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COMMODITY OR CURRENCY: CRYPTOCURRENCY VALUATION IN BANKRUPTCY AND THE TRUSTEE'S RECOVERY POWERS

Abstract: Cryptocurrencies have rapidly grown to global prominence over the past decade, inspiring new forms of investments and transactions among entrepreneurs and business novices alike. The rise of cryptocurrencies has naturally led to a rise in businesses and individuals in possession of cryptocurrency assets declaring bankruptcies. The cryptocurrency assets then become part of the bankruptcy estate. As a result, bankruptcy courts are struggling with whether cryptocurrencies are currencies or commodities, a classification that has broad implications for the recovery and valuation of cryptocurrency assets in the event of fraudulent and preferential transfers. This Note argues that bankruptcy courts should treat cryptocurrencies like commodities because this largely eliminates valuation problems when the trustee can recover the cryptocurrency asset itself. A commodity classification, however, will not entirely prevent valuation problems in cases of fraudulent and preferential transfers where physical recovery is not possible. This Note further argues that in cases where bankruptcy courts cannot recover the asset and must therefore recover its value, courts should value the cryptocurrency asset as of the date of the bankruptcy petition.

INTRODUCTION

In 2008, a mysterious paper stormed the internet, introducing a technology that its author claimed would bring an end to the era of centralized financial transactions.¹ That paper, known colloquially as the “white paper,” described Bitcoin and the blockchain technology from which it was born.² Bitcoin’s fa-

¹ SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 1 (2008), <https://bitcoin.org/bitcoin.pdf> [<https://perma.cc/C9U2-FXAG>] (introducing Bitcoin and the underlying blockchain technology that made it possible); Larissa Lee, *New Kids on the Blockchain: How Bitcoin’s Technology Could Reinvent the Stock Market*, 12 HASTINGS BUS. L.J. 81, 83 (2016) (discussing the white paper that first described Bitcoin). “Bitcoin” with a capital “B” refers to the entire system of Bitcoin technology and the underlying network. *Some Bitcoin Words You Might Hear*, BITCOIN, <https://bitcoin.org/en/vocabulary> [<https://perma.cc/M7FH-DSFU>]. In contrast, “bitcoin” with a lowercase “b” refers to the individual coins that users buy and sell. *Id.*

² See Marie Huillet, *11 Years Ago Today Satoshi Nakamoto Published the Bitcoin White Paper*, COINTELEGRAPH (Oct. 31, 2019), <https://cointelegraph.com/news/11-years-ago-today-satoshi-nakamoto-published-the-bitcoin-white-paper> [<https://perma.cc/T9DB-TFZM>] (noting that Satoshi Nakamoto published the “Bitcoin white paper” in 2008). See generally NAKAMOTO, *supra* note 1 (discussing Bitcoin and blockchain technology). Blockchain uses algorithms to record transactions in the specific order in which they happen. See Carol Goforth, *The Lawyer’s Cryptonary: A Resource for Talking to Clients About Crypto-Transactions*, 41 CAMPBELL L. REV. 47, 60–61 (2019) (explaining that blocks

bled splash into global consciousness spawned a rapid increase in the popularity and commercial significance of cryptocurrencies, which have vastly increased in number and variety over the past decade.³ Thousands of cryptocurrencies, with a combined market capitalization of billions of dollars, are available today.⁴ Cryptocurrencies function through a decentralized system that facilitates transactions while circumventing traditional centralized banking and financial institutions.⁵ Characterized by open-source software, armor-like encryption, and peer-to-peer blockchain technology designed to obviate the need for intermediaries, cryptocurrency represents a stark departure from an economy previously limited to heavily centralized transactions.⁶

Today, there is great diversity in the number, function, and use of cryptocurrencies.⁷ Some individuals and businesses hold cryptocurrencies as investments; they purchase a certain amount of Bitcoin, for example, and hope that

are placed into the blockchain in time order through a process that involves solving a mathematics equation). The blockchain ledger that memorializes these purely digital transactions spans a worldwide network and does not exist in any one location. *Id.* at 61–62, 88. Users can securely trade Bitcoin and other cryptocurrencies on this decentralized blockchain-based system. *See id.* at 61–62 (remarking that blockchain’s decentralized nature makes it more difficult for hackers or other forces to find points of entry).

³ *See* Eric C. Chaffee, *The Heavy Burden of Thin Regulation: Lessons Learned from the SEC’s Regulation of Cryptocurrencies*, 70 MERCER L. REV. 615, 619 (2019) (explaining that people had tried for many years to create cryptocurrencies, but that Bitcoin, which has increased in popularity over the past decade, was the first successful cryptocurrency); *Cryptocurrency*, INVESTING.COM, <https://www.investing.com/crypto/> [<https://perma.cc/2QQL-GTSL>] (providing a list of current cryptocurrencies, their price, and their share of the market).

⁴ *Cryptocurrency*, *supra* note 3. Traditionally, market capitalization refers to the value of a company’s shares of stocks on the open market or other securities. *See Understanding a Cryptocurrency’s Market Cap*, COINIST, <https://www.coinist.io/cryptocurrency-market-cap/> [<https://perma.cc/9RXP-SQBM>] (noting that market capitalization is widely used in reference to conventional securities); *Understanding Market Capitalization*, FIDELITY, <https://www.fidelity.com/learning-center/trading-investing/fundamental-analysis/understanding-market-capitalization> [<https://perma.cc/2PUS-G7E3>] (defining market capitalization as the value of a company’s shares of stock, and explaining that market capitalization is used to compare the sizes of companies). Regarding cryptocurrencies, experts calculate market capitalization by taking the total supply of a cryptocurrency’s tokens and multiplying it by the current price of the tokens. *Id.*

⁵ Randolph A. Robinson II, *The New Digital Wild West: Regulating the Explosion of Initial Coin Offerings*, 85 TENN. L. REV. 897, 906–07 (2018) (analyzing the novel decentralization of blockchain technology and peer-to-peer transactions).

⁶ *Id.* Open-source software refers to computer codes that the public can access and edit. *What Is Open Source?*, OPENSOURCE.COM, <https://opensource.com/resources/what-open-source> [<https://perma.cc/6QGK-H95B>].

⁷ *The Cryptocurrency Market Is Growing Exponentially*, MIT TECH. REV.: EMERGING TECH. FROM ARXIV (May 29, 2017), <https://www.technologyreview.com/s/607947/the-cryptocurrency-market-is-growing-exponentially/> [<https://perma.cc/2JXF-GC9C>] (explaining that the cryptocurrency market is rapidly growing, that there are many cryptocurrencies other than Bitcoin, and that users do not solely use cryptocurrencies as currency).

the value of the coins that they hold increases over time.⁸ Others accept or use cryptocurrencies as payment for goods and services.⁹ Furthermore, some creditors take security interests in cryptocurrency assets to protect themselves in case their debtors default on loan obligations.¹⁰

Cryptocurrencies are just over a decade old, but their growing importance in the global market and the current lack of inter-agency regulatory consensus around characterizing them has led many to call for comprehensive and uniform regulations to address these intangible assets.¹¹ The Securities and Exchange Commission (SEC), Internal Revenue Service (IRS), and Commodity Futures Trading Commission (CFTC) have each attempted to regulate cryptocurrency.¹² Significantly, the general novelty of cryptocurrencies and lack of

⁸ See Kyleen Prewett et al., *A Primer on Taxation of Investment in Cryptocurrencies*, 36 J. TAX'N INVS., Summer 2019, at 2–3 (explaining that people increasingly consider cryptocurrencies to be investments, rather than solely as mediums of exchange).

