281, 318 (1998).

¹⁶ See Wells, *supra* note 14, at 196–97.

¹⁷ See *id.* at 197.

¹⁸ See *id.*

¹⁹ *Id.* at 196.

²⁰ *Id.*

agents for individual or institutional investors.²¹ If you wanted to sell 1,000 shares of Ford at market prices, for example, then you would contact your personal broker at, say, Hayden, Stone & Co., who would then direct another Hayden partner in the trading pits to find a buyer. If the timing was good and a buyer could be found for the shares, then a trading match would be made at the designated location in the NYSE. If no corresponding buy order stood ready for execution, however, then eventually a market maker might step in to fill the order (probably paying less than the last quote for the stock). That was the primary role of the other 250 NYSE members (known as dealers), who traded, often on their own accounts, to smooth markets.²² By buying on a dip during slow markets and selling at a premium during hot ones, these dealers could perhaps make a profit.

While the business model of each broker-dealer might differ according to its relative emphasis on client services²³ or internal trading, most entities were legally structured as partnerships.²⁴ This was not necessarily because a partnership entity made the most sense for broker-dealers; one can imagine that many firms might have preferred the benefits of broadly held corporations. But exchange membership rules limited their degrees of freedom.²⁵ The NYSE, for instance, required its members to use either a partnership or a corporation that limited stock ownership to those who worked at the firm.²⁶ And while this type of arrangement was common fifty years earlier, by 1960 it seemed an outlier.²⁷ Many other industries had moved to Berle-Means corporations—where widely dispersed investors put money into businesses controlled by centralized management teams.²⁸ One likely explanation for this anachronistic legal structure is that the member firms worried that opening the NYSE's doors to broadly capitalized firms would quickly swamp the smaller players.²⁹ But this self-protection strategy also had an unfortunate consequence: it would

²¹ *Id.* at 196–97.

²² *Id.*

²³ The most obvious source of client revenues arose via broker commissions on trading transactions. But firms could also generate substantial interest from lending activities such as margin facilities that allowed clients to make leveraged trades.

²⁴ Wells, *supra* note 14, at 198.

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.*

²⁸ ADOLF A. BERLE & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* 4–5 (1932).

²⁹ BROOKS, *supra* note 15, at 312–15.

be difficult for distressed firms to raise more capital when the business cycle turned down.³⁰

So far, we have been focusing on the visible, front-end of the trade. Continuing the example above, when your Hayden broker sold your Ford stock, the economic effect of this exchange could be noted quickly. One thousand Ford shares were decreased on your account, and your cash balance rose from the anticipated proceeds. But this was just a way to account for the expected result of your contractual commitment. Said differently, the traders did not actually hand your stock certificates over for cash when they executed your trade. How then did back-end clearing and settlement work circa 1960?

The process took time because legal ownership of stock was typically evidenced by a paper stock certificate.³¹ Indeed, in many states, corporate law statutes required as much.³² Thus the sale of stock by your New York broker was analogous to the sale of your car by an agent in another state. The contract might be executed immediately, but the actual closing would need to be delayed until legal evidence of ownership could be transmitted to the new buyer. Some individual investors would keep their stock certificates in a personal filing cabinet or in a safety deposit box at a local bank. This meant that the selling investor might need to drive down to their bank the following Monday, pull out the right stock certificates, and mail these to their broker. The broker would then find a notary to evidence the sale and send the certificates along to the corporation's transfer agent.³³

This transfer agent served as the central hub of the stock clearing process. Individual firms, like Ford, would typically outsource the processing of secondary market stock sales to these agents because it was cumbersome to track and process all the transfers.³⁴ Thus, Ford's transfer agent might receive the certificates and instructions from a seller's broker, match this up against the cash received from the buyer's broker, cancel the old stock certificate, and issue a new one in the name of purchaser. Buyer and seller might get their new property a few days later. Ford itself would probably not even be aware of this transfer at

³⁰ See *infra* notes 120–151 and accompanying text.

³¹ See MORRIS & GOLDSTEIN, *supra* note 2, at 4.

³² See, e.g., Martin J. Aronstein, *The Decline and Fall of the Stock Certificate in America*, 1 J. COMPAR. CORP. L. & SEC. REGUL. 273, 274 (1978) (discussing the legal move away from requiring paper certificates in state corporate law).

³³ See Wells, *supra* note 14, at 201.

³⁴ *Id.*

that exact moment, but it could always ask its transfer agent for a tabulation of current shareholders at any given point in time.

It should quickly be apparent that this was not an instantaneous process. A seller might get sidetracked and take a few days to deliver the certificates. A broker might get busy as volume grew high and fall behind on sending instructions or obtaining the necessary notarizations. And transfer agents could also get swamped. Moreover, the example above assumes a perfect match of shares moving from one seller to one buyer. Often, however, several buyers might purchase a smaller portion of the seller's shares. In that case, the seller's single certificate would need to be canceled and splintered into multiple new certificates.³⁵ Stock clearing and settlement in 1960 could take time.

To be sure, not all transactions had to undergo such extensive processing. Some individual investors were comfortable having their shares held in "street name."³⁶ Under this arrangement, the broker was listed as the registered owner of the stock and the actual investor was considered the beneficial owner.³⁷ Usually this would occur when an investor was a frequent trader (who did not wish to continually mail in paperwork) or a margin trader (who might be required by their broker to keep the certificates in street name as collateral).³⁸ This meant that the stock certificates could be kept in a broker's office, and these agents could settle trades more quickly.³⁹ The most obvious source of efficiency came from the simple fact that actual investors would not have to find and mail in their certificates. But there were several other time saving features of street name ownership. For instance, the process of "netting" might be used to minimize the actual delivery requirement.

The concept of netting is grounded in the fact that slightly delayed batch processing can sometimes be more efficient than immediate piecemeal processing.⁴⁰ With stock settlement, a broker might not send over a certificate to a buyer immediately upon sale—even if it held the shares in street name. Rather, it would wait until markets had closed for the day and then have its accountants add

³⁵ *Id.*

³⁶ *See id.* at 202; *see also* Marcel Kahan & Edward B. Rock, *The Hanging Chads of Corporate Voting*, 96 GEO. L.J. 1227, 1237–38 (2008) (describing the concept of street-name holding in more detail).

³⁷ *See* Geis, *supra* note 11, at 232–33.

³⁸ Wells, *supra* note 14, at 202.

³⁹ *Id.*

⁴⁰ *See, e.g.*, Steven L. Schwarcz, *Central Clearing of Financial Contracts: Theory and Regulatory Implications*, 167 U. PA. L. REV. 1327, 1351 (2019).

up the net effects of all trades.⁴¹ If it turned out that (1) the broker had represented both buyers and sellers of a given stock that day; (2) a counterparty broker also happened to be the same entity for multiple trades; and (3) the traded stock was held in street name, then there was an opportunity for a “net settlement.”⁴²

To illustrate, come back to our Ford stock sale, but now assume that all the 1,000 shares are held by Hayden, Stone & Co. in street name. Suppose that Hayden sells the shares to a buyer represented by a different broker, Goodbody & Co. And suppose further that later in the day a different investor represented by Goodbody happens to sell 1,000 shares of Ford to someone represented by Hayden for the exact same price. How should this trade be cleared? With netting, the brokers might work out a nice arrangement: the Ford stock certificates can stay in Hayden’s vault, under its name, without a need to retitle through Ford’s transfer agent. Instead, Hayden can just mark its accounts to take the stock away from the first seller in exchange for a cash increase in their account. The account for Hayden’s later client can be used to balance this out by decreasing their cash balance and noting that Hayden’s shares are now being held for the benefit of this new owner. And Goodbody can do the same thing for its two investors.

This all assumes, of course, that the new buyers are comfortable with street name ownership; otherwise, the broker may need to move shares out of its name and into the name of the purchaser. Moreover, the example is a best-case scenario of perfect netting. In the real world, fewer transactions will match up exactly, but adjustments could still be made that sidestepped the need to retitle at least some stock certificates. If the later buyer paid a higher or lower price, for example, then a straight cash payment from one broker to the other could true up the exchange. Or perhaps multiple lots of smaller transactions could be aggregated to create a match for the initial 1,000 shares. There might need to be a residual exchange between each pair of brokers, but netting everything out and batch processing at the end of the day often seemed a lot easier than retitling all the certificates.⁴³

⁴¹ See, e.g., Wells, *supra* note 14, 202 (describing how exchange members submitted records of transactions at the end of each trading day to the “net out” trades).

⁴² See *id.* at 202 (giving an example of “netted out” trades).

⁴³ It is worth noting that the OTC market worked a bit differently. On the front end, traders were not physically proximate. Instead, they sat in distributed offices around the country and traded over the phone. In the earliest days of the exchange, when an OTC brokerage house received a buy or sell order for stock traded on this exchange, they would call around to find a counterparty and make a deal over the phone. Wells, *supra* note 14, at

One final topic will finish setting the stage: the regulation of stock exchanges. Federal securities laws from the 1930s gave the Securities and Exchange Commission (“SEC”) ultimate authority in this space.⁴⁴ But much of the SEC’s focus during this time was centered on the detection and elimination of fraud.⁴⁵ Accordingly, many of the detailed operational rules were left to the exchanges themselves.⁴⁶ The NYSE and other exchanges promulgated a series of membership rules that purported to regulate market operations.⁴⁷ This self-regulation was justified, in part, based on the significant resources of the NYSE—which were understood to exceed even those of the SEC at this time.⁴⁸ One can also imagine how the political influence of Wall Street might reinforce this arrangement.

In any event, such was the stock market of the 1960s. The overall structure may not have reflected an optimal arrangement—manual clearing with pen and paper is hardly a scalable system. But processes generally seemed to work out during the first half of the decade. Indeed, stocks continued to build on the prosperity of the 1950s.⁴⁹ Dividend yields were steady.⁵⁰ Interest rates were low.⁵¹ Individual investors continued to enter the market, attracted by Wall Street advertisements, a strong economy, and the expectation of capital gains.⁵² New institutional players also emerged as insurance companies, pension funds, and mutual funds charged into stocks.⁵³ Prices responded accordingly, and everything seemed terrific.⁵⁴ But deep within the system there was a growing problem: the back-office clearing and settlement processes could not

197. By the early 1970s, the development of an automatic quoting system, NASDAQ, would streamline this process. *Id.* at 213.

44 Specifically, the Securities Exchange Act of 1934 created the SEC and established its authority over many aspects of the securities industry. See 15 U.S.C. § 78d(a).

45 See generally Seligman, *supra* note 2, at 349.

46 See *id.*; see also Roberta S. Karmel, *The Future of Corporate Governance Listing Requirements*, 54 SMU L. REV. 325, 326–30 (2001); Wells, *supra* note 14, at 197–98. For a more modern assessment of regulation by stock exchange listing rules, see Geeyoung Min & Kwon-Yong Jin, *Relational Enforcement of Stock Exchange Rules*, 47 BYU L. REV. 149, 157 (2021).

47 See Wells, *supra* note 14, at 197.

48 *Id.* at 197–98.

49 See *id.* at 194.

50 See *S&P 500 Dividend Yield by Month*, NASDAQ DATA LINK, http://data.nasdaq.com/data/MULTPL/SP500_DIV_YIELD_MONTH-sp-500-dividend-yield-by-month [<http://perma.cc/GRV9-G37Y>] (last visited Jan. 18, 2023).

51 See *Monthly Interest Rates 1937–99*, SOC. SEC. ONLINE, <http://www.ssa.gov/oact/progdata/interestrates1937-99.html> [<http://perma.cc/F275-BPZD>] (last visited Jan. 18, 2023).

52 See generally ROBERT SOBEL, *N.Y.S.E.: A HISTORY OF THE NEW YORK STOCK EXCHANGE, 1935–1975* 314 (1975); Wells, *supra* note 14, at 194.

53 See Wells, *supra* note 14, at 194.

54 See *id.*

keep up with such rapid growth.⁵⁵ In 1950, the total volume of stock exchanged on the NYSE was about two million shares per day.⁵⁶ By 1967, that number was closer to ten million shares—and climbing.⁵⁷ Eventually, something had to give.

B. The Paperwork Crisis of 1968

On March 31, 1968, Lyndon B. Johnson appeared on national television to announce that he would not seek another term as president and that he would be halting some American bombing in Vietnam.⁵⁸ This decision shocked and exhilarated the nation, even as it solidified differences between various social groups during this turbulent era in U.S. history.⁵⁹ On Wall Street, Johnson’s abdication triggered a stock buying frenzy.⁶⁰ The next day saw a record seventeen million shares trade hands on the NYSE.⁶¹ The AMEX and OTC markets exploded in volume as well during the ensuing weeks.⁶²

All this euphoria placed even greater pressure on back-office settlement practices, and the system began to buckle.⁶³ The length of time needed to clear and settle trades grew larger and larger, sometimes extending into weeks.⁶⁴ Brokers were supposed to settle trades and get new certificates to buyers within five days; the inability to meet this deadline would be termed a delivery “fail.”⁶⁵ In April 1968, amid growing concern, the NYSE conducted an examination of fail volume and concluded that its members were sitting on about \$2.7 billion worth of fails (in all markets).⁶⁶ By December of that year, NYSE member fails had risen to \$4.1 billion.⁶⁷

⁵⁵ *See id.* at 203.

⁵⁶ *See id.* at 194.

⁵⁷ *See id.*

⁵⁸ *See* Lyndon B. Johnson, *March 31, 1968: Remarks on Decision Not to Seek Re-Election*, U. VA. MILLER CTR., <http://millercenter.org/the-presidency/presidential-speeches/march-31-1968-remarks-decision-not-seek-re-election> [<http://perma.cc/BD2C-2CHB>] (last visited Jan. 18, 2023).

⁵⁹ *See* Matthew Dallek, *LBJ Announced He Wouldn’t Run Again. Political Chaos Ensued*, HIST., <http://www.history.com/news/lbj-exit-1968-presidential-race> [<http://perma.cc/482Y-CDNH>] (last updated Sept. 10, 2018).

⁶⁰ Wells, *supra* note 14, at 195.

⁶¹ *See* Sobel, *supra* note 52, at 315.

⁶² *See* Wells, *supra* note 14, at 196.

⁶³ *See id.* at 203.

⁶⁴ *See id.*

⁶⁵ *See id.*

⁶⁶ *See id.*

⁶⁷ *See id.*

This was a real problem because exchange fails would not necessarily work themselves out over time. They might be caused by clerical errors, rather than just delays, and some mistakes might never be rectified. Indeed, because Wall Street brokers were intertwined with each other, mistakes made in one broker's back office could create accounting problems for their counterparties. In some cases, a transaction would just be labeled with a "DK," for "don't know," when the counterparty's records did not match.⁶⁸ Moreover, undelivered securities lingered as a contractual obligation of the broker, and in some cases, the extent of these liabilities began to approach (or exceed) some firms' capital levels.⁶⁹ Clients might understandably refuse to pay for their stock until it was actually delivered—causing brokers to effectively provide bridge financing for the transaction (because the brokers had most likely already paid for the stock that was not yet delivered from the seller's broker).

How could Wall Street solve these problems? The most obvious answer was to hire more back-office clerks, and extend the hours of current employees, to chase down failed exchanges and process the flood of ongoing trading.⁷⁰ The working day for clerks moved from eight hours to ten or twelve-hour days, and weekend work become routine.⁷¹ Brokers began to run night shifts where roomfuls of clerks would scramble to process the previous days' trades. And the search for new employees surged.⁷² But it still did not seem like enough. As the armies of clerks expanded, quality control decreased, mistakes increased, employee morale plunged, and the tasks grew Sisyphean.⁷³ Annual turnover for the back-office workers approached fifty percent.⁷⁴

The upshot of all this was a nightmare situation where many stock trades would simply not clear. One government report described the situation as "a trackless forest."⁷⁵ But a Lehman Brothers report from May 1968 perhaps offers the best insight into the struggle: it stated after a comprehensive internal review that the firm discovered "it had \$473 million in securities whose owners

⁶⁸ *See id.* at 206.

⁶⁹ *See id.* at 204.

⁷⁰ *See* SEC. & EXCH. COMM'N, STUDY OF UNSAFE AND UNSOUND PRACTICES OF BROKERS AND DEALERS, H.R. DOC. NO. 92-231, at 14 (1971) [hereinafter "UNSAFE AND UNSOUND"].

⁷¹ Wells, *supra* note 14, at 205.

⁷² *See id.* By one account, employment listings in the New York Times for clerk positions regularly stretched into 100 columns of "help wanted" advertisements. *Id.*

⁷³ *See id.* at 205–06.

⁷⁴ *Id.* at 206.

⁷⁵ UNSAFE AND UNSOUND, *supra* note 70, at 13.

it could not locate, and that it owed clients \$219 million in securities that it could not find.”⁷⁶ The problem had become existential.

C. Regulatory Pressure to Reform

Early in 1968, the SEC did not seem too bothered by all this, apparently viewing the back-office problem “as confined to individual firms and not posing a threat to the viability of the industry as a whole.”⁷⁷ Eventually, broker-dealers might catch up when stock volumes fell. But the firms themselves were worried. A month before Lehman’s shocking report, in April of 1968, the exchanges and several large banks decided to create an ad hoc committee to evaluate the paperwork crisis and plan a response.⁷⁸ Then, in June 1968, the committee decided that it had no other choice but to halt all stock trading on Wednesdays.⁷⁹

Closing the stock markets to let clearing and settlement catch up with recent trades was not a new idea. It had been tried during the summer of 1967, when markets were closed ninety minutes early for nine days.⁸⁰ Similarly, stock markets closed early for six weeks in early 1968.⁸¹ But shutting down the exchanges for an entire day each week, without an end in sight, represented a far greater escalation of events and a clear sign that the system was broken. Even worse, it soon seemed clear that the Wednesday closings were not doing much to help solve the problem. Investors who wanted to buy or sell just shifted their trades to other days of the week, pushing up the volume on Tuesdays or Thursdays—and continuing to deluge the back office.⁸²

Could anything else be done? By now, the SEC was growing concerned. It was especially troubled by the possibility that the exchanges’ policy of self-regulation had caused them to go soft on delinquent member firms. This is not to say, however, that the exchanges had done nothing: the NYSE had been pressuring its members to clean up their settlement practices and backed up these threats with sanctions.⁸³ These penalties included advertising bans, limits on the amount of business that a

⁷⁶ Wells, *supra* note 14, at 206.

⁷⁷ *Id.* at 207 (quoting S. REP. NO. 92-1519, at 10 (1972)).

⁷⁸ *Id.*

⁷⁹ *See id.* at 207–08.

⁸⁰ *Id.* at 207.

⁸¹ *Id.*

⁸² *Id.* at 214.

⁸³ *Id.* at 208.

delinquent firm could accept, and, in extreme cases, an order to reduce business volume through branch office closures.⁸⁴

Over the next month, the SEC decided that it had to act directly. It announced that any broker who purchased stock for a client when they had “reason to believe that [they] will not be able to deliver the security . . . promptly” would be in “violation of the anti-fraud provisions of the federal securities laws.”⁸⁵ This sent a very clear signal that the SEC was upset—by linking the paperwork crisis to the strong antifraud mandate of the agency. But while the announcement might have scared some individual brokers, it probably had little overall effect. The SEC did not have the resources to investigate even a small portion of the delivery fails, and most brokers could respond that at the time of the trade they genuinely thought that everything would clear.⁸⁶ All the SEC could really do was put more pressure on the exchanges by threatening to end self-regulation.

One of the greatest risks from the paperwork crisis was the possibility that a thinly capitalized broker would be unable to meet its obligations to clients. If this occurred, it could spark a run on other brokers by investors who feared a similar outcome. Although bank deposits were federally insured (up to a certain limit) through the Federal Deposit Insurance Corporation (“FDIC”), assets deposited with securities brokers remained uninsured as of 1968.⁸⁷ Investors had to trust that money or securities deposited with a broker would not disappear in a crisis. The NYSE was acutely aware of this concern, and it had investigated a smaller member, Pickard & Co., earlier in 1968 as rumors began to swirl about Pickard’s insolvency.⁸⁸ Despite initial assurances that Pickard could meet its obligations, the NYSE was eventually forced to bail out the firm—using its own money to shut down Pickard and pay out the clients.⁸⁹ The eventual loss to the NYSE was relatively small, but bail outs were clearly not a replicable, long-term solution to the problems posed by chaotic paperwork.

⁸⁴ *Id.*

⁸⁵ *The Administration of the Laws Pertaining to the Regulation of the Securities Markets by the Administrative Agency and by the Self-Regulatory Agencies Involved, Hearings Before the Subcomm. on Com. and Fin. of the Comm. on Interstate and Foreign Com. H.R.*, 91st Cong. 49 (1969) [hereinafter *1969 Congressional Hearings on Securities Market*].

⁸⁶ See Wells, *supra* note 14, at 209.

⁸⁷ See *1969 Congressional Hearings on Securities Markets, supra* note 85, at 90.

⁸⁸ See Wells, *supra* note 14, at 209.

⁸⁹ See *id.* In addition to paperwork problems and uncertainty about the extent of the firm’s obligations, it seems that Pickard’s partners also took an unauthorized capital withdrawal. See *id.*

New computing technology seemed like a plausible answer. Some investment had already occurred, and the NYSE member firms did lean heavily on computer investments during 1968 to 1970.⁹⁰ But this was still not a magic bullet to solve the settlement and clearing backlog. There was a limit to what computers could really do. They might help make and balance bookkeeping entries—and thereby reduce the possibility of human tabulation or recording errors.⁹¹ But computers could not alleviate bad or incorrect information that was sent over from another broker-dealer.⁹² And sometimes software glitches or under-trained human operators could cause additional problems.⁹³ There was promise in computing technology, but it was no panacea.

In short, by the end of 1968 the situation on Wall Street had grown desperate. Markets remained closed on Wednesdays.⁹⁴ There were rumors of rampant drug use among some Wall Street workers.⁹⁵ The United States Attorney General, in a subsequent Senate investigation of the crisis, even estimated that organized criminals had taken advantage of the chaos to steal more than \$400 million in securities.⁹⁶ Something had to be done, and the best possibility seemed to lie in a fundamental reconceptualization of the way that stock trades should be settled and cleared.

II. SECOND GENERATION: IMMOBILIZED FUNGIBLE BULK

A. Addressing the Paperwork Crisis

The origins of a second-generation settlement system could already be found in the street-name stock holding alternative that some investors used in lieu of personal vesting.⁹⁷ Recall that much of the paperwork problem arose from individually titled stocks that had to be notarized, delivered to brokers and transfer agents, retitled, and redistributed. When a certificate was held in street name, things were simplified. Each pair of brokers could net their positions at the end of the day and make a transfer of stock to true up all trades made by their clients in a firm's stock during that period.⁹⁸ The other changes were settled with internal bookkeeping

⁹⁰ See UNSAFE AND UNSOUND, *supra* note 70, at 13–14, 19.

⁹¹ See Wells, *supra* note 14, at 210.

⁹² See *id.*

⁹³ See UNSAFE AND UNSOUND, *supra* note 70, at 13–14, 19.

⁹⁴ See BROOKS, *supra* note 15, at 205–06.

⁹⁵ See *id.* at 200–04.

⁹⁶ See Marjorie Hunter, *Big Board Too Busy to Stop 1968-69 Thefts*, N.Y. TIMES, June 24, 1971, at 53.

⁹⁷ See *supra* notes 36–39 and accompanying text.

⁹⁸ See generally *supra* note 40 and accompanying text.

adjustments. If this idea could be extended, it might form the backbone of a second-generation clearing system that could further alleviate the paperwork crisis.

The key was to take the concept one step further by creating a centralized clearing entity that could serve as the record holder of stock for brokers.⁹⁹ Then, instead of executing periodic certificate transfers between pairs of brokers, this central entity could simply make another bookkeeping adjustment. This would reflect the net change in the security position between all the clients of each broker and eliminate a need to ever retitle the stock certificates. In short, the goal would be to hold most stock certificates in “immobilized fungible bulk” at a central depository.¹⁰⁰

The NYSE had already been working on this concept for several years. In 1964, it launched an entity known as the Central Certificate Service (“CSS”) to hold securities on account for individual broker-members.¹⁰¹ CCS would invest heavily in computing technology and start out by accepting several hundred million shares of the roughly 1,200 companies that traded on the NYSE.¹⁰² Over time, the plan was to extend CCS’s activity by expanding the immobilized pool of NYSE stocks and moving into the companies that traded over other exchanges.¹⁰³

How exactly did it work? Suppose you ran a medium sized NYSE brokerage house that held a total of 500,000 shares of General Electric (“GE”) stock in street name for several hundred clients. Before the establishment of CCS, you would execute a sale of GE stock for your clients by finding a trading partner on the exchange and booking the sale. Then you would decrease your client’s account by the number of GE shares that they sold and increase their cash balance by the proceeds (less your commission). If no other transaction in GE stock took place that day involving the buyer’s broker, you would arrange to transfer and retitle your client’s share certificates (held in your name as broker) to the other broker in exchange for a cash payment from that broker (thus effectively funding your client’s cash increase). But if there were other GE trades that day involving both brokerage houses, you could net the trades and transfer only the residual shares. Suppose you had ten clients sell 7,500 shares of GE and twenty clients buy 10,000 shares of GE—and suppose that Lehman Brothers took the

⁹⁹ See Kahan & Rock, *supra* note 36, at 1227.

¹⁰⁰ See *id.*

¹⁰¹ See Wells, *supra* note 14, at 211.

¹⁰² See *id.*

¹⁰³ See *id.* at 212.

other side of every trade. If all the shares were held in street name, then at the end of the day Lehman could just send you 2,500 shares. By contrast, if none of the shares were held in street name, thirty sets of stock transfers would need to occur (between all the pairs of buyers and sellers).

With CCS, however, the clearing process became even easier. Before any trades occurred, your brokerage and Lehman would have moved the record ownership of all GE stock to CCS—which would continually remain as the formal record owner. Then, on the day of the GE stock trades, there would be no need to engage in certificate transfers. CCS would simply adjust its accounts to show that 2,500 shares of the GE stock it had been holding on Lehman’s account were now being held for your brokerage account.¹⁰⁴ There was no need to designate which specific shares had transferred—leading to the “immobilized fungible bulk” descriptor. You would then send Lehman the net cash spent by your clients to purchase the incremental 2,500 shares. Finally, you and Lehman would adjust all the various buy and sell positions of your clients via internal transfers. This assumed, of course, that your clients would not insist on individually titled certificates. And things would grow more complicated with additional broker pairs. But if it worked, central clearing could lead to a faster settlement process and clear up the back-office bottlenecks and mistakes.

Yet while this all sounded good in theory, CCS got off to a slow start. One problem arose from state corporation laws. At the time, almost every state required a stock certificate to be issued as evidence of investor ownership.¹⁰⁵ The CCS system flouted that obligation, and state laws had to be changed to support centralized record holding in fungible bulk.¹⁰⁶ In addition, brokers who extended investors’ credit for margin investing wanted the stock certificates in their vaults as collateral for these loans.¹⁰⁷ And state laws required large bank trustees who managed stock investments for institutional investors, such as mutual funds and insurance companies, to keep the certificated stock in their own vaults.¹⁰⁸ CCS would not work unless legal changes took place in every state. By 1968, four years after the

¹⁰⁴ *See id.*

¹⁰⁵ *See* Aronstein, *supra* note 32; *1969 Congressional Hearings on Securities Markets*, *supra* note 85, at 265.

¹⁰⁶ *See 1969 Congressional Hearings on Securities Markets*, *supra* note 85, at 265.

¹⁰⁷ *See* Wells, *supra* note 14, at 212.

¹⁰⁸ *Id.*

birth of CCS, all fifty states had finally changed their corporate laws to sanction centralized certificate holding and CCS bookkeeping transfers of stock ownership.¹⁰⁹ The margin loan and bank trustee problems took a little longer to resolve, but by February 1969, CCS was open for business.¹¹⁰

This second-generation clearing system was not an immediate success. Technical glitches arose, and CCS stopped accepting new certificate deposits a month after opening.¹¹¹ It was able to clear the stocks that had already been deposited, but CCS did not expand further until August 1969.¹¹² As the months wore on, however, and more legal barriers fell away, the new system blossomed.¹¹³ CCS began to accept stock certificates from AMEX firms in 1970 and from some popular OTC companies the following year.¹¹⁴ By 1971, CCS estimated that it was clearing more than three billion shares annually and had cut approximately seventy-five percent of the certificate transfers that would have been required under the former system.¹¹⁵

As centralized clearing kicked in, Wall Street's paperwork crisis began to abate. Delivery fails, which had reached \$4.1 billion in December 1968, began to drop steadily during 1969.¹¹⁶ The NYSE elected to reopen markets on Wednesdays of that year, despite a strongly worded SEC "suggestion" not to do so.¹¹⁷ And while the NYSE did shorten trading hours by ninety minutes each day, as 1969 wore on, it was able to return to a normal closing time.¹¹⁸ The CCS plan seemed to be working—aided, perhaps, by lower trading volumes that accompanied a market downturn.¹¹⁹

Before long, however, the forces pushing this transition to a new framework for stock settlement would also contribute to vast changes in the early 1970s relating to the both the market structure of Wall Street and regulatory protections for investors. Let us consider each development in turn.

¹⁰⁹ *See id.*

¹¹⁰ *See id.*

¹¹¹ *See id.* at 211–12.

¹¹² *Id.*

¹¹³ *Id.* at 212.

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *See 1969 Congressional Hearings on Securities Markets, supra* note 85, at 10.

¹¹⁷ *See Wells, supra* note 14, at 214.