⁹ See Kayla Sloan, *7 Major Companies That Accept Cryptocurrency*, DUE (Jan. 31, 2018), <https://due.com/blog/7-companies-accept-cryptocurrency/> [<https://perma.cc/TS86-RTC4>], *republished in* NASDAQ (Jan. 31, 2018), <https://www.nasdaq.com/articles/7-major-companies-accept-cryptocurrency-2018-01-31> [<https://perma.cc/XG4R-K48P>] (providing a list of companies, including Overstock.com and Expedia, that accept cryptocurrency payments). “Bitcoin Pizza Day” celebrates the first widely known consumer transaction made via Bitcoin. *Meet the Man Who Spent Millions Worth of Bitcoin on Pizza*, CBS NEWS: 60 MINUTES OVERTIME (May 16, 2019), <https://www.cbsnews.com/news/meet-the-man-who-spent-millions-worth-of-bitcoin-on-pizza-60-minutes-2019-05-16/> [<https://perma.cc/D6R2-UUHR>]. On May 22, 2010, Laszlo Hanyecz spent ten thousand bitcoins on two pizzas from Papa Johns. Molly Jane Zuckerman, *Bitcoin Pizza Guy: Laszlo Hanyecz on Why Bitcoin Is Still the Only Flavor of Crypto for Him*, COINTELEGRAPH (May 27, 2018), <https://cointelegraph.com/news/bitcoin-pizza-guy-laszlo-hanyecz-on-why-bitcoin-is-still-the-only-flavor-of-crypto-for-him> [<https://perma.cc/7USD-JVQK>]. As of May 2019, one bitcoin was worth about \$8,000, although it was worth less than a penny on the date that Hanyecz bought his pizzas. *Meet the Man Who Spent Millions Worth of Bitcoin on Pizza*, *supra*. If Hanyecz had kept his Bitcoin, and not spent it on pizza, they would now be worth about \$800 million. *Id.*

¹⁰ Kevin V. Tu, *Crypto-Collateral*, 21 SMU SCI. & TECH. L. REV. 205, 208 (2018) (introducing the growing role of cryptocurrency assets as collateral in secured transactions).

¹¹ See Chaffee, *supra* note 3, at 619–20 (noting that Bitcoin emerged in 2009 and that the subsequent growth in cryptocurrency use has challenged regulatory bodies); Dennis Chu, Note, *Broker-Dealers for Virtual Currency: Regulating Cryptocurrency Wallets and Exchanges*, 118 COLUM. L. REV. 2323, 2324 (2018) (explaining that the growth of cryptocurrencies and the platforms on which users trade them prompts regulatory questions); Shaya Rochester & Lindsay Lersner, *What Happens When Crypto Meets Insolvency*, LAW360 (Feb. 7, 2019), <https://www.law360.com/articles/1116999/what-happens-when-crypto-meets-insolvency> [<https://perma.cc/KYE3-Z4LP>] (noting that there will be a significant increase in cryptocurrency-related litigation). *But see* Ariel Deschappell, *Why Regulating Bitcoin Won't Work*, COINDESK (Feb. 25, 2014), <https://www.coindesk.com/why-regulating-bitcoin-will-not-work> [<https://perma.cc/Z9B2-85A3>] (arguing that government regulation of cryptocurrencies will stifle cryptocurrency development and that it will not deter the cryptocurrency-related crimes that governments seek to prevent).

¹² See Commodity Futures Trading Comm'n v. My Big Coin Pay, Inc., 334 F. Supp. 3d 492, 498 (D. Mass. 2018) (holding that the Commodity Futures Trading Commission (CFTC) had sufficiently alleged that cryptocurrencies were commodities); Chaffee, *supra* note 3, at 620–26 (exploring the Securities and Exchange Commission's (SEC) efforts to regulate cryptocurrencies);—Aaron Hsieh, Note, *The Faceless Coin: Achieving a Modern Tax Policy in the Changing Landscape of Cryptocurrency*, 2019 U. ILL. L. REV. 1079, 1080 (discussing the Internal Revenue Service's (IRS) current vir-

consensus as to their legal status pose complex challenges for bankruptcy courts, especially in the context of asset valuation.¹³

Cryptocurrencies' volatile nature makes valuation—the process of determining the cash value of an asset in bankruptcy—extremely difficult.¹⁴ Confusion surrounding the value of a cryptocurrency asset, combined with the lack of a regulatory consensus on cryptocurrencies and the increasing number of parties holding cryptocurrency assets, creates uncertainty in bankruptcy proceedings that involve cryptocurrencies.¹⁵ Although the CFTC recently classified cryptocurrencies as commodities, bankruptcy courts still grapple with the question of whether to similarly classify cryptocurrencies as commodities or as currencies under the Bankruptcy Code (the Code).¹⁶ The Code does not provide bankruptcy-specific definitions for currency or commodity, so bankruptcy

tual currency regulations and proposing modifications to the IRS's reporting requirements so that they better align with the modern era of cryptocurrencies). See generally Lawrence J. Trautman, *Bitcoin, Virtual Currencies, and the Struggle of Law and Regulation to Keep Pace*, 102 MARQ. L. REV. 447 (2019) (listing several different examples of CFTC enforcement and regulation activities regarding cryptocurrencies). Many do not desire increased regulation for cryptocurrencies, however. See Pawel Kuskowski, *Why Regulating Cryptocurrencies as Securities Would Stifle Growth*, FORBES (Aug. 1, 2018), <https://www.forbes.com/sites/pawelkuskowski/2018/08/01/why-regulating-cryptocurrencies-as-securities-would-stifle-growth/#6c3a60e3242b> [<https://perma.cc/ZJF8-97KB>] (arguing that SEC regulation of cryptocurrencies, rather than their technology or their intermediaries, would hinder growth).

¹³ Andrew Helman & Carl Wedoff, *When Blockchain Meets Article 9 and Bankruptcy*, LAW360 (Feb. 9, 2018), <https://www.law360.com/articles/1011153/when-blockchain-meets-article-9-and-bankruptcy> [<https://perma.cc/6GS3-6U5H>] (concluding that cryptocurrencies represent a novel evolution in the market and that bankruptcy courts are likely to encounter these assets and their volatile values with greater frequency).

¹⁴ See Jorge Galavis, *Blame It on the Blockchain: Cryptocurrencies Boom Amidst Global Regulations*, 26 U. MIA. INT'L & COMPAR. L. REV. 561, 566–67 (2019) (detailing the inherent volatility of cryptocurrencies as compared to traditional currencies); Chu, *supra* note 11, at 2344–46 (analyzing the valuation problems that bankruptcy courts and cryptocurrency-holders involved in bankruptcy proceedings face due to cryptocurrencies' volatility); Erin Illman & Robert Cox, *Bitcoin: A New, Volatile Asset in Bankruptcy*, LAW360 (Mar. 13, 2018), <https://www.law360.com/articles/1021276/bitcoin-a-new-volatile-asset-in-bankruptcy> [<https://perma.cc/ZV6R-N6FR>] (tracing bitcoin's dramatic rise to \$20,000 and quick crash to \$7,000 over a two-week period in 2018 and noting the problems this volatility poses for valuation in bankruptcy).

¹⁵ See Mathew D. Rayburn, Note, *Bitcoin When the Bank Breaks: Uncertainty in the Treatment of Bitcoin & Other Cryptocurrencies in the Face of Bankruptcy*, 16 N.Y.U. J.L. & BUS. 257, 267–68 (2019) (discussing the problems posed by the lack of regulatory consensus, cryptocurrencies' volatility, and the growing number of parties with bankruptcy assets).

¹⁶ See United States Bankruptcy Code, 11 U.S.C. §§ 101–1532 (providing the substantive, federal law that governs all bankruptcy proceedings); *My Big Coin Pay*, 334 F. Supp. 3d at 498 (finding that My Big Coin, a cryptocurrency, was a commodity because Bitcoin, which has a futures trading market, is a commodity); Joanne Lee Molinaro & Susan Poll Klaessy, *Crypto as Commodity, and the Bankruptcy Implications*, LAW360 (Oct. 17, 2018), <https://www.law360.com/articles/1093091/crypto-as-commodity-and-the-bankruptcy-implications> [<https://perma.cc/KDS3-BMWK>] (discussing the potential impact of the classification of cryptocurrencies as commodities in *Commodity Futures Trading Commission v. My Big Coin Pay, Inc.*).

courts must look elsewhere for an answer.¹⁷ If bankruptcy courts were to embrace the CFTC's commodity classification for cryptocurrencies, they would greatly reduce the need for costly valuation battles in many bankruptcy proceedings, although doing so would not eliminate the valuation struggle entirely.¹⁸

Bankruptcy courts are increasingly likely to encounter cryptocurrency assets in the coming years, which will require bankruptcy courts to understand cryptocurrencies and the unique struggles they pose in bankruptcy proceedings.¹⁹ Part I of this Note discusses cryptocurrencies, their commercial role, and their various classifications.²⁰ Part II covers the current handling of cryptocurrencies in bankruptcy, the general importance of valuation protocols in bankruptcy proceedings, and the bankruptcy trustee's power to avoid preferential and fraudulent transfers.²¹ Part III delves into the complexities of attributing value to cryptocurrencies in bankruptcy, the debate over whether to classify cryptocurrencies as commodities or currencies, and how these issues interact with fraudulent and preferential transfers.²² Part IV argues that bankruptcy courts should classify cryptocurrencies as commodities to simplify proceedings and reduce the confusion that cryptocurrencies' volatility causes.²³ Part IV further posits that in cases where the commodity classification does not eliminate valuation struggles—such as when cryptocurrency assets are lost or stolen and the trustee cannot recover them through its avoidance powers—bankruptcy courts should value cryptocurrency assets based on the cryptocurrency's value on the date of the debtor's petition for bankruptcy.²⁴

¹⁷ See Rochester & Lersner, *supra* note 11 (noting that the Bankruptcy Code (the Code) does not provide definitions for currency or commodity).

¹⁸ Joanne Molinaro & Susan Poll Klaessy, *Bitcoin as a "Commodity" and the Resulting Impact on Bankruptcy Proceedings*, AM. BAR ASS'N (Mar. 5, 2019), <https://www.americanbar.org/groups/litigation/committees/woman-advocate/articles/2019/winter2019-bitcoin-as-a-commodity-and-the-resulting-impact-on-bankruptcy-proceedings/> [<https://perma.cc/KW9E-9MAW>] (observing that a commodity classification will permit the trustee to recover the cryptocurrency itself rather than its value, which means that the parties would not have to determine the value of a cryptocurrency asset unless for some reason it cannot be recovered). Other situations in which cryptocurrency valuation issues might arise include collateral and claim assessment procedures. See *id.* (concluding that "the valuation of cryptocurrency—whether as collateral, damages, or claim distribution—will become a pivot point in such a proceeding").

¹⁹ See Goforth, *supra* note 2, at 50–51 (suggesting that more lawyers will encounter cryptocurrencies in the future); Rayburn, *supra* note 15, at 258–59 (identifying the growing popularity of cryptocurrencies as a reason why bankruptcy courts should be prepared to handle these challenges); Rochester & Lersner, *supra* note 11 (explaining that the quick increase of cryptocurrency use in the market poses new challenges for bankruptcy proceedings).

²⁰ See *infra* notes 25–79 and accompanying text.

²¹ See *infra* notes 80–103 and accompanying text.

²² See *infra* notes 104–212 and accompanying text.

²³ See *infra* notes 213–269 and accompanying text.

²⁴ See *infra* notes 213–269 and accompanying text.

I. THE COMMERCIAL SIGNIFICANCE OF CRYPTOCURRENCY

Before diving into the complex realm of bankruptcy and its treatment of cryptocurrencies, it is necessary first to understand the unique structure and function of cryptocurrencies in today's market.²⁵ Cryptocurrencies are a relatively young category of asset and their novel technology and nascent market distinguish them from other assets: a uniqueness that gives rise to complex problems.²⁶ The cryptocurrency landscape is further complicated by the large number and variety of cryptocurrencies in existence.²⁷

Section A of this Part introduces the distinct characteristics of cryptocurrencies, made possible by revolutionary blockchain technology.²⁸ Section B then explains cryptocurrency exchanges and examines issues of fraud surrounding the transactions that take place on these exchanges.²⁹ Section C details the struggle to classify and regulate cryptocurrencies, a challenge that the novelty of cryptocurrency technology engenders.³⁰

A. Bitcoin and Other Cryptocurrencies

Cryptocurrencies are digital units of value that individuals and businesses often use as mediums of exchange and, increasingly, as investment vehicles.³¹ There are currently thousands of cryptocurrencies in existence.³² These crypto-

²⁵ See Goforth, *supra* note 2, at 51 (delineating the importance of informed lawyers in successfully advising clients who are interested in cryptocurrency transactions); Andrew W. Balthazor, Comment, *The Challenges of Cryptocurrency Asset Recovery*, 13 FIU L. REV. 1207, 1210–11 (2019) (explaining that an understanding of cryptocurrency basics is essential to assessing related issues, such as asset recovery).

²⁶ See Balthazor, *supra* note 25, at 1211 (noting that challenges arise when “[t]he properties of cryptocurrencies and the characteristics of cryptocurrency cases work in concert to make it difficult to recover these novel assets”); Helman & Wedoff, *supra* note 13 (discussing the benefits of these new digital assets and how they might be handled in commercial law differently than other assets).

²⁷ See Helman & Wedoff, *supra* note 13 (observing that cryptocurrencies’ “increased integration into the broader economy ensures that commercial law and bankruptcy practitioners should be prepared to address a host of novel issues cryptocurrency presents”); *All Cryptocurrencies*, COINMARKETCAP, <https://coinmarketcap.com/all/views/all/> [<https://perma.cc/35HP-TCX6>] (providing a list of all current cryptocurrencies, which number in the thousands).

²⁸ See *infra* notes 31–52 and accompanying text.

²⁹ See *infra* notes 53–67 and accompanying text.

³⁰ See *infra* notes 68–79 and accompanying text.