¹¹⁸ *See id.*

¹¹⁹ *See BROOKS, supra* note 15, at 204–06.

B. Wall Street Transformed

New stock settlement methods required brokers to overhaul their back-office processes, typically through investments in computing technology.¹²⁰ The expense could be painful, especially for smaller brokers. Some firms also suffered from the need to clean up damage under the old settlement system.¹²¹ They discovered new debt positions in the wreckage, indicating that they owed substantial amounts of cash or securities to a Wall Street counterparty or private investor.¹²² Some apparent obligations were phantoms that disappeared with further research, but other unexpected obligations were genuine. One recurring problem seemed to be that brokers had failed to pay investors dividends on stock held in street name.¹²³ The SEC later estimated that the need to sort out various obligations would collectively cost Wall Street brokers over \$100 million during this period.¹²⁴

Many brokers might have been able to bear these expenses if the economy had remained strong. But in 1969, the Federal Reserve boosted interest rates, in a response to emerging signs of inflation, and the business cycle turned.¹²⁵ Stock prices fell, and investors abandoned equity investments for higher-yield savings accounts.¹²⁶ The lighter trading volume probably helped the nascent CCS system gain traction, but it also led to a fall in commission revenue for brokers.¹²⁷ Even worse, by 1970 the U.S. economy had fallen into a serious recession.¹²⁸ Stock prices dropped, and many investors abandoned the markets entirely.¹²⁹ Facing steep losses, most NYSE brokers tried to cut costs, but dozens now found themselves without enough capital to keep going—or even to make good on current liabilities.¹³⁰

The NYSE was in a tough spot. On the one hand, it did have a “special trust fund” of \$25 million, that had been established in the wake of a member’s failure back in 1964.¹³¹ This fund could now be used to help reassure individual investors that a broker’s failure

¹²⁰ See Wells, *supra* note 14, at 215.

¹²¹ *Id.*

¹²² See *id.* at 215.

¹²³ See *id.*

¹²⁴ See UNSAFE AND UNSOUND, *supra* note 70, at 100.

¹²⁵ See *S&P 500 Dividend Yield by Month*, *supra* note 50; see also *Monthly Interest Rates 1937–99*, *supra* note 51.

¹²⁶ See Wells, *supra* note 14, at 214–17.

¹²⁷ *Id.* at 216.

¹²⁸ *Id.* at 214–17.

¹²⁹ *Id.*

¹³⁰ See UNSAFE AND UNSOUND, *supra* note 70, at 11, 14, 27, 100.

¹³¹ See Wells, *supra* note 14, at 217.

would not cause them to lose their money.¹³² This was vital because while the Federal Deposit Insurance Corporation had been created by Congress in 1933 to provide deposit protection to savers if their bank failed, there was no analogous form of insurance in 1970 for securities investors.¹³³ If a broker stumbled—and the NYSE could not fix the problem—then investors would bear personal losses. This, in turn, could create a public relations disaster and possibly spark a run on other brokers. Yet with dozens of members now facing some type of trouble, it was becoming clear that the NYSE's \$25 million trust fund was inadequate.¹³⁴

One obvious solution involved consolidation: encouraging the larger, healthier brokers to buy up and absorb insolvent smaller ones. The NYSE's leaders worked, with some success, to arrange suitable matches.¹³⁵ They also established a crisis committee to keep an eye on flare-ups and respond accordingly.¹³⁶ By the middle of 1970, the NYSE's crisis committee had taken over ten troubled brokers, all of whom had suffered severe back-office settlement problems.¹³⁷ The estimated bailout bill exceeded \$50 million, but this was just a guess.¹³⁸ The NYSE leaders decided to move \$30 million that they had been saving for a new building into the trust fund, bringing their cushion up to \$55 million.¹³⁹

The overall economy rebounded during 1971, and the outlook for Wall Street brokers started to brighten.¹⁴⁰ Some feared a resurgence of the paperwork problems from the late 1960s, but the back-office troubles remained manageable.¹⁴¹ The market structure of Wall Street, which had already become more concentrated with the 1970 rescue mergers, continued to consolidate.¹⁴² Some of this seemed to be caused by increased costs from greater trading volume and the new settlement system.¹⁴³ Wall Street firms also diversified into new lines of business—including corporate finance underwriting, the pursuit of institutional investor clients, expansion into the management of pension funds and money market accounts, and an emphasis on

¹³² *See id.* at 217–18.

¹³³ *See id.* at 224.

¹³⁴ *See id.* at 217–18.

¹³⁵ *See id.* at 219–20.

¹³⁶ *See id.* at 220–21.

¹³⁷ *See id.* at 221.

¹³⁸ *Id.* at 221–22.

¹³⁹ *Id.* at 222.

¹⁴⁰ *Id.* at 224.

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

internal trading position in options and commodities.¹⁴⁴ Increasingly, size was beginning to matter a lot on Wall Street, and the smaller firms could not keep up.

As these trends continued over the next few decades, Wall Street brokers evolved into the concentrated market structure that is more familiar to today's investors. Smaller players merged and sold stock in their new, larger entities to the public to increase capitalizations even further.¹⁴⁵ By the year 2000, large public investment banks (including Goldman Sachs, Merrill Lynch, and Morgan Stanley Dean Whitter) and bank custodians (including The Bank of New York, Mellon, and State Street Bank) led the industry.¹⁴⁶ These players could handle trading volumes that vastly exceeded that of 1969.

The back-office strategy for stock settlement continued as the primary system for clearing trades and remains largely in place today.¹⁴⁷ CCS was succeeded by the Depository Trust Company ("DTC") in 1973—a subsidiary of Depository Trust & Clearing Corporation ("DTCC")—and this organization now holds the majority of corporate stock certificates in the name of its subsidiary "Cede."¹⁴⁸ Today, most stock certificates are digitally held in secure DTCC warehouses, and the ownership name on each share does not change with every sale.¹⁴⁹ Similarly, a corporation does not adjust its official stockholder lists to reflect routine trades; the same record holder persists as the formal owner of the stock.¹⁵⁰ Rather, the brokers and DTCC transfer beneficial ownership electronically from seller to buyer via bookkeeping adjustments.¹⁵¹

This remains a complicated ecosystem, and other players, such as Broadridge Financial, have emerged as critical outsourcing vendors that help manage the complex array of governance activities that result from stock holding in fungible bulk.¹⁵² Before returning to modern times, however, it is important to understand how the paperwork crisis impacted market regulations in this area.

¹⁴⁴ *Id.*

¹⁴⁵ *See, e.g.,* Andrew F. Tuch, *The Remaking of Wall Street*, 7 HARV. BUS. L. REV. 315, 323–25 (2017).

¹⁴⁶ *See generally* SELIGMAN, *supra* note 2; Kahan & Rock, *supra* note 36, at 1238.

¹⁴⁷ *See* Kahan & Rock, *supra* note 36, at 1237.

¹⁴⁸ *See id.* at 1237, 1254.

¹⁴⁹ *See id.* at 1238–40.

¹⁵⁰ *See supra* Part II.A.

¹⁵¹ *See* Kahan & Rock, *supra* note 36, at 1239.

¹⁵² *See id.* at 1244–48.

C. The Regulatory Aftermath

It seems reasonable to assume that regulators watched the paperwork crisis with some degree of dread. The SEC's cautionary "advice" not to reopen on Wednesdays had been ignored.¹⁵³ And while the exchanges and brokers had eventually sidestepped catastrophe, many lawmakers began to feel that self-regulation by the exchanges might not be the best way to promote functional stock markets. Some brokers also recognized that they had barely escaped disaster and sought additional laws to protect their markets.¹⁵⁴ Finally, seeking to tame an unruly Wall Street could also play well in some political circles. The regulatory reckoning was soon underway.

1. The Securities Investor Protection Act

The first step taken by Congress was to establish a new law that could reassure investors that personal funds would be protected if their brokers went bankrupt. As mentioned above, individual investors lacked FDIC-like protections during the 1969 paperwork crisis. Instead, a basic need to preserve confidence in trading markets by the brokers and exchanges served as the primary form of investor protection.¹⁵⁵ The NYSE's crisis committee had been able to work through the most demanding situations and avoid meltdown.¹⁵⁶ But when the smoke cleared in the early 1970s, many felt that this was no longer the best approach to investor protection.

The most obvious regulatory strategy was to replicate the FDIC's depository insurance for securities investments.¹⁵⁷ If an investor's assets could be guaranteed by the federal government if their broker became insolvent—at least up to a certain level—this might go a long way towards promoting trust in the stock market. A bill to that effect had been introduced in Congress during the 1968 crisis, but Wall Street brokers had fought against this idea.¹⁵⁸ They feared that the insurance plan would also bring new regulatory obligations—and thus spell the beginning of the end for self-regulation.¹⁵⁹

¹⁵³ See Wells, *supra* note 14, at 214.

¹⁵⁴ See *id.* at 223.

¹⁵⁵ *Id.* at 224–25.

¹⁵⁶ *Id.*

¹⁵⁷ See UNSAFE AND UNSOUND, *supra* note 70, at 3–4, 37–39.

¹⁵⁸ See Wells, *supra* note 14, at 224.

¹⁵⁹ *Id.* at 224–25.

By 1970, however, the calculus of some brokers had started to change.¹⁶⁰ The NYSE trust fund seemed inadequate to absorb all losses, and some members feared new surprises.¹⁶¹ A loss of public confidence also seemed likely; many investors seemed to be on the brink of rejecting street-level ownership of their stock.¹⁶² A mass request to retitle and withdraw shares held by CSS or the brokers themselves could spark a run on the brokers and undermine the second-generation clearing system that was now seen as critical to back-office operations. A federal insurance scheme seemed like the best way to head off these fears.¹⁶³

The planning and negotiations for what would eventually emerge as the Securities Investor Protection Corporation (“SIPC”) focused on how the protections would work, who would control the administrative bureaucracy of the system, and whether any additional regulatory strings would be attached to the plan.¹⁶⁴ Wall Street brokers proposed an independent government agency that would levy a small tax on security transfers and have recourse to a large line of credit at the U.S. Treasury for emergencies.¹⁶⁵ They argued that this agency should be run by the SEC and the exchanges themselves—not established as a separate organization (as the 1968 Congressional bill had proposed).¹⁶⁶ Finally, they suggested that the creation of this system should come with no other broker obligations.¹⁶⁷

Congress eventually agreed that there was no need to create a new agency, but it wanted more government control.¹⁶⁸ The brokers had proposed a twelve-member governing board with ten members coming from exchange appointments and two members coming from the President.¹⁶⁹ Both Congress and President Nixon said no way.¹⁷⁰ If most of the financial reassurance was coming from the U.S. Treasury, and if the taxpayers would be on the hook for an emergency bailout, then the federal government was going to control operations at the SIPC.¹⁷¹ The final bill provided for a seven-member board appointed as follows: one

¹⁶⁰ *Id.* at 225.

¹⁶¹ *See id.* at 225.

¹⁶² *See id.*

¹⁶³ *See UNSAFE AND UNSOUND, supra* note 70, at 3.

¹⁶⁴ *See id.* at 11.

¹⁶⁵ *See Wells, supra* note 14, at 225.

¹⁶⁶ *See id.*

¹⁶⁷ *See id.* at 226.

¹⁶⁸ *See id.*

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

member named by the Chairman of the Federal Reserve; one member named by the Treasury Secretary, and five members named by the President (with three of these members needing to come from the securities industry).¹⁷²

With this economic model and governance plan in place, the last question was whether Congress would demand additional regulatory oversight on Wall Street as a condition of the investor insurance protections. The NYSE and most Wall Street brokers did not want anything more; they liked the self-regulation approach.¹⁷³ But Congress was unwilling to backstop the SIPC protections without more oversight.¹⁷⁴ Accordingly, the final bill stipulated that the SEC would have the final authority to establish rules related “to the financial responsibility and related practices of brokers and dealers.”¹⁷⁵ It was possibly a redundant clause, given existing laws, but the SEC’s ultimate authority over broker capital requirements, audit obligations, and the like was not always explicit. With the new Securities Investor Protection Act of 1970, signed into law by President Nixon in late December, there was no doubt that the SEC now possessed the power to exercise oversight in these areas.¹⁷⁶ And it quickly moved to tighten capital requirements and mandate stricter audits—which had sometimes been implemented in a casual way by the NYSE to prop up troubled brokers during the crisis.¹⁷⁷

2. Congressional Hearings

While the SIPC’s insurance program was enacted relatively quickly, it took more time for lawmakers to conduct a thorough post-mortem of the paperwork crisis. But the inquiry would come. A provision in the Securities Investor Protection Act had instructed the SEC to report to Congress on any “unsafe or unsound practices” of broker-dealers within twelve months, and this report was released at the end of 1971.¹⁷⁸ It explored the causes of the breakdown and argued that “a modernized, nationwide system for effecting securities transactions must be

¹⁷² Securities Investor Protection Act of 1970, 15 U.S.C. § 78ccc(c)(2).

¹⁷³ Wells, *supra* note 14, at 226.

¹⁷⁴ *Id.*

¹⁷⁵ *Id.*

¹⁷⁶ *See, e.g.*, 15 U.S.C. § 78ccc(e)(3) (“The Commission may, by such rules as it determines to be necessary or appropriate in the public interest or to carry out the purposes of this chapter, require SIPC to adopt, amend, or repeal any SIPC bylaw or rule, whenever adopted.”).

¹⁷⁷ *See UNSAFE AND UNSOUND, supra* note 70, at 3.

¹⁷⁸ *See* 15 U.S.C. § 78kkk(g).

created.”¹⁷⁹ Quoting extensively from Tolstoy’s *War and Peace*, the introductory letter by SEC chairman William Casey described the chaos of the stock market battlefield and stated fourteen different problems that had contributed to the paperwork crisis.¹⁸⁰ This included many of the factors described above, such as inadequate broker-dealer capital, poor controls, a lack of early-warning systems, insufficient back-office talent and training, premature adopting of computing technology without the retention of old records for backup purposes, and the clogging of delivery, clearing and transfer systems due to increased trading volume.¹⁸¹

The SEC’s report then outlined twenty-one different steps that the SEC had already taken to avoid a repetition of the paperwork crisis.¹⁸² These included heightened capital requirements, stricter physical examination and count of all securities held by a broker, expanded personnel at the SEC and at the exchanges, and the installation of a uniform, monthly operational report by every broker-dealer.¹⁸³ Notably, the SEC also stated that, “[t]he securities industry working with several large banks . . . has made progress in immobilizing the stock certificate by establishing a central depository for securities held in street and institutional name.”¹⁸⁴ This of course was the CCS/DTCC project described above.

Finally, the SEC asked Congress to adopt legislation that would grant it oversight authority in four new areas: (1) “the processing of securities transactions;” (2) “the rule making authority of self-regulatory organizations;” (3) “the enforcement of the rules of the self-regulatory organizations;” and (4) “the administration of disciplinary proceedings conducted by the self-regulatory organizations.”¹⁸⁵ The first request was necessary, in the SEC’s view, because tasks like “the transfer and registration of transfer of certificates” were not clearly within the SEC’s regulatory ambit.¹⁸⁶ Similarly, while the SEC had limited power to nudge existing exchange rules, it lacked explicit authority to block new rules or abrogate existing rules.¹⁸⁷ Likewise, it could not directly enforce SRO rules against offending members but had to

¹⁷⁹ See UNSAFE AND UNSOUND, *supra* note 70, at 1.

¹⁸⁰ *Id.* at 1–3 (quoting from LEO TOLSTOY, WAR AND PEACE (1869)).

¹⁸¹ *Id.* at 2–3.

¹⁸² *Id.* at 3–5.

¹⁸³ *Id.*

¹⁸⁴ *Id.* at 5.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 5–6.

¹⁸⁷ *Id.* at 6–7.

rely on the private exchanges themselves for enforcement.¹⁸⁸ In short, the SEC felt that a broader grant of authority by Congress would allow the agency to improve on its overall mission of promoting sound business practices in the securities industry and thereby better protect investor interests.¹⁸⁹

A few months later, the Senate's Subcommittee on Securities (part of the Committee on Banking, Housing, and Urban Affairs) opened three days of hearings on the settlement of securities transactions.¹⁹⁰ The goal was to evaluate the Wall Street paperwork crisis and consider several proposals for avoiding this type of problem in the future. In the opening words of the subcommittee's Chair, Senator Harrison A. Williams:

Today [we] begin hearings on three bills concerning the clearance and settlement of securities transactions. Each of these three bills is designed to avoid a recurrence of the paperwork log jam and recordkeeping problems which plagued the securities industry and its customers from 1968 through 1970.

....

[W]e in the Congress were not satisfied with merely insuring the public against brokerage house failures [with the SIPC]. We began to exercise a closer and continuing scrutiny of the securities industry. . . . [I]n June of 1971, the Senate authorized this subcommittee to conduct a far-reaching study of the securities industry.

....

We must not forget the chaotic conditions which prevailed in the industry at the time the Congress considered the [SIPC]. The SIPC legislation was only the first step Legislative action which will alleviate the basic recordkeeping problems—the real cause of the crisis—is of the utmost necessity.¹⁹¹

The subcommittee called about thirty-five witnesses, including the Chair of the SEC, leaders of stock clearing organizations, members of various Wall Street associations, lawyers, auditors, and other professionals.¹⁹²

One of the most sensational statements came from Senator Charles Percy of Illinois, who asserted that over \$225 million in securities had been lost in 1970 through theft.¹⁹³ He suggested

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 5–6.

¹⁹⁰ *See Clearance and Settlement of Securities Transactions: Hearings on S. 3412, S. 3297, and S. 2551 Before the Subcomm. on Sec. of the S. Comm. on Banking, Hous. and Urb. Affs.*, 92d Cong. 1 (1972) [hereinafter *1972 Congressional Settlement Hearings*].

¹⁹¹ *Id.* at 1–2.

¹⁹² *See id.* at III–IV.

¹⁹³ *Id.* at 64–65.

that Wall Street had been infiltrated by organized crime syndicates, who had used the back-office chaos to steal millions of dollars—aided in part by the reluctance of broker-dealers to admit that their system was susceptible to such theft.¹⁹⁴ Percy reported, for example, that a man named Robert Cudak had started a job at John F. Kennedy International Airport (“JFK”) and noticed that air freight often had almost no security.¹⁹⁵ He recruited some partners, and they began stealing jewels, cash, furs, and stock certificates—mostly from JFK, but also from airports in Chicago, Florida, Los Angeles, and elsewhere.¹⁹⁶ At first, Cudak and his partners failed to recognize the value of the stock certificates and simply threw them away.¹⁹⁷ But eventually, the group allegedly made connections with the mafia and was able to convert the stock certificates to cash.¹⁹⁸ Percy also related another story where a different criminal had recruited back-office employees on Wall Street to steal certificates.¹⁹⁹ These criminals could sometimes monetize the theft by taking out bank loans where the stock was used as collateral.²⁰⁰ The scheme often worked because the “friendly [unsuspecting] banker[s]” had no easy way to check whether the securities presented by the borrowers actually belonged to them.²⁰¹

It is difficult to know the true extent of mafia theft via stock clearing chaos, but this type of testimony certainly added to the saliency and urgency of the problem for Congress. Most of the testimony focused on the various challenges of back-office clearing that we have already examined. But the testimony all pushed in one direction: lawmakers should help establish a system that minimized distributed physical certificates as evidence of ownership by setting up a centralized national depository for securities.²⁰² And preferably, these securities would migrate to a digitized format as soon as possible.

¹⁹⁴ *Id.* at 71.

¹⁹⁵ *Id.* at 72.

¹⁹⁶ *Id.* According to Cudak’s testimony, this theft was exceptionally easy. *Id.* at 67. All one needed was a pair of white coveralls, a plastic helmet, a pair of ear muffers, and a fake identification badge. *Id.* Sometimes the criminals would buy a jeep similar to the ones used by caterers to run around airports, but even that became unnecessary because most workers just left their keys in the ignition. *Id.* So attired, the thieves would drive around the airports picking up attractive freight packages left unguarded on baggage carts or mail transfer depots. *Id.*

¹⁹⁷ *Id.* at 73.

¹⁹⁸ *Id.*

¹⁹⁹ *Id.* at 75.

²⁰⁰ *Id.* at 74–77.

²⁰¹ *Id.* at 77, 80.

²⁰² *See id.* at 1–2.

3. Section 17A of the Exchange Act

Despite the sensational testimony, it took several more years for additional laws to be passed. The eventual result was the Securities Acts Amendments of 1975.²⁰³ This enactment adjusted several elements of the Securities Act of 1933 and the Securities Exchange Act of 1934. For our purposes, however, the most important change was the adoption of Section 17A in the Exchange Act.

The goals of 17A are clearly stated in the preamble to the amendment and worth considering in full:

The Congress finds that—

(A) The prompt and accurate clearance and settlement of securities transactions, including the transfer of record ownership and the safeguarding of securities and funds related thereto, are necessary for the protection of investors and persons facilitating transactions by and acting on behalf of investors.

(B) Inefficient procedures for clearance and settlement impose unnecessary costs on investors and persons facilitating transactions by and acting on behalf of investors.

(C) New data processing and communications techniques create the opportunity for more efficient, effective, and safe procedures for clearance and settlement.

(D) The linking of all clearance and settlement facilities and the development of uniform standards and procedures for clearance and settlement will reduce unnecessary costs and increase the protection of investors and persons facilitating transactions by and acting on behalf of investors.²⁰⁴

In short, lawmakers sought to avoid another paperwork crises and accelerate the transition to a modern approach for securities clearing. A full analysis of Section 17A is beyond the scope of this Article, but three main goals of the legislation should be emphasized.

First, Section 17A established a framework for the SEC oversight of the clearing agencies and transfer agents who would process the back-office trades.²⁰⁵ Both groups were now required to register with the SEC and would only be approved to operate after a comprehensive review.²⁰⁶ For example, a clearing agency would need to demonstrate that it had the “capacity to be able to facilitate the prompt and accurate clearance and settlement of securities transactions . . . to comply with the provisions of this [law and] to enforce . . . compliance [with these laws] by its

²⁰³ See Securities Acts Amendments of 1975, Pub. L. No. 94-29, 89 Stat. 97.

²⁰⁴ *Id.* § 17A(a)(1).

²⁰⁵ *Id.* § 17A(c)(1), (c)(3)(C).

²⁰⁶ *Id.*

participants.”²⁰⁷ Similarly, a transfer agent would be required to register with the SEC and be subject to continuing oversight and potential discipline for misconduct.²⁰⁸ In short, lawmakers wanted more control over who would be carrying out back-office activities.

Second, Congress clearly envisioned a world where the CCS/DTCC strategy of holding immobilized securities in fungible bulk was the proper path forward. Section 17A(e) required the SEC to “end the physical movement of securities certificates in connection with the settlement among brokers and dealers of transactions in securities [involving mail or interstate commerce].”²⁰⁹ The days of couriers scrambling around to deliver stock certificates—or of mafia criminals grabbing boxes of certificates from airport loading platforms—seemed to be over. This section might accelerate the need to transition to the immobilized second-generation clearing system that Wall Street now embraced.

Finally, Congress realized that future details of stock settlement and clearing laws would need to be worked out, and it designated explicit rulemaking authority to the SEC.²¹⁰ Some other sections of the new laws explicitly required the SEC to work out new rules. But Congress also granted general rulemaking authority to the SEC related to the “transfer of certificated or uncertificated securities” and the “rights and obligations of purchasers, sellers, owners, lenders, borrowers, and financial intermediaries” involved with stock transfers.²¹¹ This rulemaking authority was subject to several legislative guidelines and administrative procedures, but it might allow the SEC to adjust the rules of the game as time passed.

The SEC’s rulemaking authority in this area has become important in the ensuing decades. To be sure, clearing rules probably do not get as much attention as other topics like insider trading or environmental disclosure obligations. But the authority was used in 2005 to adopt Regulation National Market System (“Reg NMS”), which encompassed a series of SEC initiatives to “modernize and strengthen the national market system (“NMS”) for equity securities.”²¹² The primary focus of Reg NMS, however, was on adjustments to front-end trading practices that might

²⁰⁷ *Id.* § 17A(b)(3)(A).

²⁰⁸ *Id.* § 17A(c)(1), (c)(3)(C).

²⁰⁹ *Id.* § 17A(e).

²¹⁰ National System for Clearance and Settlement of Securities Transactions, 15 U.S.C. § 78q-1(f)(1).

²¹¹ *Id.* § 78q-1(f)(1)(A), (B).

²¹² Regulation NMS, 70 Fed. Reg. 37496, 37496 (June 29, 2005) (to be codified at 17 C.F.R. pts. 200, 201, 230, 240, 242, 249, 270).

allow investors to obtain the best prices for their trades.²¹³ Similarly, the SEC revisited the impact of trading systems on front-end investor prices near the end of 2022 with several proposals that would adjust some aspects of market operations.²¹⁴

More importantly for our purposes, on the back-end of clearing markets, the SEC also approved several technical rules that worked to accelerate the transition to DTCC's second-generation settlement strategy. We will revisit a few of these lesser-known changes shortly to consider how these rules might now hinder third-generation experiments in blockchain clearing technology.²¹⁵

Finally, it is also worth noting that the SEC has used its 17A rulemaking authority to support cries for faster clearing and settlement of securities. In 1993, it adopted Rule 15c6-1 to establish three business days as the standard period for settling transactions in most securities, T+3.²¹⁶ This rule became effective in 1995 to shorten the previous settlement standard of five business days ("T+5").²¹⁷ This was further tightened to a T+2 system in 2017.²¹⁸ And in 2022, the SEC announced that it will require firms to shorten the settlement cycle to a T+1 system some time in 2024.²¹⁹

D. Cracks in the System

On balance, the ascendancy of DTCC and the elimination of physical certificate transfer have been welcome developments. Indeed, it is difficult to imagine how the old system could support the millions of trades that now occur each day on the New York Stock Exchange. But the use of immobilized fungible bulk and intermediate agents can complicate the mechanisms that must now be used to trade stock, convey the vote, and manage other important legal rights for beneficial shareholders. Cracks in the system do occur.

²¹³ *Id.* at 37497.

²¹⁴ See *SEC Proposes Rule to Enhance Competition for Individual Investor Order Execution*, U.S. SEC. & EXCH. COMM'N (Dec. 14, 2022), <http://www.sec.gov/news/press-release/2022-225> [<http://perma.cc/U2CP-6AF4>].

²¹⁵ See *infra* notes 263–266 and accompanying text.

²¹⁶ See General Rules and Regulations, Securities Exchange Act of 1934, 58 Fed. Reg. 52891, 52903 (Oct. 13, 1993) (to be codified at 17 C.F.R. pt. 240).

²¹⁷ See *id.* at 52892.

²¹⁸ See *SEC Adopts T+2 Settlement Cycle for Securities Transactions*, U.S. SEC. & EXCH. COMM'N (Mar. 22, 2017), <http://www.sec.gov/news/press-release/2017-68-0> [<http://perma.cc/G4T6-CNZS>].

²¹⁹ See *SEC Issues Proposal to Reduce Risks in Clearance and Settlement*, U.S. SEC. & EXCH. COMM'N (Feb. 9, 2022), <http://www.sec.gov/news/press-release/2022-21> [<http://perma.cc/6284-2S4C>].

1. Corporate Governance

Corporate law might have responded to the rise of fungible bulk shareholding by altering its doctrines to provide direct legal rights to beneficial owners. But this has not happened. In Delaware, for instance, the record holder persists as registered owner of the stock on a corporation's books and retains the formal right to cast votes.²²⁰ Any downstream custodian relationship between banks, brokers, and clients is treated as a matter of agency and not a primary concern for Delaware corporate law.²²¹ If mistakes arise from misunderstandings between beneficial owners and their brokers (and they do), then the problems need to be taken up by the private parties; Delaware courts will not step in to make things right through equitable adjustments.²²² This is not because Delaware lawmakers are unaware of the DTCC framework, of course, but rather because they have elected to prioritize the certainty provided by a firm's absolute reliance on its formal list of record stockholders.²²³

How exactly does governance work? A firm preparing for an upcoming vote will contact DTCC to obtain the list of banks and brokers who hold shares as custodians for beneficial owners.²²⁴ The firm will then ask each of these custodians to provide the next level of information—about who actually owns the stock—so that the corporation can prepare proxy materials related to the vote.²²⁵ This can take some time since there may be several layers of custodial ownership, and the banks will need to obtain data from the very bottom level.²²⁶ The firm will then provide each custodian with copies of the proxy materials for distribution to beneficial owners.²²⁷

²²⁰ See, e.g., DEL. CODE ANN. tit. 8, § 212 (2020) (describing who gets to vote); *id.* § 262(a) (2022) (“[In the appraisal context] the word ‘stockholder’ means a holder of record of stock in a corporation.”).

²²¹ See *In re Appraisal of Dell Inc.*, No. 9322–VCL, 2015 WL 4313206, at *6–7 (Del. Ch. July 13, 2015) (describing the evolution of Delaware's formal treatment of shareholders).

²²² See *id.* at *47–49.

²²³ *Id.* at *16.

²²⁴ See Kahan & Rock, *supra* note 36, at 1254.

²²⁵ For annual elections, this will typically include an annual report describing the firm's recent performance, a proxy statement describing the key issues on the ballot, and instructions or materials (such as proxy card) for the actual casting of votes.

²²⁶ One sign of the imprecision raised by this framework is that the total number of shares reported up through the banks may not always match the corporation's records for the total number of shares issued and outstanding. Any discrepancies may remain unreconciled at this point in the process. See Kahan & Rock, *supra* note 36, at 1244.