³¹ 2 FREDERICK M. HART ET AL., NEGOTIABLE INSTRUMENTS UNDER THE UNIFORM COMMERCIAL CODE § 25.01 (2d ed. 2020), Lexis (noting that cryptocurrencies fulfill the “medium of exchange” role of traditional money); Galavis, *supra* note 14, at 566 (expressing cryptocurrency-users’ view that cryptocurrencies’ volatility renders them better investments than holders of stable value); Prewett et al., *supra* note 8 (explaining that cryptocurrencies are increasingly viewed as investments, rather than solely as mediums of exchange).

³² *Cryptocurrencies*, INSIDER: MKTS. INSIDER, <https://markets.businessinsider.com/cryptocurrencies> [<https://perma.cc/JH57-V69E>]. The rise of cryptocurrency in commercial consciousness skyrocketed in 2017, fueled by the ingenuity of young companies seeking ever-more capital to fund their fledgling ventures. Paul Vigna, *What’s an Initial Coin Offering? ICOs Explained in 11 Questions*, WALL ST. J.

currencies have varying functions and goals, but most share several core attributes.³³ Unlike traditional units of exchange, such as the U.S. dollar, cryptocurrencies are neither issued by a central bank nor pegged to the existing currency of any government.³⁴ Cryptocurrencies have no value in and of them-

(Oct. 2, 2017), <https://www.wsj.com/articles/whats-an-initial-coin-offering-icos-explained-in-11-questions-1506936601> [<https://perma.cc/4FR3-WPST>]. Similar in many ways to an initial public offering (IPO) for stocks, an initial coin offering (ICO) marks a new cryptocurrency's initial market appearance, making it available for public purchase and exchange. *Id.* In contrast to IPOs, however, ICOs do not involve stocks, and they allow companies to bypass venture capital firms. *Id.* The initiation of a decentralized autonomous organization (DAO) on the Ethereum network in 2016 spurred this surge in ICOs. Usha R. Rodrigues, *Law and the Blockchain*, 104 IOWA L. REV. 679, 680–81 (2019). A DAO is a decentralized organization that operates through the type of smart contracts that Ethereum made possible. Samuel Falkon, *The Story of the DAO—Its History and Consequences*, MEDIUM (Dec. 24, 2017), <https://medium.com/swlh/the-story-of-the-dao-its-history-and-consequences-71e6a8a551ee> [<https://perma.cc/TY3T-HFZ3>]. The DAO that initiated the rise of ICOs was the Genesis Dao. *Id.* This DAO sold tokens that gave the purchasers the ability to vote on which projects the DAO would pursue, raising \$150 million within the first several months of its ICO. Rodrigues, *supra*, at 680–81; Falkon, *supra*. Although the DAO quickly failed due to a coding error, its swift accumulation of capital spawned a new class of start-ups seeking to raise funds through ICOs. *See* Rodrigues, *supra*, at 681 (recounting how the DAO quickly raised millions of dollars and subsequently failed, and how this led to 235 ICOs by other companies in 2017); Falkon, *supra* (recounting how the DAO collapsed after a hacker identified and exploited a weakness in its code).

³³ *Commodity Futures Trading Comm'n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 497–98 (D. Mass. 2018) (holding that cryptocurrencies are commodities and thus that different cryptocurrencies can all be regulated in the same way); *see Galavis, supra* note 14, at 563 (observing that cryptocurrencies, as a class, come from blockchain technology); Balthazor, *supra* note 25, at 1211 (noting that Bitcoin and other cryptocurrency technology share similar aspects); Lucho Poletti, *Cryptocurrency Basics—3 Key Characteristics and Why They Matter*, MEDIUM (Apr. 9, 2018), <https://medium.com/datadriveninvestor/cryptocurrency-basics-3-key-characteristics-and-why-they-matter-7348242abe18> [<https://perma.cc/485U-UF9M>] (explaining three basic characteristics shared by most cryptocurrencies: (1) they do not rely on a central intermediary; (2) transactions involving cryptocurrencies are irreversible; and (3) cryptocurrencies are built on decentralized blockchain technology); Rochester & Lersner, *supra* note 11 (grouping together cryptocurrencies in order to discuss their treatment as a whole in the bankruptcy context). These commonalities are why regulators and courts can generally treat most cryptocurrencies in the same way. *See My Big Coin Pay*, 334 F. Supp. 3d at 498 (holding that because one cryptocurrency acts like a commodity, other cryptocurrencies are also commodities). One of the differences between cryptocurrencies is the distinction between “stablecoins” and “untethered cryptocurrencies.” Rochester & Lersner, *supra* note 11. Stablecoins are “tied to an asset such as fiat currency” that connects them to some sort of inherent value, whereas untethered cryptocurrencies, such as Bitcoin, have value only because of supply and demand. *Id.* This Note focuses solely on untethered cryptocurrencies, although stablecoins pose their own interesting insolvency questions. *See id.* (noting that because stablecoins connect to a physical asset, bankruptcy courts often must determine who owns that linked asset).

³⁴ HART ET AL., *supra* note 31, § 25.01; Chaffee, *supra* note 3, at 618; Rochester & Lersner, *supra* note 11 (explaining that cryptocurrencies are “digital representation[s] of value” that do not come from any government or central bank). Cryptocurrency is “a medium of exchange, created and stored electronically in the blockchain, using encryption techniques to control the creation of monetary units and to verify the transfer of funds.” *Making Sense of Bitcoin, Cryptocurrency and Blockchain*, PWC, <https://www.pwc.com/us/en/industries/financial-services/fintech/bitcoin-blockchain-cryptocurrency.html> [<https://perma.cc/NU2Y-RQNC>] (providing a brief overview of cryptocurrency and blockchain technology). Just because cryptocurrencies are not government-backed currencies in the traditional sense does not mean, however, that central governments cannot offer their own cryptocurrencies. *See*

selves; their value is not tied to that of gold, any other physical commodity, or to a government's assurance of full faith and credit, such as is the case for the U.S. dollar.³⁵ Lacking a physical manifestation or inherent value, cryptocurrencies exist solely because of a "decentralized ledger," which is a digital network spread across many computers.³⁶ Along with blockchain technology, this decentralized ledger permits parties to record and verify global cryptocurrency transactions without relying on a centralized banking or financial institution as an intermediary.³⁷

There are many cryptocurrencies, although Bitcoin is one of the most popular.³⁸ Bitcoin emerged into global consciousness a decade ago when

Mike Orcutt, *A Tiny Pacific Island Nation Is About to Issue Its Own Cryptocurrency*, MIT TECH. REV. (Sept. 5, 2019), <https://www.technologyreview.com/f614271/a-tiny-pacific-island-nation-is-about-to-issue-its-own-cryptocurrency/> [<https://perma.cc/VR3K-SY6U>] (detailing how the Marshall Islands plans to issue its own cryptocurrency). Venezuela attempted to introduce the petro, a government-issued cryptocurrency, and the Republic of the Marshall Islands reported plans to offer its own cryptocurrency, the Marshalllese Sovereign. *Id.* In fact, many expect the United States to one day jump on the cryptocurrency bandwagon and issue a "fedcoin," the nickname given to the potential United States cryptocurrency. Campbell R. Harvey, *Bitcoin Is Big. But Fedcoin Is Bigger*, WASH. POST (Dec. 18, 2017), https://www.washingtonpost.com/opinions/bitcoin-is-big-but-fedcoin-is-bigger/2017/12/18/53e2e79a-e1b8-11e7-89e8-edec16379010_story.html [<https://perma.cc/B84S-WG6J>] (speculating about the possibility of a United States-issued cryptocurrency).

³⁵ CRAIG K. ELWELL, CONG. RSCH. SERV., R41887, BRIEF HISTORY OF THE GOLD STANDARD IN THE UNITED STATES 1–2 (2011) (explaining that although the United States' assurance of full faith and credit is now the only system backing the United States Dollar, the dollar was backed by a gold or silver standard for much of its history); *Making Sense of Bitcoin, Cryptocurrency and Blockchain*, *supra* note 34; see Goforth, *supra* note 2, at 82–83 (explaining that U.S. dollars are backed by the U.S. government and that this backing, rather than an underlying asset like gold, gives them their value). In this sense, scholars have said, cryptocurrencies function much more like gold itself than like a currency backed by gold or by a government. See *Commodity Futures Trading Comm'n v. McDonnell*, 287 F. Supp. 3d 213, 224 (E.D.N.Y. 2018) (exploring the scholarly discussion of cryptocurrencies as currencies or commodities and observing that cryptocurrencies share many similarities to other commodities).

³⁶ Chaffee, *supra* note 3, at 618 (explaining that cryptocurrencies are virtual and that they exist upon a "decentralized ledger" that records transactions across networks); Balthazor, *supra* note 25, at 1212 (explaining that bitcoins, "[t]he units of exchange of the Bitcoin system," have a purely digital existence); Chu, *supra* note 11, at 2326–27 (noting that Bitcoin is just one of many cryptocurrencies, and that in general, cryptocurrencies are "digital assets recorded on a decentralized blockchain").

³⁷ Chaffee, *supra* note 3, at 618; see *infra* notes 46–52 and accompanying text (discussing the mechanics of blockchain technology). Blockchain technology refers to this decentralized ledger system. Chu, *supra* note 11, at 2326. Blockchain facilitates and records cryptocurrency transactions. *Id.*

³⁸ Rochester & Lersner, *supra* note 11. Other dominant cryptocurrencies include ether, built on the Ethereum network, and Ripple's XRP. HART ET AL., *supra* note 31, §§ 25.01, 21.05; Goforth, *supra* note 2, at 75–76. Ether coins operate much like bitcoins, but they function on the Ethereum network rather than the Bitcoin network. HART ET AL., *supra* note 31, § 25.05. The Ethereum network extends blockchain technology beyond virtual transactions. Goforth, *supra*, at 71. For example, Ethereum permits users to enter into "smart contracts," which are digital contracts that automatically update parties' obligations. See HART ET AL., *supra* note 31, § 25.05 (describing smart contracts as "agreements that are expressed in computer code" that "operate autonomously"); Vinay Gupta, *A Brief History of Blockchain*, HARV. BUS. REV. (Feb. 28, 2017), <https://hbr.org/2017/02/a-brief-history-of-blockchain> [<https://perma.cc/J6NS-57KG>] (explaining that Ethereum's novel innovation is

Satoshi Nakamoto, an elusive, unidentified entity, published a paper that introduced Bitcoin and blockchain technology.³⁹ Although Bitcoin was not the first virtual currency, it was the first to utilize blockchain technology.⁴⁰ Bitcoin still dominates the cryptocurrency market over a decade later.⁴¹ Since its inception in the late 2000s, Bitcoin has grown into a global multi-billion-dollar technology that both businesses and everyday consumers use to buy, sell, and invest in goods and services.⁴²

The revolutionary idea driving Bitcoin was using blockchain technology for a “peer-to-peer version of electronic cash” that prevents fraudulent “double-spending” without requiring the oversight of a centralized intermediary, such as a bank, to police financial transactions.⁴³ Peer-to-peer transactions refer to the direct, decentralized transactions enabled by the Bitcoin technology.⁴⁴ Double-spending refers to the risk, inherent in peer-to-peer transactions, that a party will use the same value already spent in one transaction for a sec-

its smart contract capabilities). Ripple is based on a different algorithm than Bitcoin and is much less decentralized. See Mike Orcutt, *No, Ripple Isn't the Next Bitcoin*, MIT TECH. REV. (Jan. 11, 2018), <https://www.technologyreview.com/s/609958/no-ripple-isnt-the-next-bitcoin/> [<https://perma.cc/MR2C-VGQC>] (recounting arguments that Ripple is not a true cryptocurrency because the “novel consensus algorithm” on which it is based is not decentralized in the same way that Bitcoin’s underlying algorithm is).

³⁹ Lee, *supra* note 1, at 83 (recalling the Satoshi Nakamoto paper and Bitcoin’s materialization in 2008). See generally NAKAMOTO, *supra* note 1 (introducing Bitcoin and the underlying blockchain technology that made it possible).

⁴⁰ HART ET AL., *supra* note 31, § 25.04 (noting that Digicash, which is no longer in existence, was the first digital currency). Blockchain technology consists of a network-wide recording and verification system that uses algorithms to eliminate the need for a central verifier of transactions. *Id.* § 25.02.

⁴¹ See Lee, *supra* note 1, at 83–85 (detailing Bitcoin’s significant impact on society—from spurring government investigations to becoming widespread in retail transactions—since it first emerged in 2008); Rochester & Lersner, *supra* note 11 (noting that Bitcoin is one of the most publicized and popular cryptocurrencies).

⁴² See Goforth, *supra* note 2, at 58 (noting that in 2018, “the total capitalization of Bitcoin was just over \$146 Billion”); Sloan, *supra* note 9 (providing a list of seven other companies that accepted Bitcoin and other cryptocurrencies as of January 2018).

⁴³ NAKAMOTO, *supra* note 1, at 1; Robinson, *supra* note 5, at 909–10. Decentralization means that rather than relying on a bank or other go-between, the blockchain allows for a system in which parties can move value directly between themselves. Lee, *supra* note 1, at 82. Scholars have compared the blockchain innovation to that of email, explaining that email similarly obviated the need for an intermediary, such as the post office, to transfer physical letters between parties. See *id.* (comparing blockchain technology to email by explaining that “[t]his disruptive technology has done for money transfers what email did for sending mail—by removing the need for a trusted third party just as email removed the need for using the post office to send mail”).