²²⁷ Most of these communication efforts with shareholders are outsourced to third party specialists. See, e.g., *In re Appraisal of Dell Inc.*, 143 A.3d 20, 22 (Del. Ch. 2016). Moreover, the SEC adopted “e-proxy” or “notice and access” rules in 2007 to allow firms to use email and the Internet for delivering these materials to willing shareholders. See Kahan & Rock, *supra* note 36, at 1246.

How are votes actually cast if DTCC retains the formal right, as record holder, to vote? Cede will execute a global proxy that allows its account holders (the custodian banks and brokers) to cast DTCC's votes in proportion to their total allocation.²²⁸ If a broker reports that its investors hold twenty-five percent of the shares, for example, then DTCC will send that bank a proxy allowing it to cast a quarter of the firm's votes. The custodians may then do the same thing for individual clients (moving down through additional layers as necessary) and fragment these voting rights even further. Eventually, beneficial holders can cast their votes as they wish.²²⁹ As the votes arrive, the firm can then verify proxies, tabulate votes, and report the results.²³⁰

This all sounds fine, but delay and complexity can cause problems. How, for example, can a firm ever hold a vote if it takes days to figure out who has the right to cast a ballot—and if the underlying ownership of shares is churning this entire time through subsequent sales and purchases? As soon as DTCC and the brokers have figured it out, the list of voters might be obsolete.

Corporate law finesses this problem by establishing a bright-line “record date” when franchise rights attach to current owners—even if these owners choose to sell their shares before the date of the actual vote.²³¹ This gives the firm time to distribute information and process the votes, even as it weakens the incentives of some shareholders to participate; after all, why vote on a matter when you no longer own the shares? For example, a firm might designate a record date forty-five days before its annual shareholder meeting. If so, an investor who buys stock after this record date cannot normally vote the late-purchased stock.²³² The same “snapshot” approach is taken with dividends: shareholders on the record date will eventually receive the payments, and the

²²⁸ See Kahan & Rock, *supra* note 36, at 1247.

²²⁹ Alternatively, the banks and brokers might just ask beneficial shareholders to supply them with timely voting instructions (rather than execute a second proxy). See Kahan & Rock, *supra* note 36, at 1247.

²³⁰ Again, it is common for firms to outsource the actual processing and tabulation of votes to a third-party provider. See, e.g., *In re Appraisal of Dell Inc.*, 143 A.3d at 22. For contested matters, such as director election contests, an independent inspector may also be retained to supervise the entire process. See *id.*

²³¹ Delaware General Corporate Law is illustrative. Under Section 213, a record date “not . . . more than 60 nor less than 10 days before the date of such meeting” establishes the roster of eligible voters. DEL. CODE ANN. tit. 8, § 213(a) (2020).

²³² The selling shareholder will retain voting rights, under this example, and it is possible for the buying shareholder to make special arrangements with the selling shareholder to obtain a voting proxy that allows the later shareholder to cast the votes. This is generally understood to be uncommon.

shares trade “ex-dividend,” long before any checks are cut.²³³ This system seems to work fine for economic matters; share prices simply drop on the record date to reflect the severance of a forthcoming dividend payment from the stock. But delays between the vesting of voting rights (on the record date) and the time of the actual vote (at the shareholder meeting)—along with the lack of precision introduced by unidentified fungible bulk—can create more serious concerns.

Several commentators have written about these problems elsewhere, so I will only review them at a high-level here.²³⁴ The most obvious problem that can arise is over-voting—where more ballots are cast than the total number of existing shares.²³⁵ This is thought to happen through accounting and reconciliation inconsistencies.²³⁶ A shareholder might think, for example, that they bought their shares in time to vote—when the actual transfer occurred after the record date cutoff. Both buyer and seller vote, and the discrepancy is not caught as brokers combine their clients’ votes and submit them to DTCC. Over-voting does not seem to occur very often, but when it does, it should be seen as a clear indicator of a malfunctioning system. More concerning, perhaps, is a fear that the problems leading to over-voting are pervasive but that stockholder voting apathy prevents such a visible breakdown from arising very often. If the system is error-ridden, but we cannot always observe when a breakdown occurs, then that should be seen as a fundamental legitimacy problem for corporate governance.

One way to explore whether this occurs might be to hold a vote on the same decision several times and check whether the recount matches the initial vote. This is hardly practical, but do-overs occasionally happen. For example, in 2017, Proctor & Gamble fought a highly publicized director vote where Nelson Peltz, a well-known activist investor, initially lost an extremely close election

²³³ A firm will usually process dividends in four steps. First, the board will approve an upcoming dividend. Second, the firm will announce the dividend and state that it will be paid to all shareholders who hold the stock on a given future date (the record date). Later, shares will trade without dividend rights (“ex dividend”). And finally, the firm will actually pay the dividend to all entitled shareholders. See RICHARD A. BREALEY ET AL., *PRINCIPLES OF CORPORATE FINANCE* § 16.2, at 427–28 (13th ed. 2020).

²³⁴ See, e.g., Kahan & Rock, *supra* note 36, at 1227; Henry T.C. Hu & Bernard Black, *Hedge Funds, Insiders, and the Decoupling of Economic and Voting Ownership: Empty Voting and Hidden (Morphable) Ownership*, 13 J. CORP. FIN. 343, 343 (2007); Henry T.C. Hu & Bernard Black, *The New Vote Buying: Empty Voting and Hidden (Morphable) Ownership*, 79 S. CAL. L. REV. 811, 815 (2006).

²³⁵ See Kahan & Rock, *supra* note 36, at 1258–63.

²³⁶ *Id.* at 1254–55.

(973 million votes to 979 million votes).²³⁷ Peltz obtained a recount and prevailed when the votes were retallied.²³⁸ This type of incident is just one example of what Marcel Kahan and Ed Rock call the “hanging chads of corporate governance.”²³⁹ It cannot inspire confidence in our corporate voting system.

Beyond director elections, voting imprecision can also cause glitches for shareholders seeking to exercise some other rights. For example, I have written elsewhere about how appraisal rights—where shareholders who object to a merger transaction can seek fair value for their stock in a lawsuit—will sometimes be threatened.²⁴⁰ In a nutshell, the objecting shareholders usually need to show that their shares were voted against the merger, which is sometimes impossible to demonstrate under our current and complex system.²⁴¹

2. Credit Risk Management

A different problem can also arise with delayed clearing and settlement: the need to manage participant credit risk. If, counterfactually, brokers settled with DTCC in real-time as the collective positions of their clients' investments changed, then there should be a negligible risk. But as we have seen, this is not the case. Suppose that a broker, we will call Robinhood, represents clients buying one million shares of some company's stock at \$500 per share. A different broker named Nottingham represents the selling investors. The trade is earmarked quickly, of course, but the flow of cash from Robinhood to Nottingham and the transfer of the stock ownership the other way on DTCC's accounting ledgers will not occur for a little while longer. If the stock position is large and volatile, and if DTCC is committed to standing behind the exchange, then the clearinghouse may grow nervous that Robinhood will not be able to fork over the cash if prices plunge over the next few days. Accordingly, it may ask for Robinhood to pay more funds into a deposit account with the DTCC that might be used to backstop the exchange if any client trouble arises. The goal is to manage risk concerns between DTCC, Robinhood, or

²³⁷ See Sharon Terlep & David Benoit, *P&G Concedes Proxy Fight, Adds Nelson Peltz to Its Board*, WALL. ST. J. (Dec. 15, 2017, 7:18 PM), <http://www.wsj.com/articles/p-g-concedes-proxy-fight-adds-nelson-peltz-to-its-board-1513377485> [<http://perma.cc/4WPX-YJHK>].

²³⁸ See *id.*

²³⁹ See Kahan & Rock, *supra* note 36, at 1227.

²⁴⁰ See George S. Geis, *An Appraisal Puzzle*, 105 NW. U.L. REV. 1635, 1636 (2011). See also Ferrick, *supra* note 11, at 624. Helpful judicial discussion of this problem can also be found in the high-profile Dell appraisal case. See *In Re Appraisal of Dell Inc.*, No. 9322-VCL, 2015 WL 4313206, at *1–3 (Del. Ch. July 13, 2015).

²⁴¹ See Ferrick, *supra* note 11, at 625.

other individual brokers. A parallel concern should not arise for the net selling broker so long as DTCC can see that Nottingham “owns” the shares on his ledger—though this net position might change, of course, over the span of a day.

What happens if Robinhood cannot easily satisfy the request for a larger deposit with DTCC? Well, just as your broker might grow nervous if (1) you borrow money to buy stock on margin; (2) the price of the shares drops; and (3) you can’t scrape together the cash to meet a margin call, DTCC’s anxiety might rise when we take this problem one level higher with a centralized settlement. It might even represent a more difficult problem; at the individual investor level, your broker might eventually sell your stock and use the proceeds to mitigate credit risk. But this seems an unlikely solution for DTCC—since it is the broker’s credit risk that matters. Instead, DTCC may try to limit additional purchases by the broker until a larger deposit can be made.

Something like this seemed to have happened during the Robinhood-GameStop Crisis of 2021.²⁴² Early in the morning of January 28, Robinhood was told by the DTCC that it needed to boost its deposit by roughly \$3 billion.²⁴³ DTCC was concerned that the highly volatile GameStop stock might expose it to Robinhood’s credit risk. This was more than Robinhood’s external capital (only \$2 billion), and the broker was not in a position to send over such a large deposit.²⁴⁴ So, the only solution seemed to be to halt additional client purchases of GameStop; investors were permitted to sell their stock (which would reduce the net long position of Robinhood with DTCC and mitigate credit concerns), but they could not buy.²⁴⁵ Eventually, the deposit was lowered, and the problem was finessed, but not before outraged clients and conspiracy theorists yelled about a rigged system on Wall Street.²⁴⁶

The broader point is that delayed settlement cycles linked to unidentified securities can raise counterparty credit risks. This must be managed and may, in extreme circumstances, hinder trading strategies or even shut out some market participants. And while there is more to say about the cracks in our stock-clearing processes, hopefully, this is enough to demonstrate that the fifty-year-old settlement is showing its age. Like a patched-up 1960s automobile or mainframe computer, it usually works okay. But the

²⁴² See sources cited *supra* notes 6–8.

²⁴³ See, e.g., Gonzalez & Priest, *supra* note 6.

²⁴⁴ *Id.*

²⁴⁵ See *id.*

²⁴⁶ See *id.*

process is overly complex, relatively slow, and sometimes just plain wrong. Is there a better way?

III. TOWARDS THE THIRD GENERATION: BLOCKCHAIN?

Legal commentators, entrepreneurs, regulators, and even the DTCC are increasingly excited about the possibility of faster clearing and third-generation settlement technology.²⁴⁷ This section explores the possibilities, considers the likelihood of change in light of the historical discussion above, and offers some suggestions for the future of stock settlement.

A. The Potential of Blockchain

If we could snap our fingers and create an ideal stock-clearing platform, we would probably abandon the complicated multi-layered distinction between record and beneficial owners. Likewise, why hold stock centrally in unidentified fungible bulk? A share of stock might trade electronically, perhaps still through centralized brokers and exchanges—but a decentralized exchange could be an interesting possibility. Importantly, however, the details of each transfer would be processed by a secured and trusted protocol that specifically identifies each share exchanged. This information would be rapidly updated (ideally in real-time or close to real-time) and accessible by relevant parties with the proper clearance. In short, we would have a rapid clearing of stock trades in a way that preserves a precise chain of title.

Most experts would have dismissed this vision as fantasy five or ten years ago. It was simply too difficult to imagine how software, technology, and computing could keep up with the ongoing surge of trades. More recently, however, it has become possible to envision how blockchain and distributed ledger technology could revolutionize the settlement of stock trades.

I have written about how the mechanics of stock settlement on a blockchain might work elsewhere,²⁴⁸ so I will not delve into technical details here. But it is important to highlight a few key principles. First, blockchain technology is specifically designed to establish a secure, trusted, and precise chain of property ownership.²⁴⁹ Maintaining an exact provenance of title—especially over digital information—is exactly what blockchain is designed to do. While some have espoused payment systems as the obvious

²⁴⁷ See sources cited *supra* note 11.

²⁴⁸ See Geis, *supra* note 11, at 227.

²⁴⁹ See, e.g., Joshua A.T. Fairfield, *BitProperty*, 88 S. CAL. L. REV. 805, 808 (2015).

killer application for blockchain, tracking rapidly changing property records might be an even more compelling use of the technology.²⁵⁰ Stock settlement might not be the most obvious thing to manage on a blockchain, but it should make perfect sense.

Second, while blockchain settlement could be very rapid, it is unclear whether real-time settlement would be optimal. One intriguing possibility is to establish an instantaneous clearing system where trades are processed via smart contracts that simultaneously execute an exchange of money and stock ownership. Such a system could have many advantages over one with a built-in delay, such as eliminating governance and voting distortion, credit risk concerns for intermediaries, and so on. But there might also be some added costs to real-time settlement. For one, abandoning netting and clearing every trade could introduce additional transaction costs, especially when high-frequency investors churn in and out of a stock position. Second, there could no longer be a margin for error. One important feature of the blockchain is finality (for the most part), and errors, fraud, or mistakes would need to be sorted out on the back end. This could drive up operational costs and risks. Real-time settlement still may make the most sense in the long run, but the jury is still out.

Third, from the client's perspective, blockchain settlement might not matter much—especially if the trades continue to be processed through centralized agents. For example, economic information and share positions might continue to be provided by brokers. Investor trades would settle quicker, and there would be a detailed and traceable record of title for every single share of stock. Depending on the level of visibility offered by the ledger, clients might be able to see ownership and trading data about other shareholders in a firm. It is also possible, however, that the platform might keep this information from individual investors. Determining how much access should be provided to historical trading data will raise interesting regulatory issues.²⁵¹ But, as discussed earlier, a new clearing system could matter a lot to investors if they need to ensure that votes are accurate or that some litigation rights are perfected.

Fourth, blockchain clearing might provide valuable information to firms and regulators, but confidentiality protocols will be important. Under our current system, a company cannot

²⁵⁰ See *id.* at 807–08.

²⁵¹ See, e.g., David Yermack, *Corporate Governance and Blockchains*, 21 REV. FIN. 7, 26–27 (2017).

know who its shareholders are at any given moment. Rather, it must launch an inquiry with the DTCC and brokers to trace through all the intermediary holders and put together the puzzle.²⁵² And by the time that has been completed, stock ownership positions have probably changed again. This makes it more difficult for firms to communicate with investors and conduct other governance outreach conversations, although the rise in large institutional managers of index funds has made this easier.²⁵³ Likewise, regulators might have many reasons to care about actual ownership positions, and blockchain records of perfect provenance could be quite valuable. That said, some investors will vehemently oppose revealing propriety trading positions in real-time. Information access protocols will need to be established.

Despite these lingering questions, the potential for a new generation of stock-clearing technology has attracted many entrepreneurs.²⁵⁴ Some want to build a better clearing platform, while others focus on streamlining communications with investors or governance processes.²⁵⁵ To date, however, only some of these initiatives have moved rapidly to transform stock-clearing.²⁵⁶ The last five years have seen much effort but fewer tangible results.

Even DTCC has heard the call for blockchain transformation. In early 2020, it announced that it was launching “Project Ion” to explore the use of distributed ledger technology for clearing public company stock trades.²⁵⁷ (It also announced a parallel “Project Whitney” to facilitate private company stock trades.”²⁵⁸) Project Ion

²⁵² See Kahan & Rock, *supra* note 36, at 1243.

²⁵³ See, e.g., John C. Coates, *The Future of Corporate Governance Part I: The Problem of Twelve* 2 (Harvard Pub. L. Working Paper No. 19-07, 2019), <http://ssrn.com/abstract=3247337> [<http://perma.cc/LB7R-BZLE>].

²⁵⁴ See *Clearing Technology*, NASDAQ, <http://www.nasdaq.com/solutions/clearing-technology> (last visited Apr. 6, 2023); Philip Stafford, *Stock clearing stalwarts face increasing threat from blockchain*, FIN. TIMES (Apr. 6, 2021), <http://www.ft.com/content/094da6cf-3619-4f0e-a60c-82f01c285347>.

²⁵⁵ See *Securities Settlement: A new Standard of Efficiency for Settlement of Securities*, PAXOS, <http://paxos.com/securities-settlement/> [<http://perma.cc/5CPT-KJ66>] (last visited Apr. 6, 2023); Stafford, *supra* note 254; BROADRIDGE, NEXT-GENERATION PROXY VOTING 2 (2022), http://www.broadridge.com/_assets/pdf/broadridge-next-generation-proxy-voting-strategies.pdf [<http://perma.cc/2KTT-8H4M>].

²⁵⁶ See *Clearing Technology*, *supra* note 254; Stafford, *supra* note 254; PAXOS, *supra* note 255.

²⁵⁷ See Kristi Morrow et al., *DTCC's Project Ion Platform Now Live in Parallel Production Environment, Processing Over 100,000 Transactions Per Day on DLT*, DTCC (Aug. 22, 2022), <http://www.dtcc.com/news/2022/august/22/project-ion> [<http://perma.cc/T44B-SLNT>].

²⁵⁸ See DTCC, *Digital Securities Management Bringing Private Markets Infrastructure into the 21st Century*, DTCC 1 (Nov. 2021), <http://www.dtcc.com/-/media/Files/PDFs/White-Paper/Digital-Securities-Management-Industry-Update-White-Paper.pdf> [<http://perma.cc/GN3D-9XUY>].

started with efforts related to proof of concept, technology assessment, and client testing. More than two years later, in August 2022, Project Ion launched a pilot experiment that processed about 100,000 trades a day in a parallel test lab.²⁵⁹ These are not actual transactions, however, but ones that mirror stock trades in a way that should test the viability of the new system.

Stepping back from all of this, I think it is fair to say that all the excitement and energy surrounding stock-clearing on the blockchain has not yet blossomed. Progress has been slow. Why? One plausible explanation is that key players do not believe that the current, second-generation clearing system really needs to be updated. Things seem to mostly work out okay—though one might speculate about the number of mistakes that arise out of the spotlight. A more likely explanation for the slow pace of progress is that cryptocurrency markets and infrastructures have cratered during 2022.²⁶⁰ I would contend that much of this turmoil has had little to do with the viability of underlying blockchain technology. But inevitably, the constant press of newspaper headlines must have led many to question whether blockchain has been overhyped.

The main point of this Article, however, is that historical context for stock settlement has also slowed experimentation with reform via blockchain technology. Let us consider the impact of history.

B. The Impact of History on Settlement Reform

The first point to make is that historical failure has likely led to some degree of risk-aversion among market participants and regulators. Even after five decades, the trauma of market closures and the inability to track trades must linger in a way that chills some interest in reform. No one wants to launch a system that re-breaks the back-office plumbing of Wall Street. So long as aging pipes can be patched up with putty, or cut out and soldered back together, some participants would prefer to keep on going. And to be fair, replacing all the plumbing in a large, fast-moving, complex, and critical system of financial architecture should not be undertaken lightly. But the memory of failure may be dampening some of the enthusiasm for innovation.

²⁵⁹ See Morrow et al., *supra* note 257.

²⁶⁰ Cheyenne DeVon, *Bitcoin Lost Over 60% of Its Value in 2022—Here's How Much 6 Other Popular Cryptocurrencies Lost*, CNBC (Dec. 23, 2022, 9:30 AM), <http://www.cnbc.com/2022/12/23/bitcoin-lost-over-60-percent-of-its-value-in-2022.html#:~:text=Just%208%25%20of%20Americans%20have,far%20below%20their%202021%20highs> [http://perma.cc/Z9KX-9VT6].

Second, the current, second-generation stock settlement system led to entrenched centralization. This did not happen by accident, of course, but was the key design feature of the solution. As we have seen, the cure to Wall Street's paperwork nightmare was to centralize all formal stock ownership and manage the actual economic ownership changes with bookkeeping adjustments. And the fix worked. But stepping back from everything fifty years later, we should recognize that the curious system now in place is a kludge—and hardly the type of architecture that would be designed from scratch. Why should a central owner keep everything locked in its vaults?

More importantly, we should consider the possibility that centralization of control has led to a situation where some vested interests might prefer not to modernize. This is not necessarily to fault DTCC; it is amazing what the centralized clearinghouse has been able to accomplish over our decades of rocketing trading volume. And, as mentioned, DTCC is conducting experiments that might lead to a new generation of clearing technology.²⁶¹ But one must question how strong the imperative for change is felt. And DTCC is not the only large organization that has resulted from centralized clearing. A handful of other players, especially Broadridge Financial, have grown enormous (and highly profitable) as solutions providers that can help corporations navigate the current complex web of stock transfers, communications, and governance.²⁶²

Finally, I would argue that ossified regulatory restrictions have also slowed initiatives in this area. What do I mean by this? Under current laws, some efforts to adopt new clearing platforms are prohibited. Ironically, the same laws enacted to help shift settlement markets from the outdated first-generation system to the current second-generation system now block experimentation with promising third-generation technology. Consider a few examples.

In 1993, the SEC approved a listing rule by the exchanges that effectively required issuers to consent to making their securities depository-eligible for DTCC book-entry services as a condition of listing.²⁶³ This effectively prevents a corporation that wants to go public from sidestepping the DTCC framework and embracing an alternative settlement system. At the time, the SEC was understandably concerned about potential harms to investors that

²⁶¹ See *supra* notes 257–259 and accompanying text.

²⁶² See Kahan & Rock, *supra* note 100 *passim*.

²⁶³ See Order Approving Proposed Rule Changes Relating to the Book-Entry Settlement of Securities Transactions, 58 Fed. Reg. 33679, 33679 (June 18, 1993).

might occur if a firm refused to work with the state-of-the-art settlement system. But today, this means that a company wishing to try blockchain settlement through an innovator cannot opt out.

Similarly, in the early 2000s, the SEC approved rules to shore up centralized settlement. In 2003, after one company sought to pull back its shares from DTCC control, the SEC approved a rule allowing DTCC to refuse an issuer request to withdraw securities.²⁶⁴ Another firm sought to address this upfront by adopting a corporate bylaw that made its shares ineligible for DTCC ownership and services. Again, the SEC said no by approving Rule 17Ad-20 to effectively prohibit this act.²⁶⁵ These changes made good sense: these efforts would have taken these firms “off the grid” and made it much more difficult for investors to trade their stock. But today, they work to lock in the status quo in ways that run counter to the fundamental goals stated in the preamble to 17A.²⁶⁶

There are other regulations that might be discussed, including, for example, the possible burden of having to register as a transfer agent if firms or their agents process stock trades on a blockchain.²⁶⁷ But, hopefully, this is enough to understand how the historical regulatory imperative to support a second-generation clearing system now seems to be blocking third-generation reforms.

To be fair, many regulatory reforms have been undertaken that bolster new settlement and clearing strategies. Many states, including Delaware, have provided specific statutory authority for corporations to use “electronic networks or databases” (including distributed ledgers or blockchain) for a stock ledger.²⁶⁸ And the SEC has sponsored experiments that could help explore whether new systems of stock trading and clearing on a blockchain might be viable.²⁶⁹ But any regulatory restriction faces the possibility that the press of time will turn good policy into bad. It may now be time to recognize some of this regulatory ossification in stock settlement and do more to free potential innovators in this space.

²⁶⁴ See Order Granting Approval of a Proposed Rule Change Concerning Requests for Withdrawal of Certificates by Issuers, 68 Fed. Reg. 35037, 35037–38 (June 11, 2003).

²⁶⁵ See Issuer Restrictions or Prohibitions on Ownership by Securities Intermediaries, 34 Fed. Reg. 49804 (proposed June 4, 2004) (to be codified at 17 C.F.R. pt. 240).

²⁶⁶ See *supra* note 204 and accompanying text.

²⁶⁷ See Securities Acts Amendments of 1975, Pub. L. No. 94-29, 89 Stat. 97, § 17A(c)(1), (c)(3)(C).

²⁶⁸ See, e.g., J. Travis Laster & Marcel T. Rosner, *Distributed Stock Ledgers and Delaware Law*, 73 BUS. LAW. 319, 327, 329–30 (2018).

²⁶⁹ E.g., Paxos Trust Co., LLC, SEC No-Action Letter, 2019 WL 8128050 (Oct. 28, 2019).

CONCLUSION

Comparing back-office stock settlement to home plumbing is apt on at least two levels: (1) both are critically important; and (2) most people do not wish to closely examine the inner workings of either system. So long as everything seems to function effectively—and share ownership rights eventually flow from seller to buyer—it is tempting to just ignore the details. But the precise mechanics of stock settlement deserve scrutiny because there is a fascinating and important history here—one that matters for corporate law and for the effective functioning of financial markets.

This Article has traced and analyzed the context of history on stock settlement reform. Failures in the past support a heightened perception that future adjustments must be risky. Large, centralized players were created that may now resist innovation. And some regulatory restrictions, sensibly established decades ago to support needed change, may now be blocking productive experimentation. I predict that we will see a new settlement system eventually; architects have drawn up plans, and construction has begun. But these players must understand and contend with historical events that still impact this critical financial infrastructure.

Political Reality and Crypto Regulation

Carol R. Goforth*

This Article compares and contrasts the SEC's and CFTC's approach to crypto regulation, as impacted by their respective missions and scope of authority. It then considers some of the largest gaps in the current regulatory system as it applies to cryptoassets. In light of that information, the Article then looks at three of the most widely discussed legislative proposals for regulatory reform and considers the potential impact of such legislative intervention. The conclusion of the Article is that some expansion of CFTC authority may be necessary and desirable, but political realities are likely to dictate small, incremental steps towards broader reforms that are unlikely to be achievable in the short term. The first step towards regulation might even be outside the remit of either the SEC or CFTC, and it might be limited to stablecoins—a narrow class of cryptoasset that has been particularly problematic for regulators. However, the bills currently before Congress have problems that will need to be addressed in order to make progress in crypto regulation, no matter how important, a reality.

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* Carol R. Goforth is a University Professor and the Clayton N. Little Professor of Law at the University of Arkansas in Fayetteville. She has decades of experience with corporate, securities, and business law issues in the United States and has recently published a number of articles dealing with the regulation of crypto transactions. She is also the co-author of REGULATION OF CRYPTOASSETS (2d ed. West Academic, 2022), with Professor Yuliya Guseva.

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INTRODUCTION

Following the spectacular implosion of the FTX Trading Ltd. (“FTX”) crypto exchange,¹ which went from an estimated value of \$32 billion to virtually nothing almost overnight in early November 2022,² there was an immediate surge in calls for enhanced regulatory oversight for the crypto industry.³ The most important questions ask what such regulation should look like, and who should be the lead regulator.

For some time, there have been suggestions that the Commodity Futures Trading Commission (“CFTC”) would be a better regulator for crypto businesses (particularly issuers and exchanges) than the Securities and Exchange Commission (“SEC”) has proven to be to date.⁴ On the other hand, the SEC also has its

¹ See David Yaffe-Bellany, *How Sam Bankman-Fried’s Crypto Empire Collapsed*, N.Y. TIMES (Nov. 14, 2022), <http://www.nytimes.com/2022/11/14/technology/ftx-sam-bankman-fried-crypto-bankruptcy.html> [<http://perma.cc/WZ2K-UC6L>].

² MacKenzie Sigalos, *Sam Bankman-Fried Steps Down as FTX CEO as His Crypto Exchange Files for Bankruptcy*, CNBC (Nov. 11, 2022, 5:23 PM), <http://www.cnbc.com/2022/11/11/sam-bankman-frieds-cryptocurrency-exchange-ftx-files-for-bankruptcy.html> [<http://perma.cc/DHC5-F32E>] (“FTX went from a \$32 billion valuation to bankruptcy as liquidity dried up . . .”).

³ See Stephen Katte, *Calls for Regulation Get Louder as FTX Contagion Continues to Spread*, COINTELEGRAPH (Nov. 29, 2022), <http://cointelegraph.com/news/calls-for-regulation-get-louder-as-ftx-contagion-continues-to-spread> [<http://perma.cc/UDG8-KM3H>] (“Crypto executives and politicians are becoming louder in their calls for crypto regulation as the aftermath of the FTX collapse continues to reverberate . . .”); see also Peter Whoriskey & Dalton Bennett, *Crypto’s Free-Wheeling Firms Lured Millions. FTX Revealed the Dangers*, WASH. POST (Nov. 16, 2022, 1:14 PM), <http://www.washingtonpost.com/business/2022/11/16/ftx-collapse-crypto-exchanges-regulation/> [<http://perma.cc/DWY7-UDVD>] (complaining that crypto exchanges operate “outside the traditional banking system,” and “are not subject to the same type of regulation, insurance and disclosure rules that protect customers of traditional banks”).