⁴⁴ See HART ET AL., *supra* note 31, § 25.02 (identifying a peer-to-peer network as one of the central components of blockchain technology). In the peer-to-peer blockchain ecosystem, each computer (or user) in the network represents a peer, and each peer can interact with others without the need to first pass through some centralized system or database. *Id.*

ond transaction, even though the party, having transferred it already, no longer possesses that value.⁴⁵

Blockchain technology consists of a decentralized or “distributed ledger,” a peer-to-peer system for tracking and recording transactions spread across computers worldwide.⁴⁶ Blockchain eliminates the risk of double-spending by placing each series of transactions into a block, and then timestamping and incorporating the blocks in time order into a larger chain of all of the blocks in the ledger.⁴⁷ Each block is irreversibly connected by a “proof-of-work” protocol, the process by which a computer must solve a complex puzzle to authenticate each transaction and add it to the growing blockchain.⁴⁸ The proof-of-work authentication process, which requires extremely powerful computers, is known as “mining.”⁴⁹ The difficulty of validating transactions lends itself to an incredibly secure network.⁵⁰ Despite this difficulty, miners are encouraged to continue mining because this is the process that produces new bitcoins.⁵¹ The mining system has been structured, however, so that there can never be more than twenty-one million bitcoins in existence.⁵²

⁴⁵ Robinson, *supra* note 5, at 910 (defining double-spending as a problem that had previously prevented decentralized systems because of the risk that, without a central policing institution, one party would spend the digitized unit of value in multiple transactions); *Glossary*, BITCOIN, <https://developer.bitcoin.org/glossary.html> [<https://perma.cc/5KHJ-KLJE>] (defining double spending as “[a] transaction that uses the same input as an already broadcast transaction,” which is an “attempt of duplication, deceit, or conversion”).

⁴⁶ HART ET AL., *supra* note 31, § 25.02 (defining “distributed ledger” as “a decentralized means of recording individual transactions”).

⁴⁷ NAKAMOTO, *supra* note 1, at 2–3 (describing how the proof-of-work protocol will timestamp transactions and prevent double-spending); Chu, *supra* note 11, at 2326 (detailing how the irreversible nature of a blockchain transaction prevents a party from “transferring the same cryptocurrency twice”). In addition to preventing double spending, the benefits of decentralization include heightened resistance to hacking attempts and increased difficulty of government censorship. Lee, *supra* note 1, at 92, 106.

⁴⁸ HART ET AL., *supra* note 31, § 25.04; NAKAMOTO, *supra* note 1, at 3.

⁴⁹ HART ET AL., *supra* note 31, § 25.04; NAKAMOTO, *supra* note 1, at 4.

⁵⁰ HART ET AL., *supra* note 31, § 25.04; Orcutt, *supra* note 38.

⁵¹ HART ET AL., *supra* note 31, § 25.01; Orcutt, *supra* note 38.

⁵² HART ET AL., *supra* note 31, § 25.04. Bitcoin developers designed mining to be an expensive and technologically labor-intensive process to make bitcoins scarce like gold. CryptoDec, *Why Saying ‘Blockchain Not Bitcoin’ Is Missing the Point*, MEDIUM (May 28, 2019), https://medium.com/@declan_70550/why-saying-blockchain-not-bitcoin-is-missing-the-point-a9f8656eae79 [<https://perma.cc/H4MV-ZJE5>]. The limit to the number of bitcoins available also mimics hard currencies with regard to inflation, another purposeful detail of Bitcoin’s design. *Id.* Although it was originally created to enable Bitcoin, other cryptocurrencies and transactions now utilize blockchain technology as well. See Gupta, *supra* note 38 (explaining that although blockchain first appeared with Bitcoin, its uses soon expanded beyond Bitcoin and other virtual currencies). Blockchain’s broad applicability quickly led to widespread use and study by financial institutions and banks. *Id.* For example, Walmart uses blockchain technology in its efforts to battle food-borne diseases such as *E. coli*, and the healthcare industry employs blockchain technology in its efforts to address drug supply chain issues. CPA.COM, 2019 BLOCKCHAIN SYMPOSIUM 3–4, (2019) <https://www.cpa.com/sites/cpa/files/2019-12/2019-blockchain-symposium-report.pdf> [<https://perma.cc/7BFS-6WXC>]. Blockchain’s decentralization might also provide a solu-

B. Private Keys, Wallets, and Exchanges: Cryptocurrency's Vulnerability to Theft and Loss

A “private key” is a special code that permits users to access the publicly available blockchain ledger, enabling cryptocurrency ownership.⁵³ It is a series of numbers and letters that is randomly generated when each user first purchases a cryptocurrency.⁵⁴ A private key enables a cryptocurrency owner to conduct cryptocurrency transactions, which occur when the owner accesses the blockchain and records the transaction.⁵⁵ Without the private key, no one can spend or exchange the cryptocurrency.⁵⁶ The benefit of the private key is that it is truly private—no known technology can decode the private key’s random, unique code unless the code is revealed by its holder.⁵⁷ The flaw of the private key security system, however, is that a key’s owner cannot recover the key if it is lost, misplaced, or stolen.⁵⁸ Experts place the dollar amount of cryptocurrencies lost or stolen in the second quarter of 2019 at \$4.26 billion, much of which disappeared as a result of insider thefts, exit scams, and hacking efforts.⁵⁹

Ownership of a private key typically involves a cryptocurrency “wallet,” which is a service that cryptocurrency owners use to store and protect their cryptocurrency assets.⁶⁰ Furthermore, cryptocurrency exchanges, such as Coinbase, Kraken, Bitstamp, and Bitpanda provide owners with markets in

tion to the censorship and hacking problems that plague the internet’s current centralized website-naming system. Mike Orcutt, *The Ambitious Plan to Reinvent How Websites Get Their Names*, MIT TECH. REV. (June 4, 2019), <https://www.technologyreview.com/s/613446/the-ambitious-plan-to-make-the-internets-phone-book-more-trustworthy/> [<https://perma.cc/L8J9-W4W7>].

⁵³ Chu, *supra* note 11, at 2326. The private key is a type of cryptography that acts much in the same way as a physical key, enabling the cryptocurrency user to access their cryptocurrency. Jake Frankenfield, *Private Key*, INVESTOPEDIA (June 29, 2020), <https://www.investopedia.com/terms/p/private-key.asp> [<https://perma.cc/5A6W-KRQD>] (comparing the cryptocurrency storage to a mailbox and the private key to the key that unlocks the mailbox).

⁵⁴ Harsh Agrawal, *Bitcoin Private Keys: Everything You Need to Know*, COINSUTRA (Apr. 1, 2021), <https://coinsutra.com/bitcoin-private-key/> [<https://perma.cc/C32W-L23N>] (explaining that a private key is a “secret, alphanumeric password” that is protected by its “randomness and uniqueness”).

⁵⁵ *Id.* (explaining that private keys enable their owners to make Bitcoin transactions).

⁵⁶ Balthazor, *supra* note 25, at 1215–16.

⁵⁷ *Id.*; Frankenfield, *supra* note 53 (noting that the private key is necessary for the user to access cryptocurrency funds so it is important for the user to protect the key). Users deposit and receive cryptocurrency funds at a public address, also known as a public key. *Id.* A “complicated mathematical algorithm” generates the public key from the user’s private key. *Id.* This algorithm protects the private key by preventing any party from using the public key to figure out the code in the private key. *Id.* This means, however, that if the user loses the private key, the user will similarly be unable to use the key to access and transfers funds. *Id.*

⁵⁸ See Frankenfield, *supra* note 53 (explaining that a user with cryptocurrency tokens will not “be able to withdraw them without the unique private key”).

⁵⁹ CIPHERTRACE, CRYPTOCURRENCY ANTI-MONEY LAUNDERING REPORT, 2019 Q2, at 4 (2019), <https://ciphertrace.com/wp-content/uploads/2019/09/CipherTrace-Cryptocurrency-Anti-Money-Laundering-Report-2019-Q2-3.pdf> [<https://perma.cc/MB75-DRF9>].