⁴ See, e.g., Rosemarie Miller, *Bitcoin, Ethereum Regulation Likely to Wind Up Mainly Under CFTC*, FORBES (Sept. 1, 2022, 5:06 PM), <http://www.forbes.com/sites/rosemariemiller/2022/09/01/bitcoin-ethereum-regulation-likely-to-wind-up-mainly-under-cftc/?sh=11adce03c488> [<http://perma.cc/U8TJ-6EP3>] (noting that “[t]he crypto industry seems to prefer the CFTC”); see also Geoffrey A. Manne & M. Todd Henderson, *Let Congress Decide Who Gets to Regulate Crypto*, THE HILL (Sept. 9, 2022, 5:00 PM), <http://thehill.com/opinion/congress-blog/3636402-let-congress-decide-who-gets-to-regulate-crypto/> [<http://perma.cc/LW82-5SYC>] (“The CFTC is the right agency to deliver on sensible regulation that balances the needs of investor protection with regulatory discretion to

share of supporters.⁵ Some observers insist that the SEC's approach is superior because the agency has the experience and resources that would enable it to carry out such a mission,⁶ although additional reasons for favoring the SEC have also been suggested.⁷ While regulators, not surprisingly, are among the most prolific of commentators,⁸ other groups have also been quite vocal about expressing their opinions, including, legislators,⁹ crypto

encourage innovation.”). For academic commentary on this issue, see Lindsay Sain Jones, *Beyond the Hype: A Practical Approach to CryptoReg*, 25 VA. J.L. & TECH. 175, 230 (2022) (“[R]elative to the SEC, the CFTC is better positioned to be the primary regulator of cryptocurrency markets.”); see also Jack J. Longley, *The Crypto-Currency Act of 2020: Evaluating First Steps Toward Clarifying the Digital-Asset Regulatory Landscape*, 54 SUFFOLK U. L. REV. 549, 570 (2021) (“[T]he SEC and CFTC should determine an agreeable way to make the CFTC the primary federal regulatory agency for cryptocurrency . . .”).

⁵ Naturally, the chair of the SEC takes this position. See *Gary Gensler Still Backing the SEC to be the Best Crypto Regulator*, PROTOS (Sept. 8, 2022, 7:33 PM), http://protos.com/gary-gensler-still-backing-the-sec-to-be-the-best-crypto-regulator_trashed/ [<http://perma.cc/HP5V-CRMW>] (“SEC chairman Gary Gensler has reiterated his position that crypto exchanges should register with his organisation.”); see also Carol R. Goforth, *Cinderella’s Slipper: A Better Approach to Regulating Cryptoassets as Securities*, 17 HASTINGS BUS. L.J. 271, 271 (2021) (suggesting “the SEC is the appropriate agency to oversee transactions in cryptoassets, but the underlying legislation should be amended to create a new category of securities, with different disclosure requirements and exemptions”).

⁶ See James Field, *CFTC: The Not-So Friendly Regulator*, COINGEEK (Nov. 7, 2022), <http://coingeeek.com/cftc-the-not-so-friendly-regulator/> [<http://perma.cc/F2LT-9727>] (noting that “the SEC boasts a 4,500-strong bench of investigators, case workers, and prosecutors, the CFTC has a comparatively light 700-strong headcount”).

⁷ One source suggests that the SEC is likely to rise to the top as the preeminent regulator of crypto because of the Commission’s active enforcement division and the array of incentives for companies to cooperate with the SEC. See John Joy, *The Race to Regulate Crypto: CFTC vs. SEC*, JURIST (Nov. 24, 2021, 7:44 AM), <http://www.jurist.org/commentary/2021/11/john-joy-crypto-sec/> [<http://perma.cc/C8N7-VJCZ>] (citing “strategy, resources and industry dynamics” as supporting the SEC’s overall position in the crypto space); see also Alfredo Dally et al., *A Call for Regulation: The SEC Should Oversee Crypto With its Ever-Growing Similarities in Risk and Opportunity to Securities*, 76 U. MIAMI L. REV. 24, 41–42 (2022).

⁸ For example, Brian Quintenz, a former CFTC Commissioner, has complained that the SEC’s approach is “threatening the entire [crypto] ecosystem.” Brenden Rearick, *A Danger to DeFi? SEC Crypto Powers Challenged by Former CFTC Commissioner*, INVESTORPLACE (Oct. 3, 2022, 2:41 PM), <http://investorplace.com/2022/10/a-danger-to-defi-sec-crypto-powers-challenged-by-former-cftc-commissioner/> [<http://perma.cc/Q7LE-QXZ6>]. On the other hand, “SEC Chair Gary Gensler has made clear that the agency intends to be the lead regulator of the US crypto market.” Mark Bini & Joanna Howe, *Here’s Why the SEC Will Likely Be the Primary Cryptocurrency Cop*, BLOOMBERG L. (Oct. 17, 2022, 1:00 AM), <http://news.bloomberglaw.com/us-law-week/is-the-sec-the-new-crypto-sheriff-in-town> [<http://perma.cc/74BB-AMVV>]; see also Hannah Lang, *U.S. Can Regulate Cryptocurrencies Without New Law, Think Tank Says*, REUTERS (Mar. 1, 2022, 11:37 AM), <http://www.reuters.com/business/us-can-regulate-cryptocurrencies-without-new-law-think-tank-says-2022-03-01/> [<http://perma.cc/U4LX-CWVC?type=image>] (suggesting that “[r]egulators have not yet determined how best to regulate cryptocurrencies”).

⁹ Outside observers have noted the Congressional divide. “Cryptocurrency advocates and regulators can agree on one thing: Congress should pass new laws for crypto. Whether Congress can agree on what those laws look like remains uncertain.” Colin Wilhelm &

entrepreneurs,¹⁰ and various other commentators.¹¹ Each of these groups offer opinions and continue to debate who is in the best position to effectively regulate crypto transactions and crypto-based businesses. Bills that appear to run the gamut in their approach have been introduced,¹² without much progress to date in terms of bringing any substantive updates to a vote.¹³ Some bills also

Stephanie Murray, *Despite Call for Congress to Act, New Crypto Laws Look Unlikely This Year*, THE BLOCK (Oct. 5, 2022, 2:00 PM), <http://www.theblock.co/post/175080/despite-call-for-congress-to-act-new-crypto-laws-look-unlikely-this-year> [http://perma.cc/S684-2TN8]. Representative Patrick McHenry (R-North Carolina) has called for legislation “to end Gary Gensler’s regulation by enforcement, and ensure the digital asset ecosystem can thrive here in the U.S.” *Id.* In stark contrast to this position, Senator Elizabeth Warren (D-Massachusetts) has opined that the industry is following the “well-worn path of financial innovation,” which begins with promise but eventually collapses in “crippling losses.” Savannah Fortis, *US Sen. Elizabeth Warren Says Crypto Will Ruin Economy — Community Responds*, COINTELEGRAPH (Nov. 23, 2022), <http://cointelegraph.com/news/us-sen-elizabeth-warren-says-crypto-will-ruin-economy-community-responds> [http://perma.cc/3FEY-PH6W]. She would arrange for the SEC to have control and was reportedly working on a proposal that would do just that: “[c]rypto skeptic Senator Elizabeth Warren is working on a crypto bill that would reportedly give the Gary Gensler-led Securities and Exchange Commission (SEC) most of the regulatory authority over the crypto space.” Brian Quarmby, *Crypto Will Be Regulated as Securities — ICE Boss and Senator Warren*, COINTELEGRAPH (Dec. 7, 2022), <http://cointelegraph.com/news/crypto-will-be-regulated-as-securities-ice-boss-and-senator-warren> [http://perma.cc/8ABQ-MEGK]. On December 14, 2022, she proposed a bill called the “Digital Asset Anti-Money Laundering Act of 2022” that would impose know-your-customer requirements on a wide swath of participants in the crypto ecosystem while limiting use of privacy tools such as mixers and privacy coins. See Leo Schwartz, *Elizabeth Warren’s New Crypto Bill Sent Shockwaves Through the Industry. Here’s What it Could Mean*, YAHOO! (Dec. 21, 2022), <http://www.yahoo.com/finance/news/elizabeth-warren-crypto-bill-sent-120000157.html> [http://perma.cc/A2D2-QB33]. Yet another point of view was articulated by Senate Banking Committee chair Sherrod Brown (D-OH). He has “told reporters he was unsure about the need for legislation, which he noted could be heavily influenced by the crypto industry itself.” Zachary Warmbrodt & Eleanor Mueller, *Elizabeth Warren Wants to Pass a Major Crypto Bill. Sherrod Brown Says Not So Fast*, POLITICO (Nov. 15, 2022, 4:39 PM), <http://www.politico.com/news/2022/11/15/ftx-sec-cftc-crypto-regulations-00067040> [http://perma.cc/WXX4-5YB7].

¹⁰ “Recently, Kara Calvert, the Head of United States Policy at crypto exchange Coinbase, spoke about crypto regulations. Speaking with industry news sources at the Messari Mainnet conference in New York, Calvert expressed support for proposals giving the CFTC oversight of the crypto market.” Jimmy Aki, *If the CFTC Becomes the Main Crypto Regulator in US Would That Be a Win for Sector?*, BUS. 2 CMTY. (Oct. 5, 2022), <http://www.business2community.com/crypto-news/if-the-cftc-becomes-the-main-crypto-regulator-in-us-would-that-be-a-win-for-sector-02556272> [http://perma.cc/AF7W-WE9E].

¹¹ See Fortis, *supra* note 9 (noting conflicting opinions from legislators, entrepreneurs, and others). Two experts, former CFTC Chair Timothy Massad and Harvard Law Professor Howell Jackson, simply note that “there is no consensus on the path forward to achieve better regulation.” Timothy G. Massad & Howell Jackson, *How to Improve Regulation of Crypto Today—Without Congressional Action—and Make the Industry Pay for it*, BROOKINGS (Oct. 13, 2022), <http://www.brookings.edu/research/how-to-improve-regulation-of-crypto-today-without-congressional-action-and-make-the-industry-pay-for-it/> [http://perma.cc/4GHJ-3B3M].

¹² See *infra* Part I.

¹³ See, e.g., Wilhelm & Murray, *supra* note 9.

suggest that at least certain parts of the crypto ecosystem need to be regulated by someone other than either the SEC or CFTC.¹⁴

Following this introduction, this Article provides a comparison of the regulatory approaches taken by the SEC and CFTC. The second section includes an analysis of the largest gaps in current regulations. The third part describes the most commonly discussed legislative proposals that seek to allocate power between the SEC and CFTC and otherwise address perceived gaps in crypto regulation. The fourth section considers whether a comprehensive bill or a more limited approach offers a better chance for progress, along with analyzing which issues are most likely to generate sufficient consensus for approval. The fifth section reminds readers of the stakes involved in appropriately regulating cryptoassets in order to explain why forward progress is so important, even if it is piecemeal. The conclusion notes why small steps forward are the most likely to be realistically achievable.

I. THE SEC'S AND CFTC'S APPROACH TO CRYPTO REGULATION

A. The Role of the SEC

According to the SEC's official website, its mission is "to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation."¹⁵ In furtherance of those objectives, the SEC regulates trading of securities and various participants in the capital markets. In very general terms, the Securities Act of 1933 (the '33 Act)¹⁶ requires that an issuer register any security with the SEC before selling it or even offering it for sale, unless there is an available exemption.¹⁷ In addition, the Securities Exchange Act of 1934 (the '34 Act)¹⁸ imposes ongoing obligations on companies with publicly registered securities and also regulates market professionals and facilities operating as exchanges that assist in the trading of securities.¹⁹

¹⁴ For example, Senator Pat Toomey (R-Pennsylvania) has advocated giving the Office of the Comptroller of the Currency authority over stablecoin issuers. *See infra* Part I and notes 177–182.

¹⁵ *Our Goals*, U.S. SEC. & EXCH. COMM'N, <http://www.sec.gov/our-goals> [<http://perma.cc/ULK3-XERY>].

¹⁶ The '33 Act is codified at 15 U.S.C. §§ 77a–77aa.

¹⁷ This requirement appears in Section 5 of the '33 Act. *See* 15 U.S.C. § 77e.

¹⁸ The '34 Act is codified at 15 U.S.C. §§ 78a–78qq.

¹⁹ For example, it is "unlawful for any broker, dealer, or exchange" to use any exchange subject to U.S. jurisdiction "to effect any transaction in a security, or to report any such transaction, unless such exchange (1) is registered as national securities exchange . . . or (2) is exempted." 15 U.S.C. § 78e.

The foundational issue for the SEC with regard to crypto regulation has been whether and when cryptoassets are securities, because obviously nothing like digital assets could have been included in statutes that were drafted decades before the first cryptoasset was created.²⁰ It wasn't until 2017 that the SEC first articulated its approach to regulating crypto,²¹ when it issued a report concluding that cryptoassets issued by The DAO were "investment contracts" and therefore securities under federal law.²² That document is generally referred to as the DAO Report.²³

The phrase "investment contract," which is included in the statutory definition of "security,"²⁴ is not defined in the federal securities statutes, but rather by case law, most notably the 1946 U.S. Supreme Court opinion in *SEC v. W.J. Howey Co.*²⁵ In that case, the Court concluded that "an investment contract for purposes of the Securities Act means a contract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party"²⁶

²⁰ The introduction of Bitcoin, the first successful cryptoasset, did not come until the end of 2008, with a whitepaper entitled, "Bitcoin: A Peer-to-Peer Electronic Cash System." See SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM (2008), <http://bitcoin.org/bitcoin.pdf> [<http://perma.cc/AQ4M-SHXZ>].

²¹ Report of Investigation: The DAO, Exchange Act Release No. 81207 (July 25, 2017), <http://www.sec.gov/litigation/investreport/34-81207.pdf> [<http://perma.cc/5MY5-9ZV5>] [hereinafter DAO Report].

²² Technically, the first action brought by the SEC involving a cryptoasset was filed in July 2013. *SEC Charges Texas Man With Running Bitcoin-Denominated Ponzi Scheme*, Press Release No. 2013-132, U.S. SEC. & EXCH. COMM'N (July 23, 2013), <http://www.sec.gov/news/press-release/2013-132> [<http://perma.cc/G6DD-TGDT>]; see also Complaint at 1–2, *SEC v. Shavers*, No. 4:13CV00416, 2013 WL 3810441 (E.D. Tex. July 23, 2013). This case, however, involved interests in Bitcoin Savings and Trust that were a sham, rather than a purchaser relying on Bitcoin itself as a security. See *SEC v. Shavers*, No. 13-cv-00416, 2022 WL 14318269, at *1 (E.D. Tex. Oct. 24, 2022).

²³ For example, see Securities Act of 1933 § 2(a)(1), 15 U.S.C.A. § 77b (West); and Securities Act of 1934 Act § 3(a)(10), 15 U.S.C.A. § 78c (West) which define the term "security" to include investment contracts.

²⁴ See DAO Report, *supra* note 21. The name of the group that created these tokens was "The DAO" (though "DAO" typically is a generic acronym for decentralized autonomous organization). *Id.* The DAO was, in fact, a decentralized autonomous organization, which sometimes creates confusion when describing what happened and what the SEC concluded. See generally Ian Allison, *Ethereum Reinvents Companies with the Launch of The DAO*, INT'L BUS. TIMES (Apr. 30, 2016, 9:00 AM), <http://www.ibtimes.co.uk/ethereum-reinvents-companies-launch-dao-1557576> [<http://perma.cc/WL9Y-3D7D>] (explaining that The DAO is a decentralized organization in which its members have voting power and control over funds).

²⁵ See 15 U.S.C.A. § 77b (West).

²⁶ *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946).

²⁷ *Id.* at 298–99.

Now simply called the *Howey* test, this approach has been clarified over time in various ways. Modern courts have essentially explained that the *Howey* test requires all of the following:

- (i) an investment of money (or something else of value);²⁷
- (ii) in a common enterprise;²⁸
- (iii) where the purchaser expects to receive profits;²⁹
and
- (iv) the expectation of profits is from the essential entrepreneurial efforts of others.³⁰

However, application of the *Howey* test is not always simple.³¹ The DAO Report itself was not generally regarded as clarifying the

²⁷ While the *Howey* Court test originally spoke of “money,” subsequent opinions make it clear that “cash is not the only form of contribution or investment that will create an investment contract. *Uselton v. Com. Lovelace Motor Freight, Inc.*, 940 F.2d 564, 574 (10th Cir. 1991). Instead, the ‘investment’ may take the form of ‘goods and services’ or ‘some other exchange of value.’” *Id.* (internal citations omitted).

²⁸ See *Howey*, 328 U.S. at 299. This is the element of the *Howey* test that is most difficult to apply, in part because there is a divergence among the federal circuits. As to what it requires, see Maura K. Monaghan, Note, *An Uncommon State of Confusion: The Enterprise Element of Investment Contract Analysis*, 63 *FORDHAM L. REV.* 2135, 2137–38 (1995). Some courts appear to require “horizontal commonality,” some accept “strict vertical commonality,” while others accept “broad vertical commonality.” See *id.* at 2152–63 (discussing the various judicial applications of the *Howey* “common enterprise” element). Horizontal commonality requires that investors’ contributions be pooled together so their fortunes rise and fall together; strict vertical commonality requires the investor and promoter or investment manager to have interests that are tied together; and broad vertical commonality generally looks to whether the investor is depending heavily on the promoter in deciding whether to invest. See *id.*; see also Benjamin Akins et al., *The Case for the Regulation of Bitcoin Mining as a Security*, 19 *VA. J.L. & TECH.* 669, 690 (2015).

²⁹ See *Howey*, 328 U.S. at 299. The U.S. Supreme Court held in *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837 (1975), that in order for this element to be met, “the primary motivation for investing must be to achieve a return on the value invested.” Akins et al., *supra* note 28 at 691.

³⁰ Although the *Howey* Court said the expectation of profits needed to be based “solely” on the efforts of others, the rule appears to have been clarified over time. See *SEC v. Glenn W. Turner Enters., Inc.*, 474 F.2d 476, 481–82 (9th Cir. 1973) *cert. denied*, 414 U.S. 821 (1973) (finding that the appropriate inquiry is “whether the efforts made by those other than the investor are the undeniably significant ones, those essential managerial efforts which affect the failure or success of the enterprise”); see also *Hocking v. Dubois*, 885 F.2d 1449, 1455 (9th Cir. 1989) (applying the *Glenn W. Turner Enters.* interpretation of this prong and holding that the test should determine whose efforts are “significant” and “essential”).

³¹ Application of the *Howey* test is not always straightforward—even for transactions that predate the advent of cryptoassets. See, e.g., Marc I. Steinberg & William E. Kaulbach, *The Supreme Court and the Definition of ‘Security’: The ‘Context’ Clause, ‘Investment Contract’ Analysis, and Their Ramifications*, 40 *VAND. L. REV.* 489 *passim* (1987). In fact, *Howey* has spawned hundreds of cases and clarifications, resulting in a range of disagreements among the circuits about how to apply the test. See *id.*; see generally Theresa A. Gabaldon, *A Sense of a Security: An Empirical Study*, 25 *J. CORP. L.* 307 (2000); see also Miriam R. Albert, *The Howey Test Turns 64: Are the Courts Grading this Test on a*

issue of which cryptoassets would be securities because the tokens involved in that instance were unusual, having been specifically designed as an investment vehicle for other crypto projects.³² Thus, the report was not sufficient to prevent considerable uncertainty about when the federal securities laws would apply to cryptoassets.³³ This confusion continues to exist, notwithstanding ongoing enforcement activity against a range of crypto issuers.³⁴

As an example of the on-going confusion, consider the SEC's decision to initiate an insider trading case in the summer of 2022 alleging that nine of the twenty-five cryptoassets that had been traded by the insider's brother and friend were securities.³⁵ The complaint did not explain why nine of the cryptoassets were singled out as securities while the others were not, despite

Curve?, 2 WM. & MARY BUS. L. REV. 1 (2011) (concluding that “the benefits of the flexibility of the *Howey* test outweigh the costs” in terms of the circuit split).

³² For a more detailed consideration of how the SEC applied *Howey* to the DAO tokens, see Goforth, *supra* note 5, at 280–83; Michael Mendelson, *From Initial Coin Offerings to Security Tokens: A U.S. Federal Securities Law Analysis*, 22 STAN. TECH. L. REV. 52 (2019); Ethan D. Trotz, *The Times They Are A Changin': Surveying How the Howey Test Applies to Various Cryptocurrencies*, 11 ELON L. REV. 201, 210–12 (2019).

³³ Despite the SEC's position to the contrary, some authorities have argued that cryptocurrencies do not generally fit *Howey* at all. See Florian Uffer, *Application of the Howey Test to Cryptocurrency*, UNIV. OF RICH. SCH. OF L., JOLT BLOG (Mar. 11, 2019), <http://jolt.richmond.edu/2019/03/11/application-of-the-howey-test-to-cryptocurrency/> [<http://perma.cc/776H-PP62>]; Boris Richard, *What The Howey Test Misses About Crypto Assets*, LAW360 (June 28, 2019), <http://www.fticonsulting.com/~media/Files/us-files/insights/articles/2019/jul/what-howey-test-misses-about-crypto-assets.pdf> [<http://perma.cc/G72U-J3XJ>]; *Token Issue Considerations: Why Howey Test is Ineffective for Blockchain and Crypto Space?*, CRYPTOTAPAS (Jan. 7, 2019), [<http://perma.cc/TG6E-PFET>].

³⁴ See Alexander C. Drylewsk et al., *15th Annual Securities Litigation and Regulatory Enforcement Update: State of the Cryptocurrency Market*, SKADDEN INSIGHTS (Nov. 15, 2022), <http://www.skadden.com/insights/publications/2022/11/state-of-the-cryptocurrency-market> [<http://perma.cc/UT9N-GA7B>].

From 2013 to 2021, the SEC brought a total of 97 enforcement actions involving cryptocurrency activity. In 2021 alone, the SEC brought a total of 20 enforcement actions. The majority of SEC cases to date have focused on two allegations: an unregistered offering of securities or fraud in the offer or sale of securities.

Id.

³⁵ See generally Complaint, SEC v. Wahi, No. 2:22-cv-01009 (W.D. Wash., July 21, 2022), <http://storage.courtlistener.com/recap/gov.uscourts.wawd.312176/gov.uscourts.wawd.312176.1.0.pdf> [<http://perma.cc/C2TK-HVSA>]. Backlash to the uncertainty caused by this choice was swift. According to Caroline D. Pham, a CFTC commissioner, “[t]he case *SEC v. Wahi* is a striking example of ‘regulation by enforcement.’” *Public Statements & Remarks, Statement of Commissioner Caroline D. Pham on SEC v. Wahi*, COMMODITY FUTURES TRADING COMM'N (July 21, 2022), <http://www.cftc.gov/PressRoom/SpeechesTestimony/phamstatement072122> [<http://perma.cc/R9WJ-T457>].

repeated pronouncements from the agency or its chair that almost all cryptoassets are securities.³⁶

In addition to asserting jurisdiction over crypto issuers, beginning with the DAO Report, the SEC has taken the position that any exchange facilitating transactions in cryptoassets that are securities is required to register as a securities exchange³⁷ or comply with an exemption such as being a registered Alternative Trading System (“ATS”).³⁸ The registration process for exchanges includes filing detailed disclosure documents with the SEC and compliance with requirements for self-regulated organizations such as the Financial Industry Regulatory Authority (“FINRA”).³⁹ Recent proposals from the SEC would further broaden the requirement of registration, adding computer protocols to the definition of exchange,⁴⁰ meaning that even “platforms that do not function as traditional exchanges” could be required to register with the SEC or find and comply with the requirements of an exemption.⁴¹ To date, most crypto exchanges have resisted the call

³⁶ See Mat Di Salvo, *Senator Toomey Challenges Gensler’s View That Nearly ‘All Crypto Tokens Are Securities,’* DECRYPT (Sept. 15, 2022), <http://decrypt.co/109847/toomey-gary-gensler-sec-crypto-tokens-securities> [<http://perma.cc/ZB4A-XASN>] (discussing “the chairman’s view that nearly all cryptocurrencies currently trading today are likely unregistered securities”).

In a more recent development involving Coinbase, the company revealed on March 22, 2023, that it had received notice from the SEC that the commission has concerns “regarding an undefined portion of [its] listed digital assets.” Paul Grewal, *We Asked the SEC for Reasonable Crypto Rules for Americans. We Got Legal Threats Instead.*, COINBASE BLOG (Mar. 22, 2023), <http://www.coinbase.com/blog/we-asked-the-sec-for-reasonable-crypto-rules-for-americans-we-got-legal>. According to Grewal, Coinbase’s Chief Legal Officer, the company “asked the SEC specifically to identify which assets on [Coinbase’s] platforms they believe may be securities, and they declined to do so.” *Id.* Grewal also reported that “[a]t no point in this investigation has the SEC told us a single specific concern about a single asset on our platform.” *Id.*

³⁷ See DAO Report, *supra* note 21, at 18 (explaining that with regard to businesses facilitating trades in cryptoassets that are securities, “any entity or person engaging in the activities of an exchange . . . must register as a national securities exchange or operate pursuant to an exemption from such registration”).

³⁸ Rule 3a1-1(a)(2) under the Securities Exchange Act of 1934 (the ‘34 Act) exempts from the definition of “exchange” under Section 3(a)(1) an ATS that complies with Regulation ATS. See 17 C.F.R. § 240.3a1-1(a)(2) (2018).

³⁹ See *The Laws That Govern the Securities Industry*, INVESTOR.GOV, <http://www.investor.gov/introduction-investing/investing-basics/role-sec/laws-govern-securities-industry> [<http://perma.cc/9VNY-TVNY>].

⁴⁰ See Amendments Regarding the Definition of “Exchange” and Alternative Trading Systems (ATSs) That Trade U.S. Treasury and Agency Securities, National Market System (NMS) Stocks, and Other Securities, Exchange Act Release No. 34-94062, <http://www.sec.gov/rules/proposed/2022/34-94062.pdf> [<http://perma.cc/Y6AR-3T9H>].

⁴¹ Donna Parisi & Jennifer D. Morton, *SEC’s Proposed Amendments to Definition of ‘Exchange’: A Potential Game-Changing Impact on Crypto Companies*, REUTERS LEGAL NEWS (May 11, 2022), <http://www.shearman.com/-/media/files/perspectives/2022/05/secs->

to register with the SEC,⁴² although there have been scattered enforcement actions and continued warnings from the agency.⁴³ This sets the stage for considering how the CFTC regulates cryptoassets, transactions, and businesses.

B. The CFTC and Crypto Regulation

Commodities regulation in the United States originally focused on derivative contracts relating to agricultural products,⁴⁴ which are regulated according to the terms of the Commodity Exchange Act (“CEA”).⁴⁵ It wasn’t until 1974 that the Commodity Futures Trading Commission was established⁴⁶ and charged with acting “to promote the integrity, resilience, and vibrancy of the U.S. derivatives markets through sound regulation.”⁴⁷ The definition of “commodity” has been broadened over the years so that the term now includes not only a large number of specifically listed agricultural products, but also “all other goods and articles, . . . and all services, rights, and interests . . . in which contracts for future delivery are presently or in the future dealt in.”⁴⁸

In contrast to the SEC, which regulates both securities and the markets in which they are traded,⁴⁹ the CFTC does not have jurisdiction over the physical or spot markets in which commodities are traded, except to the extent that fraud or

proposed-amendments-to-definition-of-exchange-potential-gamechanging-impact-on-crypto.pdf [http://perma.cc/S973-WHLR].

⁴² For example, following the SEC’s decision to initiate an insider trading action against a former Coinbase manager, the Coinbase exchange publicly and definitively denied that it was trading any securities. See Paul Grewal, *Coinbase Does Not List Securities. End of Story.*, COINBASE BLOG (July 21, 2022), <http://www.coinbase.com/blog/coinbase-does-not-list-securities-end-of-story> [http://perma.cc/9EBW-EVU6].

⁴³ See, e.g., *In re Poloniex, L.L.C.*, Exchange Act Release No. 92607 (Aug. 9, 2021), <http://www.sec.gov/litigation/admin/2021/34-92607.pdf> [http://perma.cc/58LU-BV72] (imposing a cease-and-desist order against the exchange). In addition, there are reports that, as of August 2022, the SEC was investigating “every U.S. crypto exchange.” Michael Del Castillo, *Every U.S. Crypto Exchange (And Binance) Is Being Investigated By The SEC, Says Senator Lummis Staffer*, FORBES (Aug. 4, 2022), <http://www.forbes.com/sites/michaeldelcastillo/2022/08/04/every-us-crypto-exchange-and-binance-is-being-investigated-by-the-sec-says-senator-lummis-staffer/?sh=25ea21be22c2> [http://perma.cc/C37D-ZVEE].

⁴⁴ See *About The Commission*, COMMODITY FUTURES TRADING COMM’N, <http://www.cftc.gov/About/AboutTheCommission> [http://perma.cc/BF7W-5GUP] (last visited Feb. 7, 2023) (outlining a general history of the history of the CFTC).

⁴⁵ See generally Commodity Exchange Act, 7 U.S.C. §§ 1–27f.

⁴⁶ The Commodity Futures Trading Commission Act of 1974, Pub. L. No. 93-463, 88 Stat. 1389, was signed into law in October 1974, and it both overhauled the CEA and created the CFTC. See H.R. 13113, 93d Cong. (1974).

⁴⁷ *About The Commission*, *supra* note 44.

⁴⁸ Commodity Exchange Act, 7 U.S.C. § 1a(9). The material that has been omitted from the quote references onions and motion picture box office receipts, which are excluded from the definition of commodity for historical reasons.

⁴⁹ See *supra* Part I.A.

manipulation is involved (a “spot” market is where the actual commodity is traded, rather than where derivative contracts or indirect interests in the commodity are exchanged).⁵⁰ Instead, the CFTC regulates derivatives by requiring registration of and exercising supervision over derivative market participants and infrastructures.⁵¹ Pursuant to the CEA, derivative contracts, each of which are based on underlying commodities, may only be traded on designated contract markets (“DCMs”)⁵² or swap execution facilities (“SEFs”), whichever is applicable.⁵³

The other major distinction between the regulatory approach of the SEC and the CFTC is that the SEC’s registration process is very rule-oriented, requiring compliance with specific disclosure and operational requirements.⁵⁴ The CFTC operates under a principles-

⁵⁰ See COMMODITY FUTURES TRADING COMM’N, THE CFTC’S ROLE IN MONITORING VIRTUAL CURRENCIES 2 (2020) (“While its regulatory oversight authority over commodity cash markets is limited, the CFTC maintains general anti-fraud and manipulation enforcement authority over virtual currency cash markets as a commodity in interstate commerce.”). Under the terms of the CEA, it is unlawful for any person:

[T]o use or employ, or attempt to use or employ, in connection with any contract of sale of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity, any manipulative or deceptive device or contrivance, in contravention of such rules and regulations as the [CFTC] shall promulgate. . . .