⁶⁰ Chu, *supra* note 11, at 2327–28.

which to buy and sell their cryptocurrencies.⁶¹ These exchanges, however, are vulnerable to theft and hacking.⁶² Sometimes cryptocurrency exchanges are themselves the source of their investors' cryptocurrency losses.⁶³ The sudden death of the sole director of a large Canadian cryptocurrency exchange in late 2018 highlighted the troubles that investors sometimes encounter when entrusting their private keys to exchanges.⁶⁴ After the director's death, investors discovered that he had transferred many of their assets outside of the exchange to use in his own financial endeavors.⁶⁵ The keys to the assets that remained after these transfers were kept in a safe to which only the director knew the password.⁶⁶ Crisis-wary investors collectively raced to retrieve their assets in the wake of the director's death, upon which it became clear that the director's furtive transfers had lost the exchange \$145 million.⁶⁷

C. What Is Cryptocurrency? The Complexity of Regulatory Classification

A large part of the difficulty in designing effective regulation for cryptocurrencies arises from their lack of uniform classification.⁶⁸ The IRS classifies cryptocurrencies as property, rather than as currency, for federal taxation purposes.⁶⁹ The SEC, which regulates securities, has decided that Bitcoin, and

⁶¹ Tu, *supra* note 10, at 213; Chu, *supra* note 11, at 2328–29; *see also* BITPANDA, <https://www.bitpanda.com/en> [<https://perma.cc/85CQ-MK84>]; (offering cryptocurrency exchange services); BITSTAMP, <https://www.bitstamp.net/> [<https://perma.cc/Y4R6-8DW7>] (same); COINBASE, <https://www.coinbase.com/> [<https://perma.cc/QF3Q-J6X4>] (same); KRAKEN, <https://www.kraken.com/en-us/> [<https://perma.cc/E3DC-HQCF>] (same).

⁶² CIPHERTRACE, *supra* note 59, at 8.

⁶³ *Id.*

⁶⁴ *See* Elena Perez, *QuadrigaCX Users Lose \$190M as Speculations Over Cotton's Death Swirl*, COINTELEGRAPH (June 27, 2019), <https://cointelegraph.com/news/quadrigacx-users-lose-190m-as-speculations-over-cottens-death-swirl> [<https://perma.cc/S54U-S3ZJ>] (recounting the trouble initiated by the death of Gerald Cotton, the director of QuadrigaCX, which was one of the largest cryptocurrency exchanges in Canada).

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *See* Galavis, *supra* note 14, at 569–79 (discussing the new and quickly evolving actions of U.S. courts and regulatory bodies, such as the SEC and the IRS, to address the classification of cryptocurrency assets); *see also* *Federal Court Finds That Currencies Are Commodities*, U.S. COMMODITY FUTURES TRADING COMM'N (Oct. 3, 2018), [cftc.gov/PressRoom/PressReleases/7820-18](https://www.cftc.gov/PressRoom/PressReleases/7820-18) [<https://perma.cc/NQ7Q-6DYX>] (recounting a federal case wherein the court decided that the CFTC had jurisdiction over virtual currency transactions); *Virtual Currencies*, INTERNAL REVENUE SERV., <https://www.irs.gov/businesses/small-businesses-self-employed/virtual-currencies> [<https://perma.cc/8LKZ-3P7V>] (explaining that transactions in virtual currencies are taxable just like all property transactions). Virtual currency refers broadly to any “digital representation of value” and cryptocurrencies are a subset of virtual currencies. *Frequently Asked Questions on Virtual Currency Transactions: Q1. What Is Virtual Currency?*, INTERNAL REVENUE SERV., <https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions> [<https://perma.cc/66AJ-3J92>].

⁶⁹ *See* Lee, *supra* note 1, at 86 (explaining that the IRS classifies Bitcoin as property because this promotes investment in Bitcoin and simultaneously permits the IRS to tax it in the same way it does

Ether, another popular cryptocurrency, are not securities.⁷⁰ In general, securities include a broad range of investments in property and financial instruments, such as stocks and bonds, and typically represent the risk that the investor assumes by making the investment.⁷¹ Because Bitcoin and Ether operate via decentralized platforms, rather than through a centralized system, the risk that investors assume is not the type of risk with which the SEC is concerned.⁷² The CFTC classifies cryptocurrencies as commodities, as opposed to currencies or securities.⁷³ In general, currencies, such as the U.S. dollar, are mediums of exchange that derive their support and value from government authorities.⁷⁴ Commodities, on the other hand, include items such as wheat, corn, butter, wool, livestock, and “all services, rights, and interests . . . in which contracts for future delivery are presently or in the future dealt in.”⁷⁵ The CFTC has suc-

other property); Mary E. Maginnis, Comment, *Money for Nothing: The Treatment of Bitcoin in Section 550 Recovery Actions*, 20 U. PENN. J. BUS. L. 485, 502 (2017) (observing that the IRS has classified Bitcoin as property instead of as currency); *Virtual Currencies*, *supra* note 68 (explaining that transactions in virtual currencies such as Bitcoin and Ether are taxable just like all property transactions).

⁷⁰ Bob Pisani, *Bitcoin and Ether Are Not Securities, but Some Initial Coin Offerings May Be*, *SEC Official Says*, CNBC (June 14, 2018), <https://www.cnbc.com/2018/06/14/bitcoin-and-ethereum-are-not-securities-but-some-cryptocurrencies-may-be-sec-official-says.html> [https://perma.cc/L86K-X47X]; Rakesh Sharma, *SEC Chair Says Bitcoin Is Not a Security*, INVESTOPEDIA (June 25, 2019), <https://www.investopedia.com/news/sec-chair-says-bitcoin-not-security/> [https://perma.cc/5U7D-TB7W].

⁷¹ 1 A.A. SOMMER, JR., FEDERAL SECURITIES ACT OF 1933 § 2.01 (rev. ed. 2020), Lexis. The Securities Act of 1933 defines a “security” as “[a]ny note, stock . . . bond, . . . interest or participation in any profit-sharing agreement . . . investment contract . . . [or] any interest or instrument commonly known as a ‘security.’” Securities Act of 1933, 15 U.S.C. § 77b(a)(1) (defining a “security” for 15 U.S.C. §§ 77a–77aa).

⁷² Pisani, *supra* note 70. The SEC generally regulates transactions in which investors must cede control of their money to a “centralized third party.” *Id.* Cryptocurrencies that lack this type of intermediary are thus not securities. *Id.* Nevertheless, the SEC likely will classify as securities other cryptocurrencies that do involve some sort of centralized control. *Id.*

⁷³ *Federal Court Finds That Currencies Are Commodities*, *supra* note 68 (recounting a federal case wherein the court decided that the CFTC had jurisdiction over virtual currency transactions); *see* *Commodity Futures Trading Comm’n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 498 (D. Mass. 2018) (holding that the CFTC had sufficiently supported its assertion that the cryptocurrency in question was a commodity). Other countries are struggling with these same classification issues. *See* Artificiallawyer, *Cryptocurrencies ‘Can Be Treated as Property’—UK Courts*, ARTIFICIAL LAW. (Feb. 4, 2020), <https://www.artificiallawyer.com/2020/02/04/cryptocurrencies-can-be-treated-as-property-uk-courts/> [https://perma.cc/7BMR-69HA] (discussing recent developments in UK cryptocurrency laws). In general, currencies include all types of legal tender that some official government entity authorizes or backs and that circulate as mediums of exchange. Maginnis, *supra* note 69, at 507 (observing that most definitions of currency include a government-backing element or refer to currency as a medium of exchange). A United Kingdom court recently decided that cryptocurrency assets are real property assets. *Id.* Although also facilitating certainty in cryptocurrency business transactions, this property classification opens the door to legal remedies for those who have lost cryptocurrency assets to theft. *See id.*

⁷⁴ Goforth, *supra* note 2, at 82–83.