Commodity Exchange Act, 7 U.S.C. § 9(1).

⁵¹ See Carol Bavousett Mattick, *CFTC Regulation*, 2021 TEX. CLE ADVANCED BUS. L. ch. 10.2-IV (2021), WL 6427448.

⁵² DCMs are defined by the CFTC as “exchanges that may list for trading futures or option contracts based on all types of commodities and that may allow access to their facilities by all types of traders, including retail customers.” *Trading Organizations*, COMMODITY FUTURES TRADING COMM’N [hereinafter *Trading Organizations*], <http://www.cftc.gov/IndustryOversight/TradingOrganizations/index.htm> [<http://perma.cc/6R2Y-SV99>] (last visited Feb. 7, 2023).

⁵³ Speaking very generally, swaps are derivative contracts that involve the exchange of cash flows or liabilities from two different financial instruments. See Commodity Exchange Act, 7 U.S.C. § 1a(47). Under the CEA, no person is allowed to operate a facility for trading or processing swaps unless they are registered as a DCM or SEF. See *id.* § 7b-3(a)(1); see also *Trading Organizations*, *supra* note 52.

⁵⁴ See Lydia Beyoud & Allyson Versprille, *Why the Crypto World Flinches When the SEC Calls Coins Securities*, BLOOMBERG (July 29, 2022) <http://www.bloomberg.com/news/articles/2022-07-29/why-crypto-flinches-when-sec-calls-coins-securities-quicktake> [<http://perma.cc/JSB4-B4GZ>] (last visited Feb. 7, 2023) (explaining this result because the “SEC was formed in the wake of the market crash of 1929 and sees its core mission as protecting investors by requiring copious disclosures by financial entities”). In the context of exchanges, for example, classifying assets as securities “would make running a cryptocurrency exchange more expensive and complex. Under US rules, the label carries strict investor-protection requirements for platforms and issuers.” *Id.*

based approach⁵⁵ which focuses on achieving certain objectives.⁵⁶ Moreover, the CFTC allows self-certification of compliance, creating a nimbler and more flexible regulatory framework.⁵⁷

Despite its more limited scope of operations and significantly smaller budget as compared to the SEC, the CFTC acted early to assert its jurisdiction over cryptoassets, or at least over derivatives based on such assets. The CFTC made its first official statement on its jurisdiction over cryptoassets in 2014, when then-Chairman Timothy Massad testified before the Senate Committee on Agriculture, Nutrition and Forestry:

The [Commodity Exchange Act] defines the term commodity very broadly so that in addition to traditional agricultural commodities, metals, and energy, the CFTC has oversight of derivative contracts related to Treasury securities, interest rate indices, stock market indices, currencies, electricity, and heating degree days, to name just a few underlying products. Derivative contracts based on a virtual currency represent one area within our responsibility.⁵⁸

⁵⁵ The CFTC requires derivatives exchanges to comply with twenty-three core principles in order to list a new contract. Commodity Exchange Act, 7 U.S.C. § 7(a)(2). These principles range from things like preventing manipulation to overseeing member conduct. *Id.* However, so long as the exchange provides a plan for achieving all of the listed objectives, the CFTC has limited power to delay listing of the contract. *Id.* In fact, it may do so only if there are “novel or complex issues that require additional time to analyze, an inadequate explanation by the submitting registered entity, or a potential inconsistency” with the CEA or CFTC regulation. *Id.*

⁵⁶ Obviously, there are detailed regulations that explain what is meant by each of the principles, but the CFTC does not require that the principles be satisfied in exactly the same way. As a former CFTC Commissioner once explained, “principles-based approach allows enormous flexibility. It allows the industry and the CFTC to look around the corner, to be nimble and quick and to react – in real time – to changes or potential changes in the marketplace.” *Public Statements & Remarks, Speech of Comm’r Bart Chilton, Let’s Not “Dial M for Merger”: CFTC’s Principles-Based Regulation – A Success Story*, COMMODITY FUTURES TRADING COMM’N (Nov. 13, 2007), <http://www.cftc.gov/PressRoom/SpeechesTestimony/opachilton-4> [<http://perma.cc/V37S-FGES>] (also explaining that “principles-based regulation” means the agency sets “broad principles for which we expect industry adherence”).

⁵⁷ See Lee Reiners, *Bitcoin Futures: From Self-Certification to Systemic Risk*, 23 N.C. BANKING INST. 61 (2019).

Self-certification allows designated contract markets (“DCMs”) to list any new contract for trading, and approve any new rule or amendment, by providing a written certification to the CFTC that the new contract, rule, or rule amendment, complies with the CEA and CFTC regulations. Unless the CFTC finds the new product or rule change violates the CEA or CFTC regulations, the DCM may list the new product no sooner than one full business day following the self-certification. DCMs also have the option of voluntarily submitting new contracts for approval to the Commission.

Id. at 71.

⁵⁸ *The Commodity Futures Trading Commission: Effective Enforcement and the Future of Derivatives Regulation Before the S. Comm. on Agric., Nutrition & Forestry*, 113th

In 2015, the CFTC brought its first enforcement action involving a virtual currency, in which the CFTC asserted that “Bitcoin and other virtual currencies are encompassed in the definition and properly defined as commodities.”⁵⁹ In 2018, the CFTC’s classification of crypto as a commodity was challenged in two federal courts.⁶⁰ The courts in those cases confirmed the CFTC’s authority to classify virtual currencies as commodities under the CEA, even if no futures contract is listed or traded on a particular cryptoasset.⁶¹

To clarify its position, the CFTC published initial proposals in 2017⁶² and then final interpretive guidance in 2020,⁶³ applying its regulatory authority to retail transactions in crypto, which it called “virtual currencies.”⁶⁴ Since that time, the CFTC has continued to be active in the crypto space, with twenty percent of its enforcement actions in 2022 involving cryptoassets.⁶⁵ These actions included claims based on fraud in connection with the sale of futures contracts as well as actions against derivatives marketplaces, and even the CFTC’s first claim against a DAO.⁶⁶

There is no indication that the CFTC intends to step back from its interest in crypto regulation. In his October 2021 confirmation hearing, CFTC Chairman Rostin Behnam asserted that the CFTC

Cong. 55 (2014) (statement of Timothy Massad, Chairman, Commodity Futures Trading Commission), <http://www.agriculture.senate.gov/imo/media/doc/S.%20Hrg.%20113-640%20-%20THE%20COMMODITY%20FUTURES.pdf>. [<http://perma.cc/6HQZ-EF75>].

⁵⁹ *In re Coinflip, Inc.*, CFTC Docket No. 15-29, Order Instituting Proceedings Pursuant to Sections 6(C) and 6(D) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions (Sept. 17, 2015), <http://www.cftc.gov/sites/default/files/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfcoinfliprorder09172015.pdf> [<http://perma.cc/UDB2-FTA2>] (ordering bitcoin options trading platform operator and its CEO to cease operations).

⁶⁰ *See* Commodity Futures Trading Comm’n v. McDonnell, 287 F. Supp. 3d 213 (E.D.N.Y. 2018); *see also* Commodity Futures Trading Comm’n v. My Big Coin Pay, Inc., 334 F. Supp. 3d 492 (D. Mass. 2018).

⁶¹ *See My Big Coin Pay, Inc.*, 334 F. Supp. 3d at 498.

⁶² *See A CFTC Primer of Virtual Currencies*, COMMODITY FUTURES TRADING COMM’N (Oct. 17, 2017), http://www.cftc.gov/sites/default/files/idc/groups/public/documents/file/labctc_primercurrencies100417.pdf [<http://perma.cc/F65B-Z7LT>].

⁶³ *See generally Digital Assets Primer, Press Release No. 8336-20*, COMMODITY FUTURES TRADING COMM’N (Dec. 17, 2020), <http://www.cftc.gov/PressRoom/PressReleases/8336-20> [<http://perma.cc/P3VQ-MNGA>].

⁶⁴ *See id.* A lack of consistent terminology plagues the crypto space. Among other words and phrases, cryptoassets have been called cryptocurrencies, crypto tokens, virtual currencies, digital assets, and virtual assets. This Article uses “cryptoasset” or simply “crypto,” a generic term designed to encompass all intangible assets that are stored and whose transaction histories are memorialized via blockchain technology on computer networks.

⁶⁵ Sebastian Sinclair, *CFTC Racked Up Crypto Enforcement Record in Past Year*, BLOCKWORKS (Oct. 21, 2022), <http://blockworks.co/news/cftc-racked-up-crypto-enforcement-record-in-past-year> [<http://perma.cc/6ADX-9M2B>].

⁶⁶ *See id.*

could take “primary responsibility” for crypto enforcement. “I think it’s important for this committee to reconsider and consider expanding authority to the CFTC,” he said.⁶⁷ He has also sought additional funding to support this agenda.⁶⁸

The CFTC has also taken issue with suggestions that it is not sufficiently stringent in its regulation of cryptoassets and transactions. Chairman Rostin Behnam has specifically denied that the CFTC is less assertive in its oversight of crypto.⁶⁹ Others have agreed, noting that “there is a misconception in the crypto industry about what it means to be a ‘friendly’ regulator.”⁷⁰ “Friendly” in the context of crypto means being “open to innovation,” not being lax with regard to enforcement.⁷¹ In fact, the CFTC rejects the notion that it should be viewed as friendlier to crypto in the sense of being more tolerant of any abuses.⁷² These efforts do not, however, mean that the current regulatory structure under the CEA is sufficiently comprehensive, or that the SEC and CFTC are the only agencies with a potential interest in crypto oversight.

II. THE LARGEST REGULATORY GAPS

Given that both the SEC and CFTC are actively seeking to oversee crypto transactions and businesses active in the space, it

⁶⁷ James Rubin, *CFTC Chair Indicates Agency Will Increase Crypto Enforcement: Report*, COINDESK (May 19, 2022), <http://www.coindesk.com/policy/2022/05/18/cftc-chair-indicates-agency-will-increase-crypto-enforcement-report/> [<http://perma.cc/RY8N-AZCW>].

⁶⁸ Additionally, in testimony before the Senate Committee on Agriculture, Nutrition and Forestry in February, Behnam urged lawmakers to give the CFTC more authority and a \$100 million increase to the agency’s annual budget of \$300 million to take on additional responsibilities in regulating the digital asset markets. See Allyson Versprille & Robert Schmidt, *CFTC Seeks Bigger Role in U.S. Efforts to Oversee Crypto Trading*, BLOOMBERG (Feb. 9, 2022), <http://www.bloomberg.com/news/articles/2022-02-09/cftc-seeks-bigger-role-in-u-s-efforts-to-oversee-crypto-trading> [<http://perma.cc/YY2J-2WQ5>].

⁶⁹ See Newton Gitonga, *CFTC Chair Dispels Narrative That the Regulator Would be Friendly to the Crypto Industry*, ZYCRYPTO (May 13, 2022), <http://zycrypto.com/cftc-chair-dispels-narrative-that-the-regulator-would-be-friendly-to-the-crypto-industry/> [<http://perma.cc/GE2U-4C6Q>]. This source reported that “CFTC chair Rostin Behnam has disclosed the commission is not going to be more friendly than other regulators.” *Id.* Backing up this claim, the CFTC “has gone after at least 30 different crypto firms in the last seven years, imposing fines totaling over \$787 million.” *Id.*

⁷⁰ In *CoinDesk*, Jeremy Liabo Examines Commodity Futures Trading Commission with Crypto Regulatory Teeth, ROPES&GRAY (Oct. 6, 2022), <http://www.ropesgray.com/en/newsroom/news/2022/october/in-coindesk-jeremy-liabo-examines-commodity-futures-trading-commission-with-crypto-regulatory-teeth> [<http://perma.cc/SZQ5-FUVH>].

⁷¹ *Id.*

⁷² “Its reputation as the ‘crypto-friendly’ regulator has dogged the CFTC since the beginning of its interactions with digital assets, much to the chagrin of current Chairman Rostin Behnam, who . . . gets ‘very irritated when folks start to talk about the CFTC as a more favorable regulator.’” Field, *supra* note 6.

seems obvious that resolving regulatory grey areas should be a high priority.⁷³ One risk of the current approach is that regulation by multiple agencies can result in duplication and over-regulation.⁷⁴ While that is certainly a valid concern, there are also at least three areas where there appear to be more significant issues causing problems for industry, regulators, and the public:⁷⁵ (1) the question of who should have authority over exchanges that deal in crypto that is not a security; (2) the question of what cryptoassets are securities; and (3) the question of how to deal with so-called stablecoins (a cryptoasset that is designed to have a stable value pegged to another asset, typically government currency such as the U.S. dollar or Euro).⁷⁶

A. Regulation of Exchanges for Crypto that is NOT a Security

One of the biggest existing holes in the way in which the United States approaches and regulates cryptoassets involves the lack of an effective regulator for exchanges that deal in cryptoassets that are not securities. As stated above, the SEC regulates securities and exchanges on which securities are traded,⁷⁷ but crypto exchanges continue to argue that the cryptoassets they list are not securities.⁷⁸ The CFTC regulates

⁷³ “Both the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) claim regulatory authority over the digital asset sphere, and the boundaries between the two are unclear. The result has been a jurisdictional grey area.” *Id.*

⁷⁴ Commentators have warned that over-regulation carries risks. “[P]oorly calibrated regulations or overly aggressive oversight not only risks flight to other crypto markets but also threatens a critical US national-security advantage: the dollar’s dominance as the world’s reserve currency . . .” Ian Talley, *Overregulation Could Push Illicit Crypto Transactions into the Market, US Experts Warn*, FIN. NEWS LONDON (Aug. 26, 2021), <http://www.fnlondon.com/articles/overregulation-could-push-illicit-crypto-transactions-into-the-market-us-experts-warn-20210826> [<http://perma.cc/ZLW4-PBC8>].

⁷⁵ Sheila Bair, former head of the Federal Deposit Insurance Corporation has explained that the lack of effective regulation in the crypto ecosystem has resulted in “more and more people . . . getting hurt.” *Ex-FDIC Head: People ‘Getting Hurt’ by Lack of Crypto Rules*, PYMNTS (Nov. 20, 2022), <http://www.pymnts.com/cryptocurrency/2022/ex-fdic-head-people-getting-hurt-by-lack-of-crypto-rules/> [<http://perma.cc/CRE5-DMHX>]. On October 3, 2022, in light of risks to the broader financial sector, a panel consisting of the leaders of all U.S. banking and financial agencies urged prioritization of crypto enforcement “and recommended that Congress provide regulatory agencies with more resources to police crypto.” Ephrat Livni, *Crypto Needs More Rules and Better Enforcement, Regulators Warn*, N.Y. TIMES (Oct. 3, 2022), <http://www.nytimes.com/2022/10/03/business/cryptocurrency-regulation-stablecoin.html> [<http://perma.cc/6M7V-V7D4>].

⁷⁶ See *infra* Part II.C. for a more detailed discussion of stablecoins.

⁷⁷ See *supra* notes 16–19 and accompanying text.

⁷⁸ Dave Michaels, *SEC Faces Calls to Boost Crypto-Exchange Enforcement After FTX Collapse*, MINT (Dec. 8, 2022, 6:46 PM), <http://www.livemint.com/market/cryptocurrency/sec-faces-calls-to-boost-crypto-exchange-enforcement-after-ftx-collapse-11670503857285.html>

exchanges on which futures and derivatives contracts in commodities are traded,⁷⁹ but does not regulate the spot markets for those commodities. Thus, when there is a cryptoasset that is not a security, which currently includes Bitcoin and possibly Ether,⁸⁰ neither agency has regulatory authority, although the CFTC can step in after the fact to enforce its anti-fraud mandate.⁸¹

This gap in regulatory oversight has not gone unremarked. CFTC Chair Behnam has repeatedly appealed to Congress, seeking authority over crypto spot markets.⁸² In a February 8, 2022, letter to members of the Senate Committee on Agriculture, Nutrition, and Forestry, Behnam wrote that “[t]he cash market for trading digital assets is currently subject to an insufficient patchwork of regulations.”⁸³ In his opinion, “there are important principles missing from the current regulatory framework applicable to digital asset markets that we see in other federally regulated markets, particularly ones that primarily cater to retail investors.”⁸⁴

He repeated this request in July 2022, noting that “there are several unique elements of the digital asset commodity cash

[<http://perma.cc/942P-FXKM>] (from a Wall Street Journal article, noting that “[c]rypto exchanges say the SEC is wrong about which U.S. laws apply to them and have resisted the agency’s warnings”).

⁷⁹ See *supra* note 50 and accompanying text. The CFTC “has two levels of jurisdiction: (a) a broad non-exclusive enforcement jurisdiction over interstate transactions in ‘commodities,’ and (b) an exclusive regulatory authority over the U.S. commodity derivatives markets.” Peter Y. Malyshev & Michael Ena, *In Depth: Regulation and Enforcement of the Digital Assets Markets, Part One – Jurisdiction*, CADWALADER (July 7, 2022), <http://www.cadwalader.com/fin-news/index.php?nid=19&eid=157> [<http://perma.cc/HBA2-775D>].

⁸⁰ The CFTC and SEC chairmen, for example, disagree about whether Ether is a security, although both apparently regard Bitcoin as only a commodity. Scott Nover, *US Commodities Chief Thinks Most Cryptocurrencies are Securities*, QUARTZ (Oct. 24, 2022), <http://qz.com/us-commodities-chief-thinks-most-cryptocurrencies-are-s-1849697645> [<http://perma.cc/AHX8-B8YN>]. This is particularly significant because these are the two most heavily capitalized cryptoassets. As of March 31, 2023, Bitcoin’s market capitalization was just over \$550 billion, and Ether’s was close to \$220 billion. The third most heavily capitalized cryptoasset, Tether, had a total market cap of just over \$66 billion. See *Today’s Cryptocurrency Prices by Market Cap*, COINMARKETCAP, <http://coinmarketcap.com> [<http://perma.cc/56WA-JJHH>].

⁸¹ See *supra* note 50 and accompanying text.

⁸² Nikhilesh De, *CFTC Should Oversee Crypto Spot Markets, Chief Reiterates Before Congress*, COINDESK (Feb. 9, 2022, 10:55 AM), <http://www.coindesk.com/policy/2022/02/09/cftc-should-oversee-crypto-spot-markets-chief-reiterates-before-congress/> [<http://perma.cc/XY5E-6X3V>].

⁸³ Letter from Rostin Behnam, Chairman, CFTC, to Debbie Stabenow, Chairwoman, U.S. S. Comm. on Agric., John Boozman, Ranking Member, U.S. S. Comm. on Agric., David Scott, Chairman, H. Comm. on Agric., and Glenn Thompson, Ranking Member, H. Comm. on Agric. at 6 (Feb. 8, 2022), <http://www.agriculture.senate.gov/imo/media/doc/2022%2002%2008%20Ag%20committees%20digital%20asset%20response%20letter.pdf> [<http://perma.cc/BS2Z-VJCE>].

⁸⁴ *Id.*

market that distinguish it from other cash commodity markets, suggesting it would benefit greatly from CFTC oversight. The most notable difference between the digital asset market and other commodity markets is the level of retail participation.”⁸⁵ Even more recently, following the collapse of FTX referenced at the beginning of this Article,⁸⁶ Behnam repeated the request for broader authority over crypto spot market exchanges.⁸⁷

Nor is Behnam the only person commenting on this gap in regulatory coverage. On December 1, 2022, at a hearing on “*Why Congress Needs to Act: Lessons Learned from the FTX Collapse*,” multiple members of the Senate Agriculture, Nutrition & Forestry Committee “reinforced their support for . . . [a bill], which would grant the CFTC the authority to regulate digital commodities and spot digital asset markets.”⁸⁸

The benefits of adequate regulation for these marketplaces seem clear. As noted elsewhere, adequate regulation “has the potential to protect long-term investors, prevent fraudulent activity within the crypto ecosystem, and provide clear guidance to allow companies to innovate in the crypto economy”⁸⁹ The trick, of course, is to make sure that regulations are appropriately tailored.

B. Lack of Clarity in Defining when Crypto is a Security

A second issue with existing crypto regulations is that they do not provide clarity as to which requirements apply. As a result, businesses often operate under the assumption or based on the position that they are outside the existing framework. This is particularly problematic when it comes to ascertaining when the

⁸⁵ Rostin Behnam, *Keynote Address of Chairman Rostin Behnam at the Brookings Institution Webcast on the Future of Crypto Regulation*, CFTC (July 25, 2022), <http://www.cftc.gov/PressRoom/SpeechesTestimony/opabehnam24> [<http://perma.cc/C843-T7R8>].

⁸⁶ See *supra* notes 1–3 and accompanying text.

⁸⁷ Nikhilesh De, *CFTC Chairman Suggests ‘Pause’ to Overhaul Senate Bill Following FTX Debacle*, COINDESK (Dec. 1, 2022, 7:21 PM), <http://www.coindesk.com/policy/2022/12/01/cftc-chair-suggests-pause-to-overhaul-senate-bill-following-ftx-debacle/?outputType=amp> [<http://perma.cc/6RV3-ZFL8>] (suggesting that although current bills might need reworking, it is important “to move forward as soon as possible”).

⁸⁸ Andrew M. Ray et al., *Congressional Hearings on FTX Collapse May Lead to Crypto Regulations*, MORGAN LEWIS BLOG (Dec. 5, 2022), <http://www.morganlewis.com/blogs/finreg/2022/12/congressional-hearings-on-ftx-collapse-may-lead-to-crypto-regulations> [<http://perma.cc/MV4B-UMSP>].

⁸⁹ Alex Gailey, *Why Cryptocurrency Regulation Is Actually ‘A Good Thing’ for Investors, According to These Experts*, TIME (Apr. 17, 2022), <http://time.com/nextadvisor/investing/cryptocurrency/why-crypto-regulation-is-good-for-investors/> [<http://perma.cc/5VKY-T9C7>] (citing Aaron Klein, a senior fellow in economics at the Brookings Institution).

SEC's authority extends to crypto transactions. As noted above, the SEC has significant authority over the sale of securities and over institutions such as exchanges that facilitate such sales.⁹⁰ The question is which cryptoassets are securities.

As of March 2023, the SEC had issued no formal rules or regulations confirming its apparent position that the *Howey* test means most or many cryptoassets are securities. However, the Chairman of the SEC from May 2017 to December 2020, Jay Clayton, was widely quoted as stating that every initial coin offering ("ICO") he had seen involved the sale of securities.⁹¹ The only real deviations from this position were unofficial statements that some widely dispersed or decentralized assets such as Bitcoin and possibly Ether are not securities.⁹²

⁹⁰ See *supra* notes 16–19 and accompanying text.

⁹¹ Beginning in December 2017, SEC Chairman Jay Clayton began repeating the mantra that most, if not all, ICOs involved the sale of securities. Chairman Jay Clayton, *Statement on Cryptocurrencies and Initial Coin Offerings*, U.S. SEC. & EXCH. COMM'N (Dec. 11, 2017), <http://www.sec.gov/news/public-statement/statement-clayton-2017-12-11> [<http://perma.cc/TY9T-MKWX>] ("By and large, the structures of initial coin offerings that I have seen promoted involve the offer and sale of securities and directly implicate the securities registration requirements and other investor protection provisions of our federal securities laws.") In February 2018, in testimony before the Senate Committee on Banking, Housing, and Urban Affairs, he testified that "every ICO token the SEC has seen so far is considered a security . . ." See Joseph Young, *SEC Hints at Tighter Regulation for ICOs, Smart Policies for "True Cryptocurrencies"*, COINTELEGRAPH (Feb. 9, 2018), <http://cointelegraph.com/news/sec-hints-at-tighter-regulation-for-icos-smart-policies-for-true-cryptocurrencies> [<http://perma.cc/Z5KF-BXG9>]. While Chairman Clayton was always careful to explain that the SEC's approach required a consideration of the facts and circumstances of each transaction, his comments were widely accepted as reflecting at least a rebuttable presumption that all ICOs involved the sale of securities. See, e.g., Daniel C. Zinman, et al., *SEC Issues Warning to Lawyers on ICOs*, BLOOMBERG L. (Feb. 22, 2018, 1:31 PM), <http://news.bloomberglaw.com/tech-and-telecom-law/sec-issues-warning-to-lawyers-on-icos> [<http://perma.cc/FBB5-AWF9>]. This source examines a number of recent pronouncements and actions taken by the SEC and concludes that the Commission had "essentially adopted a rebuttable presumption that ICO tokens are securities that must comply with the registration requirements of the securities laws." *Id.*

⁹² In the summer of 2018, the SEC's Director of the Division of Corporate Finance, William Hinman, acknowledged that in his opinion not all cryptoassets fit the definition of investment contract, specifically pointing to Bitcoin and Ether as examples of tokens that should not be viewed as securities. See Dir. William Hinman, *Div. of Corp. Fin., Digital Asset Transactions: When Howey Met Gary (Plastic)*, U.S. SEC. & EXCH. COMM'N (June 14, 2018), <http://www.sec.gov/news/speech/speech-hinman-061418> [<http://perma.cc/H3YU-DX3K>]. In the case of those two assets, Hinman suggested that the underlying network was "sufficiently decentralized," so that "purchasers would no longer reasonably expect a person or group to carry out essential managerial or entrepreneurial efforts . . ." *Id.* In his April 2018 testimony before the House Appropriations Committee, Chairman Clayton appeared to acquiesce in the view that Bitcoin, at least, would not be a security. He explained that "there are different types of cryptoassets A pure medium of exchange, the one that's most often cited, is Bitcoin. As a replacement for currency, that has been determined by most people to not be a security." Neeraj Agrawal, *SEC Chairman Clayton: Bitcoin is Not a Security*, COINCENTER

Recognizing the need for additional clarity, in 2019 the SEC released a “Framework” to explain its approach in more detail.⁹³ This document was attributed to FinHub, a portal designed to specifically engage with companies using blockchain and other innovative financial technologies. The Framework took the relatively short *Howey* test and expanded it into more than three dozen different elements,⁹⁴ most of which focus on the question of whether purchasers have a reasonable expectation of profits derived from the efforts of others.⁹⁵

Not surprisingly, this approach did little to address the confusion over when to classify cryptoassets as securities.⁹⁶ Even one SEC Commissioner took issue with the Framework:

While *Howey* has four factors to consider, the framework lists 38 separate considerations, many of which include several sub-points. A seasoned securities lawyer *might* be able to infer which of these considerations will likely be controlling and might therefore be able to provide the appropriate weight to each. . . . [N]on-lawyers and lawyers not steeped in securities law and its attendant lore will not know what to make of the guidance. Pages worth of factors, many of which seemingly apply to all decentralized networks, might contribute to the feeling that navigating the securities laws in this area is perilous business.⁹⁷

Commissioner Peirce’s conclusion was that the document “could raise more questions and concerns than it answers.”⁹⁸

(Apr. 27, 2018), <http://www.coincenter.org/sec-chairman-clayton-bitcoin-is-not-a-security/> [<http://perma.cc/S8MF-7AKH>]. Note that neither of these are official statements of the SEC and instead explicitly warn that they reflect only the opinion of the individual speaker.

⁹³ *Framework for “Investment Contract” Analysis of Digital Assets*, U.S. SEC. & EXCH. COMM’N, <http://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets> [<http://perma.cc/B52V-M99K>] (modified Apr. 3, 2019) [hereinafter *Framework*]. The Framework was accompanied by an explanatory statement from two SEC attorneys. Bill Hinman & Valerie Szczepanik, *Statement on “Framework for ‘Investment Contract’ Analysis of Digital Assets,”* U.S. SEC. & EXCH. COMM’N (Apr. 3, 2019), <http://www.sec.gov/news/public-statement/statement-framework-investment-contract-analysis-digital-assets> [<http://perma.cc/YV6E-MX6D>].

⁹⁴ For a more involved discussion of the *Howey* test, its four elements, and the application of the test to cryptoassets, see Goforth, *supra* note 5.

⁹⁵ *Framework*, *supra* note 93.

⁹⁶ In fact, the Framework itself appeared to add to the uncertainties in the crypto space and, as one law firm contended, confused and conflated the appropriate analysis as to when cryptoassets are securities. *When it Comes to Analyzing Utility Tokens, the SEC Staff’s “Framework for ‘Investment Contract’ Analysis of Digital Assets” May Be the Emperor Without Clothes (or, Sometimes an Orange Is Just an Orange) (Part I)*, WINSTON & STRAWN LLP (Oct. 28, 2019), <http://www.winston.com/en/crypto-law-corner/when-it-comes-to-analyzing-utility-tokens-the-sec-staffs-framework-for-investment-contract-analysis-of-digital-assets-may-be-the-emperor-without-clothes-or-sometimes-an-orange-is-just-an-orange.html> [<http://perma.cc/BB42-9VJW>].

⁹⁷ Comm’r Hester M. Peirce, *How We Howey*, U.S. SEC. & EXCH. COMM’N (May 9, 2019), <http://www.sec.gov/news/speech/peirce-how-we-howey-050919> [<http://perma.cc/9YHW-XXXA>].

⁹⁸ *Id.*

Despite its complexity, the Framework did appear to confirm that not all cryptoassets will be securities. The conclusion of the document notes that it “identifies some of the factors market participants should consider in assessing whether a digital asset is offered or sold as an investment contract and, therefore, is a security.”⁹⁹ It also observes that other factors may be relevant and that under some circumstances crypto that starts as a security may cease being one.¹⁰⁰ The Framework unfortunately does not clearly articulate when that might occur.

The only other information from the SEC under Chairman Clayton consisted of a handful of no-action letters concluding that certain forms of crypto which are not convertible into fiat or have no possibility of appreciation would be outside the securities laws.¹⁰¹ These are widely regarded as having very limited applicability to the vast majority of cryptoassets.¹⁰²

When Chairman Clayton resigned at the end of 2020, he was replaced with Gary Gensler, who was sworn into office on April 17, 2021.¹⁰³ While crypto enthusiasts were briefly hopeful that Chairman Gensler would be more supportive of crypto businesses than his predecessor,¹⁰⁴ this assessment appears to have missed the target. On August 3, 2021, Gensler explicitly announced his agreement with Clayton, explaining that “he believes the vast majority of crypto tokens and initial coin offerings (ICOs) violate

⁹⁹ *Framework*, *supra* note 93.

¹⁰⁰ *See id.*

¹⁰¹ *See, e.g.*, Jonathan A. Ingram, *Response of the Division of Corporation Finance*, U.S. SEC. & EXCH. COMM’N (Apr. 3, 2019), <http://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1.htm> [<http://perma.cc/3EHX-Y4NE>] (the tokens in question had a fixed price and were non-transferable, being redeemable only at a discount); Jonathan A. Ingram, *Pocketful of Quarters, Inc. Response of the Division of Corporation Finance*, U.S. SEC. & EXCH. COMM’N (July 25, 2019), <http://www.sec.gov/corpfin/pocketful-quarters-inc-072519-2a1> [<http://perma.cc/9YNB-YMYE>] (tokens would be locked up in on-line gaming platforms).

¹⁰² *See* Client Alert, *The SEC’s Limited Guidance on Crypto Tokens in No-Action Letters*, KRAMER LEVIN (Nov. 14, 2022), <http://www.kramerlevin.com/en/perspectives-search/the-secs-limited-guidance-on-crypto-tokens-in-no-action-letters.html> [<http://perma.cc/NPE8-38LS>] (noting that “[t]he SEC has not addressed factors that would be common to many other frequently used types of crypto tokens”).

¹⁰³ *Biography Chair Gary Gensler*, U.S. SEC. & EXCH. COMM’N <http://www.sec.gov/about/commissioners/gary-gensler> [<http://perma.cc/P4B2-BAHF>].

¹⁰⁴ *See, e.g.*, Shanny Basar, *Crypto Industry Eyes Gensler at SEC*, TRADERS MAG. (Jan. 21, 2021), <http://www.tradersmagazine.com/departments/brokerage/crypto-industry-eyes-gary-gensler-at-sec/> [<http://perma.cc/7R2X-E397>] (including a tweet from “Machina Trader” commenting hopefully that the appointment of “crypto-savvy Gary Gensler” would be a “move that could be advantageous for the industry . . .”).

U.S. securities laws.”¹⁰⁵ Under his leadership, the SEC has continued to assert the view that the federal securities laws apply broadly to cryptoassets.¹⁰⁶

Some of the SEC’s actions have been quite controversial. For example, in December 2020, the SEC initiated a lawsuit alleging that Ripple’s XRP token was a security.¹⁰⁷ That lawsuit resulted in a class action suit against the SEC joined by tens of thousands of XRP purchasers objecting to this classification.¹⁰⁸ The SEC also made waves in July 2022 when it brought insider trading charges against a former Coinbase manager and two tippees, claiming that trades had been made just before Coinbase listed twenty-five cryptoassets and that “at least” nine of those assets were securities.¹⁰⁹ It did not explain why it singled out those particular assets as securities and did not include the other assets or what the agency meant when it claimed that “at least” those nine were securities.¹¹⁰ Interestingly, it also did not make (and as of the end of 2022, had not made) any formal assertion that Coinbase had been illegally operating as an unregistered securities exchange, despite trading in the assets identified in the insider trading case.¹¹¹

¹⁰⁵ See Nikhilesh De, *SEC Chairman Gensler Agrees with Predecessor: ‘Every ICO Is a Security,’* COINDESK, <http://www.coindesk.com/markets/2021/08/03/sec-chairman-gensler-agrees-with-predecessor-every-ico-is-a-security/> [<http://perma.cc/S HB5-KH75>] (last updated Sept. 14, 2021). “In a speech at the Aspen Security Forum on Tuesday, Gensler said he agreed with Jay Clayton, his predecessor at the SEC, who once famously said that in his view, ‘every ICO I’ve seen is a security.’” *See id.*

¹⁰⁶ For a list of various enforcement actions brought by the SEC involving cryptoassets, see *Crypto Assets and Cyber Enforcement Actions*, U.S. SEC. & EXCH. COMM’N, <http://www.sec.gov/spotlight/cybersecurity-enforcement-actions> [<http://perma.cc/6QKE-QBSE>] (last visited Jan. 29, 2023).

¹⁰⁷ The SEC initiated enforcement proceedings against Ripple Labs on December 22, 2020, alleging that Ripple’s XRP was a security. *See* Complaint at 2, SEC v. Ripple Labs, Inc. et al., No. 1:20-cv-10832-AT-SN (S.D.N.Y. filed Dec. 22, 2020) (No. 20 Civ. 10832). Note that the Complaint also names Ripple’s original and current CEOs (Christian A. Larson and Bradley Garlinghouse, respectively) as defendants. They are named both for their own sales of XRP and for aiding and abetting in Ripple’s alleged violations. *See id.* at 1.

¹⁰⁸ *See* Qadir AK, *Ripple vs SEC: This Move by John Deaton Could Support XRP Holders*, COINPEDIA (Oct. 8, 2022), <http://coinpedia.org/ripple/ripple-vs-sec-this-move-by-john-deaton-could-support-xrp-holders/> [<http://perma.cc/226L-E9RW>] (reporting that more than 72,000 XRP investors had joined the lawsuit).

¹⁰⁹ *See SEC Charges Former Coinbase Manager, Two Others in Crypto Asset Insider Trading Action*, Press Release No. 2022-127, U.S. SEC & EXCH. COMM’N (July 21, 2020), <http://www.sec.gov/news/press-release/2022-127> [<http://perma.cc/5Q5E-LN3U>].

¹¹⁰ *See* Alexandra C. Scheibe et al., *Inside Out: Is a Recent Crypto Asset Insider Trading Case a Prelude to More SEC Enforcement Actions?*, MCDERMOTT WILL & EMERY (July 21, 2022), <http://www.mwe.com/insights/inside-out-is-a-recent-crypto-asset-insider-trading-case-a-prelude-to-more-sec-enforcement-actions/> [<http://perma.cc/8DQV-SKUZ>].

¹¹¹ On March 22, 2023, Coinbase revealed that the SEC had sent it notice regarding “an unspecified portion” of the platform’s digital assets. *See* Grewal, *supra* note 36. This

To some extent, the SEC's aggressive posture has paid off. The SEC has won victories in several cases to date, including judicial determinations that Kik's sale of its KIN tokens and Telegram's planned distribution of GRAMs involved securities.¹¹² On November 7, 2022, the Commission notched another win, this time in the New Hampshire District Court in *SEC v. LBRY*,¹¹³ when the court granted the SEC's motion for summary judgment on the grounds that the LBRY token was a security.¹¹⁴ Even this, however, has not resolved the ongoing concern that the SEC seems to be regulating by enforcement rather than through consultative rulemaking.¹¹⁵

The lack of clarity in knowing which cryptoassets will be treated as securities, combined with an aggressive regulatory stance from the SEC, has led a number of crypto entrepreneurs to structure their dealings so as to exclude U.S. based participants. For example, it was reported that in the first quarter of 2019, eighty-six ICOs were specifically structured to exclude U.S. based investors, making the United States the single country most likely to be excluded from crypto offerings, followed by North Korea, Iran, and Syria.¹¹⁶ Crypto lending programs are also often structured to

suggests that the SEC may be proceeding in the direction of an enforcement action, although as of the end of March 2023, the SEC had refused to indicate which cryptoassets it believed to be securities. *Id.*

¹¹² See *Telegram to Return \$1.2 Billion to Investors and Pay \$18.5 Million Penalty to Settle SEC Charges*, Press Release No. 2020-146, U.S. SEC. & EXCH. COMM'N (June 26, 2020), <http://www.sec.gov/news/press-release/2020-146> [<http://perma.cc/2LGQ-6MHU>]; *SEC Obtains Final Judgment Against Kik Interactive for Unregistered Offering*, Press Release No. 2020-262, U.S. SEC. & EXCH. COMM'N (Oct. 21, 2020), <http://www.sec.gov/news/press-release/2020-262> [<http://perma.cc/TB28-R9LJ>].

¹¹³ See *SEC Granted Summary Judgment Against New Hampshire Issuer of Crypto Asset Securities for Registration Violations*, U.S. SEC. & EXCH. COMM'N (Nov. 7, 2022), <http://www.sec.gov/litigation/litreleases/2022/lr25573.htm> [<http://perma.cc/M2KL-TZYU>].

¹¹⁴ See Jody Godoy, *U.S. Securities Regulators Win Case Against Crypto Company LBRY*, REUTERS (Nov. 7, 2022), <http://www.reuters.com/legal/transactional/us-securities-regulators-win-case-against-crypto-company-lbry-2022-11-07/> [<http://perma.cc/ACW5-TSRA>].

¹¹⁵ SEC officials acknowledge the issue. Chairman Gensler has noted the frequent complaint that the Commission regulates by enforcement. See Chair Gary Gensler, *Prepared Remarks at the Securities Enforcement Forum*, U.S. SEC. & EXCH. COMM'N (Nov. 4, 2021), <http://www.sec.gov/news/speech/gensler-securities-enforcement-forum-20211104> [<http://perma.cc/C9SC-JEMB>]. His response has been that "[s]ome market participants may call this 'regulation by enforcement.' I just call it 'enforcement.'" See *id.*; see also Gurbir S. Grewal, *2021 SEC Regulation Outside the United States – Scott Friestad Memorial Keynote Address*, U.S. SEC. & EXCH. COMM'N (Nov. 8, 2021), <http://www.sec.gov/news/speech/grewal-regulation-outside-united-states-110821> [<http://perma.cc/687M-572J>] ("In my three months in this role, I have heard more than three times the refrain that we are 'regulating by enforcement.'").

¹¹⁶ See Lukas Hofer, *Why Token Issuers Exclude U.S. Investors*, ICO.LI (Apr. 26, 2019), <http://ico.li/us-investors/> [<http://perma.cc/V8KQ-YNFG>].

exclude U.S. participants.¹¹⁷ Major crypto exchanges exclude U.S. customers, to the confusion and disappointment of many.¹¹⁸ In fact, the CEO of Coinbase has estimated that nearly ninety-five percent of crypto trading activity has been driven to offshore exchanges as a result of the SEC's failure to provide clear regulations.¹¹⁹

The lack of regulatory certainty has been described as a “massive barrier” to responsible innovation in the crypto ecosystem.¹²⁰ Dan Doney, CEO of blockchain infrastructure company Securrency Inc., has opined that the United States has “a responsibility to provide that regulatory certainty if we want to be an innovative leader in financial service technology. If we choose not to lead in innovation in financial technologies, we risk losing that benefit that we’ve had of being an innovative society.”¹²¹

C. Stablecoin Regulation

A third area where events have made it clear that additional clarity is needed is with regard to stablecoins and how they are regulated. Stablecoins are a form of cryptoasset designed to have stable pricing “pegged to an external asset class such as a single fiat currency (with the U.S. dollar being the most popular),” a basket of fiat currencies, “or a tangible commodity (such as gold).”¹²² A stablecoin may be collateralized off-chain, meaning that the issuer or a related entity holds sufficient amounts of the relevant fiat or commodity to ensure price stability, or on-chain,

¹¹⁷ See Chris Grundy, *Crypto Lending in the United States*, SELFKEYBLOG (June 12, 2020), <http://selfkey.org/crypto-lending-in-the-united-states/> [<http://perma.cc/W4H4-GWT9>].

¹¹⁸ “The U.S. remains a challenging environment for centralized cryptocurrency exchanges, with major players significantly scaling back their operations and others heading for the door.” See Kai Sedgewick, *As Crypto Exchanges Exit the US, Which Trading Platforms Will Enter the Breach?*, BITCOIN.COM (Oct. 24, 2019), <http://news.bitcoin.com/as-crypto-exchanges-exit-the-us-which-trading-platforms-will-enter-the-breach/> [<http://perma.cc/7PH9-76PP>]; Benjamin Pirus, *Crypto Exchanges Barring US Citizens is Heartbreaking and Frustrating*, FORBES (Sept. 30, 2020), <http://www.forbes.com/sites/benjaminpirus/2020/09/30/crypto-exchanges-barring-us-citizens-is-heartbreaking-and-frustrating/?sh=18e3f7527c97> [<http://perma.cc/27ZF-BRJU>] (“Part of the difficulty lies in the uncertainty. I am not a legal professional, so I do not know exactly why I am banned from using the top exchanges in the industry. Other average folks likely feel the same.”).

¹¹⁹ Prashant Jha, *Regulators Face Public Ire After FTX Collapse, Experts Call for Coordination*, COINTELEGRAPH (Dec. 4, 2022), <http://cointelegraph.com/news/regulators-face-public-ire-after-ftx-collapse-experts-call-for-coordination> [<http://perma.cc/HR6U-SJ65>].

¹²⁰ Betsy Vereckey, *Who Will Regulate Crypto and FinTech in the US?*, MIT MGMT. SLOAN SCHOOL (Nov. 8, 2022), <http://mitsloan.mit.edu/ideas-made-to-matter/who-will-regulate-crypto-and-fintech-us> [<http://perma.cc/Q5CP-ENF2>].

¹²¹ *Id.*

¹²² Carol R. Goforth, *What Does the Decline in the U.S. Dollar’s Global Role Mean for Cryptocurrencies?*, 66 ST. LOUIS U. L.J. 249, 258 (2022).

by holding other cryptoassets.¹²³ It is also possible for a stablecoin to be uncollateralized, depending instead on algorithms and smart contracts governing the buying and selling of the asset to keep a stable price.¹²⁴ Early stablecoins, such as NuBits, experimented with this option,¹²⁵ but the most recently famous (or infamous) example of an algorithmic stablecoin was UST (also referred to as TerraUSD).¹²⁶

Stablecoins present multiple problems for potential regulators. Initially, there was a significant concern about fraud or misrepresentation in connection with how the value of the asset is protected. The most significant illustration of this is provided by the first successful stablecoin, USDT (colloquially known as Tether).¹²⁷ The original concept was that each USDT would be

¹²³ MakerDAO, *Stablecoins: Collateralization Types*, MEDIUM (Dec. 12, 2018), <http://medium.com/@MakerDAO/stablecoins-collateralization-types-2a860624dcd3> [<http://perma.cc/2FH5-52MH>].

¹²⁴ Werner Vermaak, *Stablecoins: The Complete Guide, Part I – Past & Present (2014-2019)*, COOLWALLET (Sept. 22, 2019), [http://www.coolwallet.io/the-complete-guide-to-stablecoins-part-i-2014-2019/#:~:text=BitUSD%20\(July%202014\),and%20Charles%20Hoskinson%20\(Cardano\)](http://www.coolwallet.io/the-complete-guide-to-stablecoins-part-i-2014-2019/#:~:text=BitUSD%20(July%202014),and%20Charles%20Hoskinson%20(Cardano)) [<http://perma.cc/3XA9-8KJG>] (the archived version needs to be viewed in screenshot mode).

¹²⁵ *Id.*

¹²⁶ In early May 2022, an algorithmic stablecoin, UST or TerraUSD, imploded spectacularly, resulting in a spate of headlines and new questions about the need to regulate this asset class. Oliver Povey, *Cryptocurrency Prices: What is the Correlation Between UST and Luna That Explains Its Big Drop?*, AS (May 16, 2022, 7:51 PM), http://en.as.com/latest_news/cryptocurrency-prices-what-is-the-correlation-between-ust-and-luna-that-explains-its-big-drop-n/ [<http://perma.cc/63BE-WC7K>]. “Before May 10, TerraUSD was in the top 10 most valuable cryptocurrencies with an estimated market value of more than \$40 billion. However, a huge market crash sent the value tumbling (understatement) to \$500 million, a drop of nearly 99 percent.” *Id.* It appears that the “network as it once was can’t be salvaged.” Daniel Kuhn, *UST Won’t Be the End of Algorithmic Stablecoins*, COINDESK (May 16, 2022, 11:14 AM), <http://www.coindesk.com/layer2/2022/05/16/ust-wont-be-the-end-of-algorithmic-stablecoins/> [<http://perma.cc/UFK5-P6LR>]; see also Matt Phillips, *Broken Stablecoin Could Intensify Crypto Regulation Push*, AXIOS (May 12, 2022), <http://www.axios.com/2022/05/12/broken-stablecoin-could-intensify-crypto-regulation-push> [<http://perma.cc/AC5M-43JW>].

¹²⁷ David Hamilton, *What Is Tether? Everything You Need to Know*, SECURITIES.IO, <http://www.securities.io/what-is-tether-a-look-at-the-worlds-most-popular-stablecoin/> [<http://perma.cc/E8YC-D6RP>] (Mar. 20, 2022). One point of confusion or ambiguity frequently encountered in the crypto space is the inconsistent use of terminology. For example, “Bitcoin” refers both to the network and the underlying cryptoasset. See *Frequently Asked Questions*, BITCOIN, <http://bitcoin.org/en/faq> [<http://perma.cc/Z22G-LBYP>] (last visited Jan. 11, 2023) (describing Bitcoin as both “a consensus network,” and “pretty much like cash for the internet,” referring to the asset). That may not be terribly confusing when talking about a cryptoasset like Bitcoin that is the only cryptoasset associated with the underlying computer network. However, Ethereum (the network) supports a huge variety of cryptoassets, including Ether (its native token). The confusing part is that “Ethereum” is very widely used to refer to Ether as well as the network.

backed by one U.S. dollar, although Tether Limited (the issuer) has since maintained that it is not contractually obligated to guarantee that USDT can be redeemed or exchanged for dollars or other fiat.¹²⁸ With rumors circulating that Tether did not have adequate reserves and in the absence of reliable audit information, USDT dropped below one dollar in October 2018.¹²⁹

Subsequent investigation revealed that Tether had made multiple false claims about how USDT was backed¹³⁰ and had also falsely denied the company's connection to BitFinex.¹³¹ These actions led not to an enforcement action by the SEC, but to a

Toshendra Kumar Sharma, *Is Ether the Same as Ethereum?*, BLOCKCHAIN COUNCIL (Oct. 4, 2019), <http://www.blockchain-council.org/blockchain/is-ether-the-same-as-ethereum/> [<http://perma.cc/42W6-DX9P>] (noting that “Ether and Ethereum are often used in the same context”). Similarly, “Tether” is both the name of the company, and the word used to describe the token (identified in this Article as USDT, its trading symbol). *See, e.g.*, Ryan Browne, *Why Tether, the World’s Third-Biggest Cryptocurrency, Has Got Economists Worried*, CNBC (July 7, 2021, 11:39 AM), <http://www.cnbc.com/2021/07/07/tether-cryptocurrency-usdt-what-you-need-to-know.html> [<http://perma.cc/TPQ7-GYH3>] (talking about Tether as both the cryptoasset itself and the underlying enterprise that holds the assets backing the stablecoin). This Article generally uses USDT to refer to the cryptoasset and Tether to refer to the underlying network and associated entities. Terra was the company and network, but it is also the label used to describe UST (one of two cryptoassets native to the network, the other being Luna). Q.ai, *What Really Happened to LUNA Crypto?*, FORBES (Sept. 20, 2022, 11:57 AM), <http://www.forbes.com/sites/qai/2022/09/20/what-really-happened-to-luna-crypto/?sh=4ddf9e444ff1> [<http://perma.cc/G6U4-F9EY>]; *see also* *What Is Terra in Crypto? Definition, How It Works, Vs. Luna*, INVESTOPEIDIA (Sept. 26, 2022), <http://www.investopedia.com/terra-5209502#:~:text=Terra%20is%20an%20open%2Dsource%20blockchain%20protocol%20that%20underpins%20algorithmic,the%20other%20one%20being%20Luna> [<http://perma.cc/4QYU-EX7M>] (reporting that “Terra is an open-source blockchain protocol” and that it “is one of the two main cryptocurrency tokens under this protocol”). This Article uses UST to refer to the cryptoasset and “Terra” to talk about the companies involved in creating the UST-Luna ecosystem.

¹²⁸ David Dinkins, *The Strange Story of Tether, the Digital Money That Claims It Isn’t Money*, COINTELEGRAPH (Aug. 17, 2017), <http://cointelegraph.com/news/the-strange-story-of-tether-the-digital-money-that-claims-it-isnt-money> [<http://perma.cc/EVP7-Q5VH>].

¹²⁹ Gareth Jenkinson, *Untethered: The History of Stablecoin Tether and How It Has Lost Its \$1 Peg*, COINTELEGRAPH (Oct. 17, 2018), <http://cointelegraph.com/news/untethered-the-history-of-stablecoin-tether-and-how-it-has-lost-its-1-peg> [<http://perma.cc/2PMP-8L4S>]. Historical pricing information about USDT can be obtained on CoinMarketCap.com. *Historical Data for Tether*, COINMARKETCAP, <http://coinmarketcap.com/currencies/tether/historical-data/> [<http://perma.cc/8PSU-S29X>] (last visited Mar. 2, 2023). While USDT did drop to \$.9771 on October 17, 2018, it was again trading at \$1.00 in early December of that year. *Id.*

¹³⁰ Paul Vigna, *Bitfinex Used Tether Reserves to Mask Missing \$850 Million, Probe Says*, WALL ST. J. (Apr. 25, 2019, 11:21 PM), <http://www.wsj.com/articles/bitfinex-used-tether-reserves-to-mask-missing-850-million-probe-finds-11556227031> [<http://perma.cc/5JSC-SGBK>]. As described in this story, the New York Attorney General leveled these accusations as part of its investigation against Bitfinex and its parent, iFinex. *Id.*

¹³¹ *See* Jordan Atkins, *Crypto Crime Cartel: The End Is Nigh for Tether*, COINGEEK (Jan. 15, 2021), <http://coingeek.com/crypto-crime-cartel-the-end-is-nigh-for-tether/> [<http://perma.cc/YGP7-XRN7>].

lawsuit by the New York State Attorney General that was finally settled in February 2021.¹³² On May 13, 2021, Tether released the asset breakdown for its reserves, indicating that cash accounted for only 2.9% of the reserves, while the company relied on commercial paper and fiduciary deposits of unclear liquidity and security for most of its backing.¹³³

While there have been indications that the SEC might be investigating Tether,¹³⁴ in the absence of any actual action, in October 2021, the CFTC announced an order that both initiated and settled “charges against Tether Holdings Limited, Tether Limited, Tether Operations Limited, and Tether International Limited (d/b/a Tether)” for lying about USDT.¹³⁵ The CFTC’s primary concern in this action was that Tether had engaged in a pattern of deceit about the way in which the stablecoin was supposed to be backed.¹³⁶

¹³² See Attorney General James Ends Virtual Currency Trading Platform Bitfinex’s Illegal Activities in New York, NY ATTY GEN. (Feb. 23, 2021), <http://ag.ny.gov/press-release/2021/attorney-general-james-ends-virtual-currency-trading-platform-bitfinex-illegal?ref> [<http://perma.cc/S4J7-F6DX>]; see also Duncan Riley, *iFinex Agrees to Pay \$18.5M to Settle New York Tether Lawsuit*, SILICONANGLE (Feb. 23, 2021, 11:45 PM), <http://siliconangle.com/2021/02/23/ifinex-agrees-pay-18-5m-settle-new-york-tether-lawsuit/> [<http://perma.cc/48D3-3RUC>].

¹³³ ValExplorer, *Should We Worry About Tether?* MEDIUM (May 19, 2021), <http://medium.com/coinmonks/should-we-worry-about-tether-1fc1727ebe4c> [<http://perma.cc/Q4DG-MXKM>].

¹³⁴ See Nikhilesh De, *SEC Hints at Tether Probe in Records Request Denial*, COINDESK (Sept. 24, 2021, 11:42 AM), <http://www.coindesk.com/policy/2021/09/24/sec-hints-at-tether-probe-in-records-request-denial/> [<http://perma.cc/54DW-H3B5>]. The SEC declined to release records about Tether in response to an FOIA request from Jacob Silverman, a staff writer at *The New Republic*, on the grounds that they were collected for enforcement purposes. See *id.*; FOIA Request Response from Adrienne M. Santos, FOIA Branch Chief, to Jacob Silverman, The New Republic Staff Writer (Sept. 22, 2021), <http://www.muckrock.com/foi/united-states-of-america-10/tether-stablecoin-company-securities-and-exchange-commission-118568/#file-972087> [<http://perma.cc/K8JM-QHE4>].

¹³⁵ *CFTC Orders Tether and Bitfinex to Pay Fines Totaling \$42.5 Million*, Press Release No. 8450-21, COMMODITY FUTURES TRADING COMM’N (Oct. 15, 2021), <http://www.cftc.gov/PressRoom/PressReleases/8450-21> [<http://perma.cc/YL9E-BC2H>]. At the same time, Bitfinex was ordered to pay \$1.5 million for illegal transactions while it operated the Bitfinex crypto exchange. See *id.*

¹³⁶ The order included the following findings:

Tether misrepresented to customers and the market that Tether maintained sufficient U.S. dollar reserves to back every USDT in circulation with the “equivalent amount of corresponding fiat currency” held by Tether and “safely deposited” in Tether’s bank accounts. In fact Tether reserves were not “fully-backed” the majority of the time. The order further finds that Tether failed to disclose that it included unsecured receivables and non-fiat assets in its reserves, and that Tether falsely represented that it would undergo routine, professional audits

Id.

Even following these legal actions, USDT continues to be very actively traded. According to CoinMarketCap, the circulating supply of USDT as of March 30, 2023, exceeded 79.5 billion tokens.¹³⁷ The same source listed a 24-hour trading volume on that day of nearly 32 billion USDT.¹³⁸

In addition to problems with outright fraud in the stablecoin space, the recent collapse of UST provides evidence of an additional issue.¹³⁹ UST was designed as an algorithmic stablecoin pegged to the U.S. dollar, but its issuer, Terra, never intended to invest in U.S. dollars or U.S. dollar-denominated assets.¹⁴⁰ Instead, Terra matched UST to another cryptoasset used in its ecosystem: Luna.¹⁴¹ At its highest value, a single Luna was listed at approximately \$116—a 135% increase from the trading price a mere two months earlier.¹⁴² When the value of the crypto markets plunged, the value of Luna also dropped, threatening the pegged value of UST, but it might have been the sudden withdrawal of over \$2 billion in UST from the Anchor platform on May 7, 2022, that triggered the system's ultimate demise.¹⁴³ These events led to an escalating pattern of withdrawals as the value of UST continued to drop,¹⁴⁴ which eventually led to a complete collapse of the system.¹⁴⁵

¹³⁷ See *Historical Data for Tether*, COINMARKETCAP, <http://coinmarketcap.com/currencies/tether/historical-data/> [<http://perma.cc/Z3CX-SUQE>] (last visited Mar. 30, 2023).

¹³⁸ *Id.*

¹³⁹ This is a particular issue because both the CFTC and SEC only generally concern themselves with issues such as adequate disclosures or actual fraud, leading some authorities to suggest that stablecoins have, to date, escaped systematic regulation. See Timothy G. Massad, *Regulating Stablecoins Isn't Just About Avoiding Systemic Risk*, BROOKINGS (Oct. 5, 2021) [hereinafter Massad, *Stablecoins*], <http://www.brookings.edu/research/regulating-stablecoins-isnt-just-about-avoiding-systemic-risk/> [<http://perma.cc/ZF44-RJEZ>] (“Stablecoins are currently not regulated in any meaningful way.”).

¹⁴⁰ See Q.ai, *supra* note 127. Instead of being backed by U.S. dollars or similarly liquid investments readily convertible into U.S. dollars, UST was backed by another token on the Terra network: Luna. See *id.*

¹⁴¹ See *id.*

¹⁴² See *id.* One reason for this rapid rise in value was the ability for owners to stake UST on the Anchor crypto lending program for an annual yield of 20%. *Id.*

¹⁴³ See Vremaroiu Alin, *What Are Terra and UST and Which Was the Cause for Terra Crash?*, MEDIUM (May 15, 2022), <http://medium.com/coinmonks/what-are-terra-and-ust-and-which-was-the-cause-of-terra-crash-e2cd46643922> [<http://perma.cc/K9DV-D9D5>].

¹⁴⁴ See Krisztian Sandor, *Investors Flee Terra's Anchor as UST Stablecoin Repeatedly Loses \$1 Peg*, COINDESK (May 9, 2022, 3:12 PM), <http://www.coindesk.com/markets/2022/05/09/investors-flee-terras-anchor-as-ust-stablecoin-repeatedly-loses-1-peg/> [<http://perma.cc/Q7DD-UBSH>].

¹⁴⁵ See *The Trades That Triggered TerraUSD's Collapse*, CHAINALYSIS (June 9, 2022), <http://blog.chainalysis.com/reports/how-terrausd-collapsed/> [<http://perma.cc/4F5W-P2T6>].

One source has estimated that the collapse of UST (and the associated Luna token) led to an economic loss of nearly half a trillion in U.S. dollars across the crypto markets.¹⁴⁶ The interconnectedness in the crypto ecosystem contributed to this impact. Reliance on UST and Luna eventually contributed to a host of bankruptcies in crypto companies, including those of crypto lender Celsius, hedge fund Three Arrows Capital, trading and lending platform BlockFi, and crypto brokerage firm Voyager Digital.¹⁴⁷

There appears to be general agreement that stablecoins need a clearer regulatory framework,¹⁴⁸ ideally one that encompasses “prudential regulation standards, but also operational risk measures, consumer protection standards, and standards to achieve interoperability.”¹⁴⁹ On November 1, 2021, the President’s Working Group on Financial Markets and other federal regulators issued a report on stablecoins.¹⁵⁰ This report concludes that there are gaps in existing regulations applicable to stablecoins suggesting the need for Congressional action,¹⁵¹ specifically with regard to prudential considerations.¹⁵²

¹⁴⁶ *What Happened to Terra?*, CORP. FIN. INST., <http://corporatefinanceinstitute.com/resources/cryptocurrency/what-happened-to-terra/> [<http://perma.cc/M7GC-F8CD>] (last updated Feb. 1, 2023).

¹⁴⁷ See George Glover, *The FTX Implosion Wasn’t Crypto’s Darkest Hour of the Year – These 2 Crises Were Even More Disastrous for Digital Assets*, MARKETS INSIDER (Dec. 17, 2022), <http://markets.businessinsider.com/news/currencies/ftx-bankruptcy-collapse-crypto-crash-3ac-celsius-terra-luna-chainalysis-2022-12> [<http://perma.cc/NQ3S-8TX2>]; see also Allyson Versprille et al., *US Investigating Bankrupt Crypto Hedge Fund Three Arrows Capital*, BLOOMBERG TAX (Oct. 17, 2022), <http://news.bloombergtax.com/crypto/us-investigating-bankrupt-crypto-hedge-fund-three-arrows-capital> [<http://perma.cc/TK6Z-CCNE>]. For a discussion of the link between Terra’s collapse and Three Arrows Capital, see Hamza Shaban, *Crypto Broker Voyager Digital Files for Bankruptcy as Industry Falter*, WASH. POST (July 6, 2022), <http://www.washingtonpost.com/business/2022/07/06/voyager-bankruptcy-three-arrows/> [<http://perma.cc/S8P8-LFH3>].

¹⁴⁸ USDT has become so important to the crypto ecosystem that a number of observers have expressed concern that it poses a possible systemic risk to the entire crypto market. See Elizabeth Lopatto, *The Tether Controversy Explained*, THE VERGE (Aug. 16, 2021), <http://www.theverge.com/22620464/tether-backing-cryptocurrency-stablecoin> [<http://perma.cc/V5T3-3TKT>].

¹⁴⁹ Massad, *Stablecoins*, *supra* note 139.

¹⁵⁰ PRESIDENT’S WORKING GRP. OF FIN. MKT., THE FED. DEPOSIT INS. CORPS., & THE OFFICE OF THE COMPTROLLER OF THE CURRENCY, REPORT ON STABLECOINS (2021), http://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf [<http://perma.cc/8WG3-PA5T>] [hereinafter STABLECOIN REPORT].

¹⁵¹ “Because responsibilities within many of these arrangements are widely distributed, and currently fall within the jurisdiction of different regulatory agencies, or outside of the regulatory perimeter altogether, there is a risk of incomplete or fragmented oversight.” *Id.* at 15.

¹⁵² See *id.* at 16–18.

III. POTENTIAL LEGISLATIVE FIXES

There is no clear consensus on whether the SEC or the CFTC is in a better position to oversee cryptoassets and transactions, or whether other agencies might need to be involved. Certainly, both the SEC and CFTC would like to take a leadership position in the space.¹⁵³ This disagreement is one of the barriers to new legislation and updated regulations.¹⁵⁴ In addition, there are significant differences of opinion over how stringent crypto regulation should be. Some officials seem to be opposed to the new technology,¹⁵⁵ while others are much more optimistic about its potential.¹⁵⁶

Because of that, it may not be surprising that there have been a number of different approaches urged by legislators to improve crypto regulation. More than fifty bills and resolutions relating to cryptoassets were introduced in 2021 and 2022.¹⁵⁷ The

¹⁵³ “The complex nature of cryptos has led to different interpretations of how cryptocurrency should be understood or regulated, leading to varying proposals from the [SEC] and [CFTC], among others.” *The State of Crypto: Making Sense of US Cryptocurrency Regulations*, THOMSON REUTERS (July 15, 2021), <http://legal.thomsonreuters.com/en/insights/articles/how-will-emerging-us-regulations-impact-cryptocurrencies> [<http://perma.cc/M28F-48FU>].

¹⁵⁴ “As players in the financial services and crypto industries seek more regulatory clarity from the SEC, CFTC, Treasury, and Federal Reserve, friction among regulators is a key obstacle to a quick rollout of new regulations in the U.S.” *Id.*

¹⁵⁵ “Calls to bring crypto ‘within the regulatory perimeter’ should be careful to tame, not accommodate, the new technology, the United States’ acting comptroller of the currency Michael Hsu has warned his fellow regulators.” Emma Siponmaa, *Skeuomorphism and the “Gold Rush Vibe”: OCC’s Hsu Expands on Crypto Caution Call*, GLOBAL BANKING REGUL. REV. (Oct. 18, 2022), <http://globalbankingregulationreview.com/article/skeuomorphism-and-the-gold-rush-occs-hsu-expands-crypto-caution-call> [<http://perma.cc/7GBG-7A69>]. Senator Elizabeth Warren has also been noted for her robust criticisms of the crypto industry. See Fortis, *supra* note 9 (noting that “Warren has been a major critic of the crypto industry over the last year”).

¹⁵⁶ Consider this excerpt from an opinion piece published in the Wall Street Journal:

No matter what regulators do, they shouldn’t stifle the innovation that is at the heart of this market. Blockchain is the first technology that enables two parties to transact without a centralized intermediary such as an exchange, broker or bank. The implications are profound. Blockchain technologies have significant potential to increase transparency, reduce risk in capital markets and democratize finance. The settlement and counterparty risk concerns that emerged in the 2008 financial crisis might not have been an issue if blockchain had been widely used.

Arthur Levitt & Ram Ahluwalia, *A New Framework for Crypto Regulation*, WALL ST. J. (Oct. 20, 2022), <http://www.wsj.com/articles/framework-crypto-cryptocurrency-sec-investors-decentralized-regulators-banks-stablecoins-rules-blockchain-financial-crisis-11666294238> [<http://perma.cc/9WTM-2524>].

¹⁵⁷ Jason Brett, *Congress Has Introduced 50 Digital Asset Bills Impacting Regulation, Blockchain, and CBDC Policy*, FORBES (May 19, 2022), <http://www.forbes.com/sites/jasonbrett/2022/05/19/congress-has-introduced-50-digital-asset-bills-impacting-regulation-blockchain-and-cbdc-policy/?sh=91482694e3f0>

bills covered a wide range of topics including central bank digital currencies (“CBDCs”), national security concerns, and how to support blockchain technology in the United States.¹⁵⁸ Other proposals advanced particular ideas about how to improve regulatory clarity with regard to cryptoassets and transactions.¹⁵⁹ Some of the proposed regulations related to the application of Bank Secrecy Act provisions,¹⁶⁰ while others focused more on whether cryptoassets should be regulated as securities or commodities.¹⁶¹ Unfortunately many of these bills have been criticized for lack of clarity or for being a poor fit with cryptoassets more generally.¹⁶²

While proposed legislation based on a recommendation from SEC Commissioner Hester Peirce to establish a limited safe harbor

[<http://perma.cc/LNY9-YV7Q>]. While the source claims that the bills were introduced in the 118th Congress, the bills discussed in the article were introduced in the 117th Congress. See, e.g., Clarity for Digital Tokens Act of 2021, H.R. 5496, 117th Cong. (Oct. 5, 2021), <http://www.congress.gov/bill/117th-congress/house-bill/5496/text?r=5&s=1> [<http://perma.cc/B6NP-G5WR>].

¹⁵⁸ Other topics, such as the taxation of crypto-based businesses and transactions, were also addressed in some of the bills. Some of the tax-related bills would have modified the definition of brokers required to report information to the I.R.S., and some would have added de minimis exemptions for small-value transactions. Brett, *supra* note 157.

¹⁵⁹ See *id.*

¹⁶⁰ See, e.g., Blockchain Regulatory Certainty Act, H.R. 5045, 117th Cong. § 2(a) (2021) (exempting certain non-controlling blockchain participants from the requirement to register as money transmitters or financial institutions). One problem with this particular bill was the breadth of the proposal, which included language exempting the providers of blockchain services from any licensing or registration requirement (with no limitation) unless they had “control” over a digital currency. *Id.* This would presumably have completely exempted trading platforms that do not have their own cryptoassets from any registration requirement. This could have made detecting and dealing with money-laundering, fraud, and market-manipulation much more difficult, and is doubtless broader than would be wise.

¹⁶¹ See, e.g., Token Taxonomy Act, H.R. 1628, 117th Cong. (2021). This bill would have removed cryptoassets (referred to in the bill as digital tokens) from the definition of “security,” unless they represented “a financial interest in a company or partnership, including an ownership interest or revenue share.” *Id.*

An additional bill focused on the question of whether cryptoassets should be regulated as securities. See Securities Clarity Act, H.R. 4451, 117th Cong. (2021). This bill provided that “investment contract assets”—which specifically included, without being limited to, intangible assets in digital form—were not to be included within the definition of security unless they fell within one of the other enumerated categories. *Id.* Obviously, this language is substantially broader than just cryptoassets, but it reflects an unease with the current regulatory approach of the SEC with regard to cryptoassets.

¹⁶² See *State of Regulation Report 2022: Untangling the Web of Federal Crypto Regulation*, PRIME TRUST 1, 3 (2022) [hereinafter PRIME TRUST], http://go.primetrust.com/rs/152-APF-177/images/Prime_Trust_State_of_Regulation_Report_2022.pdf [<http://perma.cc/J4HE-BYU6>] (noting that “legislators remain divided on what that regulation should entail” and that many of these proposed bills “are confusing or don’t fit our new digital economy”).

for certain offerings resulted in substantial early attention,¹⁶³ more recently bills allocating additional responsibility to the CFTC appear to have garnered the most attention.¹⁶⁴

On June 7, 2022, Senators Cynthia Lummis (R-Wyoming) and Kirsten Gillibrand (D-New York) introduced the Lummis-Gillibrand Responsible Financial Innovation Act.¹⁶⁵ This particular bill was far more detailed and encompassing than most other proposals initiated by the end of 2022.¹⁶⁶ As filed, the bill included eight distinct parts and fifty-six sections, covering definitions, taxation, securities regulation, commodities regulation, consumer protection, payments innovation, and

¹⁶³ SEC Commissioner Hester Peirce proposed a three-year safe harbor to allow responsible innovation in the crypto ecosystem. See Commissioner Hester M. Peirce, *Running on Empty: A Proposal to Fill the Gap Between Regulation and Decentralization*, U.S. SEC. & EXCH. COMM'N (Feb. 6, 2020), <http://www.sec.gov/news/speech/peirce-remarks-blockress-2020-02-06> [<http://perma.cc/T69A-5ABK>]. This idea has provided the basis for multiple legislative reform proposals. See Clarity for Digital Tokens Act of 2021, H.R. 5496, 117th Cong. (2021). The stated purpose of this bill was to exclude certain offerings of digital tokens (i.e., a digital representation of value or rights recorded on a publicly available ledger) from securities registrations. *Id.* On September 29, 2022, Senator Bill Hagerty (R-Tennessee) introduced the Digital Trading Clarity Act of 2022 to achieve the same result. *Hagerty Introduces Legislation to Provide Crucial Regulatory Clarity for Digital Assets*, BILL HAGERTY U.S. SENATOR FOR TENN. (Sept. 29, 2022), <http://www.hagerty.senate.gov/press-releases/2022/09/29/hagerty-introduces-legislation-to-provide-crucial-regulatory-clarity-for-digital-assets/> [<http://perma.cc/P2YT-JBAB>]. This bill would generally exclude from the definition of “security” any cryptotassets listed through intermediaries that meet requirements such as custody and disclosure along with other investor protections. Bill Flook, *Senate Bill Establish Temporary SEC Safe Harbor for Crypto Exchanges*, THOMPSON REUTERS: TAX & ACCT. (Oct. 7, 2022), <http://tax.thomsonreuters.com/news/senate-bill-establish-temporary-sec-safe-harbor-for-crypto-exchanges/> [<http://perma.cc/E82M-YPHA>]. This would change upon issuance of a final judgment to the contrary by a federal court or if the SEC issues “a statement, formal rulemaking, or enforcement action, and without objection from the Commodity Futures Trading Commission” and determines that a digital asset is a security. *Id.*

¹⁶⁴ See Jacquelyn Melinek, *As Crypto Regulation Looms Ahead, Here are the Bills to Look Out For*, TECHCRUNCH (Oct. 11, 2022, 5:00 AM), <http://techcrunch.com/2022/10/11/as-crypto-regulation-looms-ahead-here-are-the-bills-to-look-out-for/> [<http://perma.cc/ZY77-FYBK>] (suggesting that of the fifty bills related to cryptoassets, two of the three that stand out the most were “the Lummis-Gillibrand Responsible Financial Innovation Act and the Digital Commodities Consumer Protection Act of 2022”).

¹⁶⁵ Lummis-Gillibrand Responsible Financial Innovation Act, S. 4356, 117th Cong. (2022) [hereinafter Lummis-Gillibrand Bill]; see also Lummis, *Gillibrand Introduce Landmark Legislation to Create Regulatory Framework for Digital Assets*, KIRSTEN GILLIBRAND U.S. SENATOR FOR N.Y. (June 7, 2022), <http://www.gillibrand.senate.gov/news/press/release/-lummis-gillibrand-introduce-landmark-legislation-to-create-regulatory-framework-for-digital-assets> [<http://perma.cc/5PZG-S9XH>].

¹⁶⁶ See, e.g., Lummis, *Gillibrand Introduce Landmark Legislation to Create Regulatory Framework for Digital Assets*, KIRSTEN GILLIBRAND U.S. SENATOR FOR N.Y. (June 7, 2022), <http://www.gillibrand.senate.gov/news/press/release/-lummis-gillibrand-introduce-landmark-legislation-to-create-regulatory-framework-for-digital-assets> [<http://perma.cc/5PZG-S9XH>].

interagency coordination.¹⁶⁷ A section-by-section overview of the bill, released alongside the draft bill, described the objectives of the proposal.¹⁶⁸ Those include a clearer division of responsibility between the SEC and CFTC with more tailored disclosure requirements for cryptoassets, additional regulatory authority for the CFTC, and additional disclosures and operational requirements to protect consumers.¹⁶⁹

Senator Lummis has publicly claimed that this bill would have prevented the FTX collapse if the exchange had operated in compliance with its provisions.¹⁷⁰ The bill's requirements included a prohibition on bundling custody and other trading activities, and it would also have required segregation of customer accounts.¹⁷¹ Lummis has also indicated that she is hopeful that the FTX fiasco will encourage Congress to act expeditiously on the proposal in 2023.¹⁷²

On August 3, 2022, Senators Debbie Stabenow (D-Michigan) and John Boozman (R-Arkansas), along with Cory Booker (D-New Jersey) and John Thune (R-South Dakota) introduced the Digital Commodities Consumer Protection Act of 2022 (the "DCCPA").¹⁷³ A section-by-section analysis of the bill explains how it was designed to give the CFTC additional authority over spot markets in cryptoassets defined as digital commodities, including the requirement that any market for those assets be registered with the CFTC.¹⁷⁴ That is the primary focus of the bill, which specifically left

¹⁶⁷ See *id.*

¹⁶⁸ See generally *Lummis-Gillibrand Responsible Financial Innovation Act: Section-by-Section Overview*, <http://www.lummis.senate.gov/wp-content/uploads/Lummis-Gillibrand-Section-by-Section-Final.pdf> [<http://perma.cc/8KG5-6PAQ>] (last visited Feb. 5, 2023).

¹⁶⁹ See *id.*

¹⁷⁰ See Shanny Basar, *Lummis Said Bill Would Have Prevented FTX Collapse*, MARKETSMEDIA (Nov. 28, 2022), <http://www.marketsmedia.com/lummis-said-bipartisan-bill-would-have-prevented-ftx-collapse/> [<http://perma.cc/W34N-KEG2>].

¹⁷¹ See *id.*

¹⁷² See *Sen. Lummis: FTX Collapse Should Speed Consideration of Crypto Bill*, PYMNTS (Nov. 28, 2022), <http://www.pymnts.com/cryptocurrency/2022/sen-lummis-ftx-collapse-should-speed-consideration-of-crypto-bill/> [<http://perma.cc/4STZ-DYEV>].

¹⁷³ See *Boozman, Stabenow, Booker and Thune Introduce Legislation to Regulate Digital Commodities*, JOHN BOOZMAN: U.S. SENATOR FOR ARK. (Aug. 3, 2022), <http://www.boozman.senate.gov/public/index.cfm/2022/8/boozman-stabenow-booker-and-thune-introduce-legislation-to-regulate-digital-commodities> [<http://perma.cc/V67K-7BFU>]. The text of the bill is found at *Digital Commodities Consumer Protection Act of 2022*, S. 4760, 117th Cong. (2022), <http://www.congress.gov/bill/117th-congress/senate-bill/4760/text> [<http://perma.cc/6G8M-7MHB>].

¹⁷⁴ See *Digital Commodities Consumer Prot. Act of 2022 Section-by-Section*, U.S. SENATE COMM. ON AGRIC., NUTRITION, & FORESTRY, 1 (2022), http://www.agriculture.senate.gov/imo/media/doc/crypto_bill_section_by_section1.pdf [<http://perma.cc/Z78G-R27Z>].

the SEC as the sole regulator for any cryptoasset classified as a security.¹⁷⁵ The bill did not attempt to change existing classification standards, although it did provide improved cybersecurity standards for intermediaries and outlined disclosure and registration requirements for brokers in the space.¹⁷⁶

The recent FTX collapse also has ramifications for this bill. CFTC Chair Behnam has suggested if the Stabenow-Boozman bill had been law, the collapse could have been avoided.¹⁷⁷ After noting that his agency had no existing authority over FTX's transactions with its affiliate, Alameda Research, Behnam explained "this sort of activity would be prohibited" if the DCCPA was enacted.¹⁷⁸

Finally, on December 21, 2022, Senator Pat Toomey (R-Pennsylvania), ranking member of the Banking Committee, introduced legislation designed to "establish the first federal regulatory framework for payment stablecoins."¹⁷⁹ This legislation was called the "Stablecoin Transparency of Reserves and Uniform Safe Transactions Act of 2022" or the "Stablecoin TRUST Act of 2022."¹⁸⁰ The bill would have given the Office of the Comptroller of the Currency authority to design a license for payment stablecoin issuers,¹⁸¹ in addition would have provided definitions for digital assets and payment stablecoins.¹⁸² Only regulated entities would be allowed to issue payment stablecoins, but this would include entities licensed under the new rules.¹⁸³ New, standardized disclosure obligations would be specified, and all issuers would be required to fully back their stablecoins with

¹⁷⁵ *See id.*

¹⁷⁶ *See generally id.*

¹⁷⁷ *See De, supra* note 87 ("The collapse of crypto exchange FTX may not have happened if the firm was under the Commodity Futures Trading Commission's watch, the agency's head argued Thursday.").

¹⁷⁸ *See id.*

¹⁷⁹ *See Toomey Introduces Legislation to Guide Future Stablecoin Regulation*, S. COMM. ON BANKING, HOUS., & URB. AFFS. (Dec. 21, 2022) [hereinafter *Toomey Introduces*], <http://www.banking.senate.gov/newsroom/minority/toomey-introduces-legislation-to-guide-future-stablecoin-regulation> [<http://perma.cc/LJS2-4EGQ>].

¹⁸⁰ A copy of the bill is available at Stablecoin Transparency of Reserves and Uniform Safe Transactions Act of 2022, S. 5340, 117th Cong. (2022), http://www.banking.senate.gov/imo/media/doc/stablecoin_trust_act.pdf [<http://perma.cc/VMB8-PGWF>]. A section-by-section analysis of the proposed act is available at U.S. SENATE COMM. ON BANKING, HOUS., & URB. AFFS., 117TH CONG., THE STABLECOIN TRUST ACT SECTION-BY-SECTION (Comm. Print 2022), http://www.banking.senate.gov/imo/media/doc/stablecoin_trust_act_section-by-section.pdf [<http://perma.cc/TC5D-X6SD>].

¹⁸¹ *See* Stablecoin Transparency of Reserves and Uniform Safe Transactions Act of 2022, S. 5340, 117th Cong. § 6 (2022).

¹⁸² *See id.* § 2.

¹⁸³ *See id.* § 3.

reliable, liquid assets.¹⁸⁴ Although the bill was introduced very late in 2022, Senator Toomey had been soliciting proposals and seeking input since August 2021, and an earlier discussion draft had been circulated in April 2022 so there have been opportunities for input by various interested-parties.¹⁸⁵

Obviously, the late 2022 introduction of this bill meant that there was insufficient time in 2022 for discussion in committee or by the Senate or House, but Senator Toomey indicated his belief that there is a reasonable chance for this bill's eventual success notwithstanding his retirement.¹⁸⁶

Despite considerable attention to failures in crypto regulation by the media and widespread agreement that change is needed, these efforts at reforming crypto regulation have not yet succeeded.¹⁸⁷ With this reality in mind, what is the best way forward?

IV. ANALYSIS OF THE OPTIONS

The first of the bills described in the preceding section of this Article, the Lummis-Gillibrand proposal, was incredibly ambitious, seeking to address myriad issues around crypto regulation in a comprehensive, wholistic manner. This would appear to comport with Senator Warren's preference, as she has said that in her opinion "a digital currency bill must be 'comprehensive,' covering consumer protections, anti-money laundering rules and climate safeguards for crypto mining."¹⁸⁸

The bill was praised for its "thoroughness, thoughtfulness, and generally pro-crypto nature," along with suggestions that it offers "a look into what comprehensive legislation could look like."¹⁸⁹ The bill was bipartisan in its sponsorship, and it "sparked insightful conversations from both sides of the aisle" as a potential compromise between positions advocated by the SEC and CFTC.¹⁹⁰

¹⁸⁴ See *id.* § 4.

¹⁸⁵ See *Toomey Introduces*, *supra* note 179.

¹⁸⁶ See Arturas Skur, *Retiring U.S. Senator Pat Toomey Introduces New Comprehensive Stablecoin Bill*, DAILYCOIN (Dec. 22, 2022, 8:00 PM), <http://dailycoin.com/retiring-u-s-senator-pat-toomey-introduces-new-comprehensive-stablecoin-bill/> [<http://perma.cc/D6ZT-82QX>].

¹⁸⁷ See Allyson Versprille, *Crypto Overhaul Fizzles in Congress, Leaving Industry and Investors in Limbo*, BLOOMBERG (Oct. 5, 2022, 7:22 AM), <http://www.bloomberg.com/news/articles/2022-10-05/crypto-overhaul-fizzles-in-congress-leaving-industry-in-limbo?leadSource=verify%20wall> [<http://perma.cc/E2FA-BWF9>].

¹⁸⁸ Warmbrodt & Mueller, *supra* note 9.

¹⁸⁹ PRIME TRUST, *supra* note 162, at 21. This report also concludes, "[h]owever, in its current state, the bill is unlikely to pass." *Id.*

¹⁹⁰ *Id.*

On the other hand, the bill also sparked concern that it might weaken existing regulation.¹⁹¹ One commentator suggested the bill “appears to be designed to disarm the public by making them think crypto will be properly regulated while the industry and the insiders know that is simply not true.”¹⁹² Another opined that the bill could give “crypto promoters a free pass to keep avoiding taxes and lining their pockets at the expense of ordinary people”¹⁹³ The bill also did little to slow the “continued wrangling over definitions and jurisdiction between agencies like the SEC and CFTC.”¹⁹⁴

There is much to be said in favor of a comprehensive approach, but that does not necessarily make it the best option at this time. As has been noted elsewhere, “a comprehensive approach may make for greater certainty for the industry. On the other hand, the more comprehensive the legislation, the harder it may be to pass.”¹⁹⁵ In fact, the biggest obstacle to Congressional action appears to be the lack of consensus about how to move forward.¹⁹⁶ Given this, a more realistic alternative could easily be to tackle a discrete problem. This Article identifies three potential discrete issues that need to be resolved, but all three are likely to be hard to address.

Consider first the difficulty in clarifying which cryptoassets should be regulated as securities.¹⁹⁷ While everyone would prefer

¹⁹¹ SEC Chair Gensler, for example, has expressed concern that the bill could “undermine the protections we have.” Derek Andersen, *Lummis-Gillibrand Crypto Bill Comprehensive but Still Creates Division*, COINTELEGRAPH (June 22, 2022), <http://cointelegraph.com/news/lummis-gillibrand-crypto-bill-comprehensive-but-still-creates-division> [<http://perma.cc/DRX5-BS86>].

¹⁹² *Id.*

¹⁹³ *Lummis-Gillibrand Cryptocurrency Bill Would Leave a Dangerous Regulatory Void*, PUB. CITIZEN (June 7, 2022), <http://www.citizen.org/news/lummis-gillibrand-cryptocurrency-bill-would-leave-a-dangerous-regulatory-void/> [<http://perma.cc/QET5-PLZ8>] (quoting Bartlett Naylor, financial policy advocate at Public Citizen).

¹⁹⁴ Jon Southurst, *Will Senator Lummis’ Digital Asset Legislation Provide Clarity or Favoritism?* COINGEEK (Sept. 13, 2022), <http://coingeek.com/will-senator-lummis-digital-asset-legislation-provide-clarity-or-favoritism/> [<http://perma.cc/T54Z-6D76>].

¹⁹⁵ Ray et al., *supra* note 88. Former CFTC Commissioner Giancarlo accurately predicted at the beginning of 2022 that comprehensive reform was too much to expect in the short term. David Hollerith, *Crypto Should be Regulated by CFTC, Not Other Agencies: Ex-Official*, YAHOO! FIN. (Feb. 17, 2022), <http://finance.yahoo.com/news/ex-cftc-chair-explains-why-crypto-should-be-regulated-by-agency-214249207.html> [<http://perma.cc/G5UD-SZYC>].

¹⁹⁶ See Quarmby, *supra* note 9.

¹⁹⁷ “There has been a long-running debate among regulators on which crypto assets should fall under the category of a commodity or a security” *Id.* It has also been noted that “[o]ne of the biggest challenges is resolving the question of whether crypto is an asset or a security.” Betsy Vereckey, *Experts Debate How to Move Crypto Regulation Forward*, MIT SLOAN (Mar. 29, 2022), <http://mitsloan.mit.edu/ideas-made-to-matter/experts-debate-how-to-move-crypto-regulation-forward> [<http://perma.cc/Q4Y2-C9NJ>].

that the jurisdiction of the SEC be defined clearly,¹⁹⁸ some observers are in favor of providing the agency with a very expansive jurisdictional charge.¹⁹⁹ Senator Warren, for one, would take this approach.²⁰⁰ Commentators on this side of the debate are generally insistent that the CFTC's approach to crypto regulation is inadequate.²⁰¹ On the other hand, there are also those who want Congressional clarification in order to temper the SEC's perceived pattern of regulation by enforcement.²⁰² In addition, "[t]he industry has generally viewed the SEC as overstepping its authority — a view shared by multiple politicians, like those who are members of the Congressional Blockchain Caucus."²⁰³

With this stark division in opinion in mind, is there greater agreement that the CFTC should be given regulatory authority over cryptoasset spot markets? Certainly, there is widespread

¹⁹⁸ For example, "[a]s of the afternoon of Aug. 22, 2022, almost 1,700 individuals or organizations signed a form letter specifically asking SEC Chair Gary Gensler for clear rules of the crypto road." Soyoung Ho, *Industry Ratchets Up Pressure on SEC Asking for Crypto Regulation, but Gensler Says Clear Rules Already Exist*, THOMSON REUTERS TAX & ACCT. (Aug. 26, 2022), <http://tax.thomsonreuters.com/news/industry-ratchets-up-pressure-on-sec-asking-for-crypto-regulation-but-gensler-says-clear-rules-already-exist/> [<http://perma.cc/7DAV-M7XF>].

¹⁹⁹ Consider the input of Molly White, a software engineer who runs the *Web3 Is Going Just Great* blog, which documents crypto fraud. White has said the following: "Cryptocurrencies are more like securities because people broadly put money into them hoping for a return on their investment And when someone is engaging with something as an investment, that's a good sign that it should go to the SEC." Connor Donevan & Patrick Jarenwattananon, *There's a New Plan to Regulate Cryptocurrencies. Here's What You Need to Know*, HOUS. PUB. MEDIA (June 14, 2022), <http://www.houstonpublicmedia.org/npr/2022/06/14/1104303982/theres-a-new-plan-to-regulate-cryptocurrencies-heres-what-you-need-to-know/> [<http://perma.cc/7KBM-CYAR>]. It is also her opinion that the CFTC is not equipped to handle the role of primary crypto cop. *Id.*

²⁰⁰ "Anti-crypto Senator Elizabeth Warren has been working hard on a cryptocurrency bill that puts the U.S. Securities and Exchange Commission in charge of the asset class." Martin Young, *Elizabeth Warren Pushes Strict Crypto Bill to Empower the SEC*, BEINCRYPTO (Dec. 7, 2022), <http://beincrypto.com/elizabeth-warren-pushing-strict-crypto-bill-to-empower-the-sec/> [<http://perma.cc/GY3K-LEW7>].

²⁰¹ One of the most strident objections to the CFTC's approach comes from non-profit investor advocacy group Better Markets. According to the group, and as reported in the *Financial Times*, "the CFTC might not have been able to prevent the FTX debacle. Frauds happen. But the agency has consistently acted as a friendly champion of a fraud-riddled dumpster fire it purportedly wants to supervise." *Better Markets Cited in Financial Times Piece on CFTC's FTX Failures*, BETTER MKTS. (Dec. 15, 2022), <http://bettermarkets.org/newsroom/better-markets-cited-in-financial-times-piece-on-cftcs-ftx-failures/> [<http://perma.cc/7MH8-N9VU>].

²⁰² Senator Patrick McHenry, for example, has said that "[i]t's clear that congressional action is the only way to end Gary Gensler's regulation by enforcement, and ensure the digital asset ecosystem can thrive here in the U.S." Wilhelm & Murray, *supra* note 9.

²⁰³ PRIME TRUST, *supra* note 162, at 8.

agreement that marketplaces which facilitate trading in cryptoassets that are not classified as securities, such as Bitcoin, need to be regulated.²⁰⁴ Unfortunately, this does not mean that there is complete agreement that the appropriate regulator should be the CFTC.

While some within²⁰⁵ and outside²⁰⁶ the crypto industry seem to favor the CFTC's approach, there are certainly those who disagree. Mark Hays, senior policy analyst at Americans for Financial Reform and Demand Progress, has opined that “[t]he SEC, with its mandate for investor protection, should remain the primary agency regulating cryptocurrency, and Congress should resist the demands of this industry’s lobby for privileged treatment. Any role the CFTC has should be a narrow one.”²⁰⁷

Moreover, there is also disagreement about the viability of the DCCPA itself. For example, although CFTC Chairman Behnam has not objected to the DCCPA, he has also suggested that while it is important to move forward as quickly as possible to fill regulatory gaps, “we should take a pause and look at the bill and make sure there are no gaps or no holes.”²⁰⁸ Others have objected to the entire tone of the bill. For example, according to Mark Hays “[t]his bill simply does not provide sufficient protections for retail investors and may create regulatory gaps that will legitimize existing harmful industry practices, leading to widespread harm for investors and consumers.”²⁰⁹ A very specific concern stems from the language of the bill, because:

[T]he definition provided for digital commodities could be considered too narrow, and the divisions between the CFTC and SEC authorities are not definitive enough. Without specificity in authorities, legislation that

²⁰⁴ See *supra* Part II.A.

²⁰⁵ “As regulators vie for control and legislation to settle this debate makes its slow march through Congress, many within the industry hope to see the Commodity Futures Trading Commission (CFTC)—often perceived as the friendlier of the two—emerge as the industry’s primary regulator.” Field, *supra* note 6; see also *supra* note 10 and accompanying text.

²⁰⁶ Former CFTC Commissioner J. Christopher Giancarlo has suggested that “it’s time for Congress to take the lead and permit his former agency to run point on the asset class’ regulation.” Hollerith, *supra* note 195; see also *supra* notes 4, 10–11 and accompanying text.

²⁰⁷ *News Release: CFTC Should Have Narrow Role in Crypto to Preserve SEC Primacy*, AMS. FOR FIN. REFORM (Sept. 14, 2022), [hereinafter *CFTC Narrow Role*] <http://ourfinancialsecurity.org/2022/09/news-release-cftc-should-have-narrow-role-in-crypto-to-preserve-sec-primacy/> [<http://perma.cc/M86U-6WDR>].

²⁰⁸ See De, *supra* note 87 (“The collapse of crypto exchange FTX may not have happened if the firm was under the Commodity Futures Trading Commission’s watch, the agency’s head argued Thursday.”).

²⁰⁹ *CFTC Narrow Role*, *supra* note 207.

allows continued regulatory ambiguity about who is the true regulatory agency will not significantly improve current circumstances.²¹⁰

Finally, the collapse of FTX also provides ammunition to those who oppose the bill. Senator Lummis, who has suggested that “FTX was heavily involved in drafting the bill,” has argued that it “needs to be rewritten in a way that is more effective and neutral as to business models, but still very focused on consumer protection.”²¹¹ The fact that the bill was supported by the disgraced former-CEO of FTX, Sam Bankman-Fried, may therefore be a significant obstacle to its enactment.²¹²

Even though the DCCPA did not garner the amount of support (in its original form) necessary to ensure its enactment, there seems to be considerable support for the idea behind that bill.²¹³ A revised document, perhaps with definitions drafted without the involvement of anyone associated with FTX,²¹⁴ might have a better chance for eventual enactment.

The last of the three bills described in the preceding section, the Stablecoin Trust Act,²¹⁵ suggests a different approach to regulation. Rather than dealing with cryptoassets defined inclusively, this bill focuses on a single class of cryptoassets: stablecoins.²¹⁶ The bill was specifically designed to promote competition by declining to entrench existing depository

²¹⁰ PRIME TRUST, *supra* note 162, at 24.

²¹¹ Basar, *supra* note 170.

²¹² Chelsey Cox, *Congress Considers Crypto Consumer Protection Bill that Sam Bankman-Fried Backed Before FTX Collapse*, CNBC (Dec. 13, 2022, 12:44 PM), <http://www.cnbc.com/2022/12/13/digital-commodities-consumer-protection-act-sam-bankman-fried-ftx-fail.html> [<http://perma.cc/H5ZS-H9SZ>]. “Days after FTX’s implosion, Lisa Braganca, a former enforcement branch chief at the SEC, said Bankman-Fried’s close association with those on Capitol Hill made her doubtful that Congress would act on the DCCPA.” *Id.*

²¹³ “Brett Quick, head of government affairs for the trade association Crypto Council for Innovation, said that of all potential crypto legislation, the DCCPA had the most momentum and broadest support” Leo Schwartz, *SBF Is About to be Grilled by Congress. Here’s Where Lawmakers Stand on Crypto Legislation*, YAHOO! (Dec. 12, 2022), <http://www.yahoo.com/now/sbf-grilled-congress-where-lawmakers-191300366.html> [<http://perma.cc/X4JY-EDER>]. The sponsors for the bill are certainly pushing ahead even in light of criticisms, although they have expressed willingness to continue working on the language. See Brayden Lindrea, *US Senators Commit to Advancing Crypto Bill Despite FTX Collapse*, COINTELEGRAPH (Nov. 11, 2022), <http://cointelegraph.com/news/us-senators-commit-to-advancing-crypto-bill-despite-ftx-collapse> [<http://perma.cc/5H3G-FJZM>].

²¹⁴ CFTC Chair Behnam is a strong advocate for this approach. See Kate Berry, *CFTC’s Behnam Urges Lawmakers to Build on Stabenow-Boozman Crypto Bill*, AM. BANKER (Dec. 1, 2022, 4:22 PM), <http://www.americanbanker.com/news/cftcs-behnam-urges-lawmakers-to-build-on-stabenow-boozman-crypto-bill> [<http://perma.cc/UTS9-8A7D>].

²¹⁵ See *supra* note 180 and accompanying text.

²¹⁶ *Id.*

institutions; instead it provided a new option for registration for stablecoin issuers.²¹⁷

There are some concerns that might be raised about the bill in its current form. First, it only applied to assets with a value pegged to one or more fiat currencies, and not assets, such as gold, that might also be used.²¹⁸ The definition of “payment stablecoin” only applied if the asset is “recorded on a public distributed ledger,”²¹⁹ which is not defined, leading to the possibility that a proprietary ledger that is not fully distributed to the public might not qualify. Both of these limitations in the definitions section could have created potential ways for stablecoin issuers to evade application of the bill’s requirements. In addition, the bill in its original form also failed to address decentralized stablecoins.²²⁰ The biggest potential obstacle to Toomey’s bill, however, was that by exempting stablecoins from the purview of the SEC,²²¹ crypto-skeptics who favor aggressive enforcement to protect the investing public are not likely to favor the bill’s approach.

V. THE NEED FOR CHANGE

Although there are problems with the existing regulatory framework (or the lack thereof), there are also problems with all of the bills that were introduced in 2021 and 2022. Nonetheless, a legislative response²²² that focuses on discrete aspects of reform seems more likely to succeed than omnibus legislation, regardless of how theoretically appealing a comprehensive

²¹⁷ See Skur, *supra* note 186. As noted by Toomey, the bill “will also ensure the Federal Reserve, which has displayed significant skepticism about stablecoins, won’t be in a position to stop this activity.” *Id.*

²¹⁸ See Stablecoin TRUST Act, S. 5340, 117th Cong. § 2(9)(A) (2022).

²¹⁹ *Id.* § 2(9)(F).

²²⁰ See *id.* § 2(9)(D); accord Skur, *supra* note 186.

²²¹ Stablecoin TRUST Act, S. 5340, 117th Cong. § 7 (2022) (exemption from securities requirements).

²²² Legislation is likely required because of the SEC’s persistent refusal to enact clear regulations. SEC Commissioner Hester Peirce, admittedly often in the minority on the Commission, has made repeated calls for additional regulatory clarity. See Sarah Milby, *Hester Peirce, “Crypto Mom,”* THE UNIV. OF CHI.: WOMAN IS A RATIONAL ANIMAL (Feb. 12, 2021), <http://womanisrational.uchicago.edu/2021/02/12/hester-peirce-crypto-mom-on-responsible-regulation-and-innovation/> [<http://perma.cc/M5XS-MPYJ>]. However, “Peirce has been unsuccessful in convincing her colleagues in the SEC to abandon the pattern of fractured regulation by enforcement action and to instead consider creating comprehensive, clear regulations for cryptocurrencies that benefit consumers and investors.” *Id.*; see also Brian Croce, *SEC Commissioner Calls on Congress to Pass Crypto Regulatory Bill*, PENSIONS & INVS. ONLINE (Oct. 12, 2022, 4:01 PM), <http://www.pionline.com/regulation/sec-commissioner-calls-congress-pass-crypto-regulatory-bill> [<http://perma.cc/D4PH-N7DB>].

After noting the SEC’s active role in enforcement to date, Pierce specifically claimed that “it is a good time for legislation. It’s up to Congress to figure out how they want to allocate regulatory responsibility.” *Id.*

response sounds.²²³ As others have been saying for years, the difficulty will be “to design laws that stimulate innovation while protecting consumer welfare and satisfaction.”²²⁴

The reason to focus on the CFTC is most definitely not because it will be “friendlier” to crypto enterprises or that it will tolerate abuses.²²⁵ Instead, the CFTC should be assigned the role because the SEC, despite its active enforcement efforts,²²⁶ has failed to provide a compliant path forward.²²⁷ The result is that companies that want to comply with applicable regulations “instead have been bankrupted or driven offshore by regulators’ approach.”²²⁸

If you start from the proposition that blockchain technology and cryptoassets have positive potential, then the need for a balanced approach seems clear.²²⁹ While the desirability of the technology might be up for debate, the Biden administration, with input from a wide array of federal agencies and administrators, has already concluded that there is sufficient merit that innovation in this area must be facilitated.²³⁰ It therefore appears relatively clear that it would be far from ideal to rely on an agency

²²³ See *supra* notes 188–196 and accompanying text.

²²⁴ Scott D. Hughes, *Cryptocurrency Regulations and Enforcement in the U.S.*, 45 W. ST. U. L. REV. 1, 28 (2017).

²²⁵ Gary DeWall, a former CFTC enforcement lawyer, has explained, “[i]f somebody thinks you’re going to get a pass at the CFTC, I think that’s a mistaken belief . . . Any violation is going to be met with enforcement actions by either regulator, and they’re going to be severe.” Jesse Hamilton & Cheyenne Ligon, *US CFTC as Crypto’s Regulatory Savior? Crypto Firms Might Not Like What They Get*, COINDESK (Oct. 6, 2022, 11:31 AM), <http://www.coindesk.com/policy/2022/10/05/us-cftc-as-cryptos-regulatory-savior-crypto-firms-might-not-like-what-they-get/> [<http://perma.cc/XB7G-6J45>]. Current CFTC Commissioner Caroline Pham agrees: “Anybody who thinks that the CFTC is not going to be tough might have missed when we fined all the banks billions of dollars for fraud and manipulation after the financial crisis.” *Id.*

²²⁶ “The SEC is leading the charge for more regulatory oversight of cryptocurrency products and platforms that may be engaging in the sale and offering of securities.” Roger E. Barton et al., *Are Cryptocurrencies Securities? The SEC Is Answering the Question*, REUTERS (Mar. 21, 2022, 9:27 AM), <http://www.reuters.com/legal/transactional/are-cryptocurrencies-securities-sec-is-answering-question-2022-03-21/> [<http://perma.cc/6RHP-JKVN>].

²²⁷ In the words of one observer, “SEC Chairman Gary Gensler has stiff-armed companies that try to ascertain their status, only to turn around and sue them for failing to comply with securities laws.” Molly Ball, *Crypto Goes to Washington*, TIME (Oct. 3, 2022, 7:00 AM), <http://time.com/6215042/crypto-washington-dc-regulation/> [<http://perma.cc/QL5-MXK8>].

²²⁸ *Id.*

²²⁹ “No matter what regulators do, they shouldn’t stifle the innovation that is at the heart of this market.” Levitt & Ahluwalia, *supra* note 156.

²³⁰ On March 9, 2022, President Biden made history by signing an Executive Order on cryptoassets. Exec. Order No. 14067, 87 Fed. Reg. 14143 (Mar. 9, 2022). The Executive Order specifically called for a balanced approach towards cryptoasset regulation, in which agencies were expected to work together to “protect consumers, investors, and businesses,” while acting to “reinforce United States leadership in the global financial system and in technological and economic competitiveness, including through the responsible development of payment innovations and digital assets.” *Id.* § 2(a), (d).

that has declined to provide reasonable alternatives that comply with regulatory requirements.²³¹

To illustrate the problem with relying on the SEC, consider Coinbase, a major cryptocurrency market and dealer. First, it “went public with the SEC’s approval—and then couldn’t get approval from the Financial Industry Regulatory Authority to offer cryptoassets through its own broker dealer since many cryptoassets are considered unregistered securities.”²³² Then, Coinbase approached the SEC with plans to offer Coinbase Lend but the agency waited until just before the program would have been effective to send Coinbase a notice that the plans would likely violate federal securities laws,²³³ even though there were other active unregistered lending programs in effect.²³⁴

Telegram provides another example of how difficult it can be to comply with SEC requirements. The company initiated a two-stage offering pursuant to which functional cryptoassets to be known as Grams were supposed to be issued no later than October 31, 2019.²³⁵ Shortly before the Grams were to be delivered in the fall of 2019, the SEC filed an emergency action alleging that Telegram had violated the federal securities laws by conducting an unregistered digital token offering.²³⁶ As part of its complaint, the Commission requested (and received) an ex parte TRO to prevent Telegram from “flooding the U.S. markets with digital

²³¹ “Market participants who want to work within the securities laws or engage the SEC don’t have a clear path to compliance.” Levitt & Ahluwalia, *supra* note 156.

²³² *Id.*

²³³ The SEC sent Coinbase a Wells Notice, which is “a notification from a regulator that it intends to recommend that enforcement proceedings be commenced against the prospective respondent. The notice references, in broad-strokes, the violation that the Staff believes has occurred.” Mark Astarita, *The Wells Notice SEC/FINRA Investigations*, SECLAW.COM (Mar. 18, 2023), <http://www.seclaw.com/wells-notice-sec-finra-investigations/> [<http://perma.cc/B72K-S9GV>].

²³⁴ Coinbase’s planned crypto lending program would have offered U.S. participants interest on their deposits of USDC at rates substantially higher than those offered for cash deposited with conventional financial institutions; however, it was shuttered just before its planned initiation date. See Paul Grewal, *The SEC Has Told Us It Wants to Sue Us Over Lend. We Don’t Know Why.*, COINBASE (Sept. 7, 2021), <http://www.coinbase.com/blog/the-sec-has-told-us-it-wants-to-sue-us-over-lend-we-have-no-idea-why> [<http://perma.cc/TTC5-6ELJ>]. In 2021, similar programs were available from major crypto businesses such as BlockFi and Celsius. See *What’s the Best Crypto Lending Platform?*, ZENLEDGER (July 26, 2021), <http://www.zenledger.io/blog/best-crypto-lending-platform> [<http://perma.cc/HWG6-RDCZ>].

²³⁵ See Nathaniel Popper, *Telegram Pushes Ahead with Plans for ‘Gram’ Cryptocurrency*, N.Y. TIMES (Aug. 27, 2019), <http://www.nytimes.com/2019/08/27/technology/telegram-cryptocurrency-gram.html> [<http://perma.cc/S5TK-MTWE>].

²³⁶ See Complaint at ¶¶ 2, 9, 120–21, SEC v. Telegram Grp. Inc., No. 19 Civ. 9439 (PKC) (S.D.N.Y. Oct. 11, 2019), <http://www.sec.gov/litigation/complaints/2019/comp-pr2019-212.pdf> [<http://perma.cc/Q5N9-3XFD>].

tokens that . . . were unlawfully sold.”²³⁷ Telegram responded promptly,²³⁸ with a brief claiming that there was no need for an emergency order²³⁹ and requesting the court deny the Commission’s request for a preliminary injunction.²⁴⁰ Part of Telegram’s reasoning was that the SEC had failed to provide notice of how it intended to interpret or apply the securities laws, despite Telegram engaging in eighteen months of dialogue with the Commission about its plans.²⁴¹

Ripple provides yet another example of how difficult it is to comply with SEC requirements. Ripple began issuing XRP tokens in 2013,²⁴² leading to a very public determination in 2015 by FinCEN that the company had engaged in improper money transmission by failing to register and implement required anti-

²³⁷ See *SEC Halts Alleged \$1.7 Billion Unregistered Digital Token Offering*, Press Release No. 2019-212, U.S. SEC. & EXCH. COMM’N (Oct. 11, 2019), <http://www.sec.gov/news/press-release/2019-212> [<http://perma.cc/759K-97DH>].

²³⁸ See Defendants’ Response in Opposition to Plaintiff’s Emergency Application for Preliminary Injunction at 1, SEC v. Telegram Grp. Inc., No. 19 Civ. 9439 (PKC) (S.D.N.Y. Oct. 16, 2019) [hereinafter Telegram Response], <http://storage.courtlistener.com/recap/gov.uscourts.nysd.524448/gov.uscourts.nysd.524448.7.0.pdf> [<http://perma.cc/2UXH-AYB8>] (describing defendants’ response in opposition to the SEC’s emergency request for a preliminary injunction).

²³⁹ This initial response specifically alleged that Telegram had spent the preceding eighteen months in voluntary talks with and soliciting feedback from the SEC, “consistent with the SEC’s publicly stated desire to engage with developers of digital asset technologies.” *Id.* at 1 (citation omitted). As of August 25, 2020, the SEC’s Strategic Hub for Innovation and Financial Technology (“FinHub”) “encourage[d] anyone working with RegTech solutions or implementations to engage with FinHub as part of this initiative.” *Strategic Hub for Innovation and Financial Technology (FinHub)*, U.S. SEC. & EXCH. COMM’N, <http://www.sec.gov/finhub> [<http://perma.cc/4WFH-6HKA>] (last visited Aug. 25, 2020); cf. *Strategic Hub for Innovation and Financial Technology (FinHub)*, U.S. SEC. & EXCH. COMM’N (Aug. 11, 2022), <http://www.sec.gov/finhub> [<http://perma.cc/BHQ8-MSMG>] (noting that as of January 12, 2023, FinHub describes itself as “a public resource for information about the SEC’s views and actions related to FinTech innovation”).

²⁴⁰ See Telegram Response, *supra* note 238, at 1.

²⁴¹ *Id.* at 2. The Telegram response claimed that, despite being fully aware of the terms of the proposed offering, the SEC “(i) never requested that Telegram delay the launch of the TON Blockchain; [and] (ii) never advised Telegram of its intention to seek injunctive relief . . .” *Id.*

²⁴² There is some debate about the original transactions, as the first 32,569 ledger entries on the XRP ledger were accidentally lost due to a bug in the program. See Anton Lucian, *XRP’s Genesis Block Still Has No Record*, BEINCRYPTO (Dec. 15, 2019, 5:20 PM), <http://beincrypto.com/xrps-genesis-block-still-has-no-record/> [<http://perma.cc/CPE9-F9WF>]. While the SEC claims that the initial issuance of XRP was to the company, other versions of the genesis transactions suggest that the initial distribution was to the founders, who contributed or gifted (depending on the source) eighty billion XRP to the company. See *XRPL’s Origin: Provide a Better Alternative to Bitcoin*, XRP LEDGER, <http://xrpl.org/history.html> [<http://perma.cc/JRW3-ZD5C>] (last visited March 17, 2023).

money laundering and know-your-customer protocols.²⁴³ Five years after the settlement of the FinCEN action and public agreement that the company's XRP token was acting as a currency substitute and seven years after the first public sale of the asset, the SEC initiated an action against the company and its current and former CEOs for illegally selling securities.²⁴⁴ The idea that the Commission can wait for that many years before initiating action against a clearly unregistered asset being widely sold and traded flies in the face of the repeated assertions that application of the *Howey* test²⁴⁵ to cryptoassets is clear.²⁴⁶

Thus, there is an argument to be made that the real issue with the SEC is not its experience or its assets, or certainly its willingness to engage with actors in the crypto space; rather, it is a legitimate concern that the Commission has repeatedly failed to provide a compliant path forward.²⁴⁷ Nonetheless, with the pronounced tension between legislators who support the SEC and those who favor the CFTC as crypto enforcers, starting with a bill that favors one over the other may be difficult.

This leaves options such as Senator Toomey's Stablecoin TRUST Act bill.²⁴⁸ Some have considered stablecoin regulation to be the most likely to result in regulation in the short term.²⁴⁹ This bill also faces opposition, including from those who support stablecoin regulation, but under a different approach. U.S. Representative Patrick McHenry (R-North Carolina), has

²⁴³ See *FinCEN Fines Ripple Labs Inc. in First Civil Enforcement Action Against a Virtual Currency Exchanger*, FIN. CRIMES ENFT NETWORK (May 5, 2015), <http://www.fincen.gov/news/news-releases/fincen-fines-ripple-labs-inc-first-civil-enforcement-action-against-virtual> [<http://perma.cc/AR36-NEN6>].

²⁴⁴ *SEC Charges Ripple and Two Executives with Conducting \$1.3 Billion Unregistered Securities Offering*, Press Release No. 2020-338, U.S. SEC. & EXCH. COMM'N (Dec. 22, 2020), <http://www.sec.gov/news/press-release/2020-338> [<http://perma.cc/CC3P-EY7B>].

²⁴⁵ See discussion *supra* Part I.A.

²⁴⁶ See Kevin Helms, *SEC Chair Gensler Insists Most Crypto Tokens Are Securities — Says 'the Law Is Clear'*, BITCOIN.COM (Oct. 4, 2022), <http://news.bitcoin.com/sec-chair-gensler-insists-most-crypto-tokens-are-securities-says-the-law-is-clear/> [<http://perma.cc/F38C-DDWQ>] (“The chairman of the U.S. Securities and Exchange Commission (SEC), Gary Gensler, has reiterated that most crypto tokens are securities, emphasizing that ‘the law is clear on this.’”).

²⁴⁷ As has been observed elsewhere, “[m]arket participants who want to work within the securities laws or engage the SEC don’t have a clear path to compliance.” Levitt & Ahluwalia, *supra* notes 156.

²⁴⁸ See *supra* notes 179–186 and accompanying text.

²⁴⁹ See Sam Sutton, *House Punts on Stablecoin Bill After Yellen Raises Flags Over Key Provision*, POLITICO (July 25, 2022, 6:26 PM), <http://www.politico.com/news/2022/07/25/house-stablecoin-bill-delay-yellen-00047728> [<http://perma.cc/36RT-KL9L>] (noting that “[m]any industry people have considered this Congress’ clearest shot at developing a rulebook for [cryptoassets]”).

“emphasized the need for federal regulation surrounding stablecoins,” and stated his belief that such registration is “coming.”²⁵⁰ Representative Maxine Waters (D-California) also agrees that stablecoin regulation is a high priority.²⁵¹ They also had a stablecoin bill, which would have reportedly given authority to the Federal Reserve to regulate stablecoins,²⁵² a choice that produced considerable pushback from various interested parties.²⁵³

Even with debate over the details, “U.S. lawmakers generally agree that a stablecoin bill will require full, one-to-one backing with liquid assets such as cash and U.S. Treasury bills.”²⁵⁴ This suggests that a bill such as Toomey’s could be a logical starting point for forward momentum.

CONCLUSION

Blockchain has tremendous potential that has yet to be realized, but in order for this to happen, appropriate regulation needs to be in place.²⁵⁵ Appropriate regulation requires clarity (which does not always appear to exist notwithstanding repeated statements from some that it does)²⁵⁶ and a path forward for

²⁵⁰ Leo Schwartz, ‘An Ugly Baby’: Rep. Patrick McHenry Confident Stablecoin Legislation Will Get Passed, FORTUNE (Oct. 12, 2022, 1:23 PM), http://fortune.com/crypto/2022/10/12/rep-mchenry-confident-stablecoin-legislation/?utm_source=Iterable&utm_medium=email&utm_campaign=campaign_5857332.

²⁵¹ See Joe Light, A \$150 Billion Crypto Market Faces New Regulations Under Lawmakers’ Proposal, BARRON’S (Sept. 20, 2022, 7:03 PM), <http://www.barrons.com/articles/crypto-legislation-congress-51663714348> [<http://perma.cc/524B-63Z9>] (noting that Waters and McHenry worked for months on possible language but ultimately failed to introduce a stablecoin bill in the summer of 2022).

²⁵² Sam Sutton & Declan Harty, House Stablecoin Bill Begins to Take Shape with Circulating Draft, POLITICOPRO (Sept. 20, 2022, 8:58 PM), <http://subscriber.politicopro.com/article/2022/09/house-stablecoin-bill-begins-to-take-shape-with-circulating-draft-00057913>.

²⁵³ See Sam Sutton, Crypto Bill From Maxine Waters Faces Bipartisan Resistance, POLITICOPRO (Sept. 26, 2022, 7:20 PM), <http://subscriber.politicopro.com/article/2022/09/crypto-bill-from-maxine-waters-faces-bipartisan-resistance-00058902>.

²⁵⁴ Jesse Hamilton, The Members of Congress Who Have Stablecoin Issuers Watching Their Next Moves, COINDESK (Dec. 5, 2022, 7:43 PM), <http://www.coindesk.com/consensus-magazine/2022/12/05/maxine-waters-patrick-mchenry-most-influential-2022/> [<http://perma.cc/Y4KS-GSGH>].

²⁵⁵ Levitt & Ahluwalia, *supra* note 156 (“[T]o realize the technology’s full potential, both sides must acknowledge two simultaneous truths: Cryptocurrency markets need oversight, and regulators need to do more than regulate by enforcement.”).

²⁵⁶ See generally Leo Schwartz, ‘Our Rules Have to Evolve’: The Crypto Industry Is Trapped in Regulatory Purgatory, FORTUNE (Sept. 19, 2022, 4:00 AM), <http://fortune.com/crypto/2022/09/19/crypto-industry-trapped-regulatory-purgatory/> [<http://perma.cc/D242-DH5A>]; see also *supra* note 198 and accompanying text.

businesses that want to comply (a path that does not always exist under current rules).²⁵⁷

There are indeed gaps in current crypto regulation. Those include the failure to have a clear definition of when cryptoassets are securities,²⁵⁸ notwithstanding repeated assertions that almost all of such assets should be recognized as such.²⁵⁹ They also include a lack of regulation and oversight for exchanges that facilitate transactions in those cryptoassets that are not securities,²⁶⁰ particularly so long as these businesses have room to argue that the cryptoassets that they list are not securities. Another gap exists when it comes to specifying appropriate oversight of and requirements for stablecoins.²⁶¹ Bills have been proposed to address each of these gaps, but dissension and disagreement among legislators makes forward progress difficult.

While there are theoretical reasons to support comprehensive reform, that appears unlikely to be achievable due to political realities. Thus, a more limited and incremental approach is likely to be necessary. Public debate over the uncertainty about which cryptoassets are securities and who needs to be the primary regulator has garnered the most attention in the popular press and among academic commentators. However, this Article suggests that a more likely first step for Congress would be to address a discrete problem—such as how to handle stablecoins²⁶² or whether to give the CFTC authority over spot markets for crypto that is not a security.²⁶³ Even a baby step forward would mean that there is some progress being made.

²⁵⁷ See *Crypto Venues Ask for Clarity, But About What Isn't Clear*, DIGFIN (Dec. 6, 2021), <http://www.digfingroup.com/gemini-regulation/> [<http://perma.cc/MXZ9-PF3F>] (“[Crypto exchanges are] finding it is impossible to port a crypto business onto TradFi [or traditional finance] regulations, or to simply cut and paste existing regulations onto a crypto business.”)

²⁵⁸ See *supra* Part II.A.

²⁵⁹ Di Salvo, *supra* note 36.

²⁶⁰ See *supra* Part II.B.

²⁶¹ See *supra* Part II.C.

²⁶² A bill taking this approach is the Stablecoin TRUST Act. See Stablecoin TRUST Act of 2022, S. 5340, 117th Cong. (2022); see also discussion at notes 179–185 and accompanying text.

²⁶³ A bill taking this approach is the DCCPA. See *supra* note 173; see also discussion at notes 173–178 and accompanying text.

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