⁷⁵ Commodity Exchange Act, 7 U.S.C. § 1a(9) (defining commodities). Futures contracts began as a way for farmers and the purchasers of agricultural goods to protect themselves against the uncer-

cessfully argued that because cryptocurrency futures trading markets exist, cryptocurrencies fall within the CFTC's regulatory purview.⁷⁶ The CFTC's classification of cryptocurrencies as commodities is particularly relevant to bankruptcy courts, which have recognized that cryptocurrencies are either currencies or commodities but have not yet reached a definite decision between these two classifications.⁷⁷ The Code does not provide bankruptcy-specific definitions for currency or commodity, and because the Code pre-dates cryptocurrencies, it proffers scant assistance to bankruptcy courts faced with this cryptocurrency classification conundrum.⁷⁸ The classification decision is significant in the bankruptcy context because it determines the date on which the court values cryptocurrencies—a critical detail because cryptocurrency values change rapidly.⁷⁹

II. A BRIEF OVERVIEW OF BANKRUPTCY AND AVOIDABLE TRANSFERS

Cryptocurrencies' volatility and other idiosyncrasies become all the more apparent when magnified by the complexity of the federal bankruptcy process.⁸⁰ The valuation of assets—determining how much they are worth in

tainty of crop failure and agricultural price fluctuations. *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Curran*, 456 U.S. 353, 357–58 (1982). The contract allowed the parties to fix the price of the sale of the agricultural goods months in advance. *Id.* at 357. If there was a subsequent decrease in the price of the goods, for example, the contract still obligated the purchaser to buy them at the agreed-upon higher price. *Id.* As this practice grew, speculation in futures contracts—buying, selling and trading them in the hope of making a profit—also grew. *Id.* at 357–58. Eventually, official futures trading exchanges grew around the practice. *Id.* at 358–59. Realizing that the presence of these markets benefitted farmers and others dealing in commodities but that they were also vulnerable to abuse, Congress enacted the Commodity Exchange Act (CEA) in the early 1900s to regulate the practice. *Id.* 360–62. *See generally* Commodity Exchange Act, 7 U.S.C. §§ 1–27f.

⁷⁶ *See My Big Coin Pay*, 334 F. Supp. 3d at 497–98 (recounting the CFTC's successful argument that cryptocurrencies in general are commodities because Bitcoin has a futures trading market and is thus a commodity).

⁷⁷ *See Hashfast Techs. LLC v. Lowe (In re Hashfast Techs. LLC)*, No. 14-30725DM, slip op. at 1–2 (Bankr. N.D. Cal. 2016) (explaining that cryptocurrencies are either currencies or commodities in the bankruptcy context but declining to decide which classification applies); Molinaro & Klaessy, *supra* note 18 (noting the lack of definitive bankruptcy decisions on whether cryptocurrencies are currencies or commodities under the Code).

⁷⁸ Maginnis, *supra* note 69, at 503; Rochester & Lersner, *supra* note 11. For commodities, the Code simply defers to the definition of a commodity in section 1(a)(9) of the Commodity Exchange Act. United States Bankruptcy Code, 11 U.S.C. § 761(8) (providing that “commodity” under the Code has the same meaning as in the Commodity Exchange Act); *see* 7 U.S.C. § 1a(9) (defining commodity).

⁷⁹ *See* Molinaro & Klaessy, *supra* note 18 (discussing the importance of cryptocurrency valuation in bankruptcy courts).

⁸⁰ Rochester & Lersner, *supra* note 11. A large part of this complexity derives from the Code's struggle to balance two competing and incompatible objectives. KEVIN M. LEWIS, CONG. RSCH. SERV., R45137, BANKRUPTCY BASICS: A PRIMER 1 (2018) (explaining that the Code must balance the competing interests of both debtors and creditors). In one vein, the Code aims to help struggling individuals and companies discharge or reorganize their debts. *Id.* Bankruptcy courts must balance

cash—plays a key role in bankruptcy proceedings.⁸¹ The value of an asset can be determinative of the actions of all parties involved in the bankruptcy process, including the debtor, creditors, and trustee.⁸² Section A of this Part provides a brief overview of the federal bankruptcy process.⁸³ Section B discusses preferential and fraudulent transfers, the trustee’s recovery powers, and the importance of valuation to recovery in the event of avoidable transfers.⁸⁴

A. Bankruptcy Basics

Filing a petition for bankruptcy initiates the bankruptcy process, the end goal of which is to erase or reorganize the debts of businesses and individuals.⁸⁵ The Code provides for several types of bankruptcy relief, including liquidation relief and reorganization and restructuring relief.⁸⁶ An automatic stay arises on the debtor’s assets upon the filing of a bankruptcy petition.⁸⁷ Once the debtor petitions for bankruptcy, all of the debtor’s assets, including cryptocurrency assets, become part of the bankruptcy estate.⁸⁸ The automatic stay protects the

this debtor-focused outcome with the simultaneous goal of maximizing the value received by each of the debtor’s creditors. *Id.*

⁸¹ See 5 COLLIER ON BANKRUPTCY ¶ 550.02 (Richard Levin & Henry J. Sommer eds., 16th ed. 2020), Lexis (explaining that value means fair market value in the bankruptcy context); JEFF RISIUS & JESSE ULTZ, STOUT, VALUATION—THE CORNERSTONE OF THE BANKRUPTCY PROCESS 2 (2017), <https://www.stout.com/en/insights/article/sj17-valuation-the-cornerstone-of-the-bankruptcy-process> [<https://perma.cc/9GYC-SJ3L>] (introducing the importance of valuation throughout bankruptcy proceedings).

⁸² RISIUS & ULTZ, *supra* note 81.

⁸³ See *infra* notes 85–92 and accompanying text.

⁸⁴ See *infra* notes 93–103 and accompanying text.

⁸⁵ 11 U.S.C. § 301(a) (providing that the filing of a bankruptcy petition initiates the voluntary bankruptcy process); see LEWIS, *supra* note 80, at 1 (explaining that the goal of the bankruptcy process is to help honest debtors discharge or reorder their debts).

⁸⁶ 11 U.S.C. §§ 701–783 (providing the rules for the liquidation of the debtor’s assets and their distribution to the debtor’s creditors); *id.* §§ 1101–1195 (providing the rules for the reorganization and restructuring of the debtor’s business or individual debts to pay creditors while the debtor continues to operate); *id.* §§ 1301–1330 (providing the rules for the reorganization of the debtor’s debts pursuant to chapter 13 of the Code). Chapter 7 of the Code prescribes the process for liquidation, wherein the trustee liquidates the debtor’s assets for payment to creditors. LEWIS, *supra* note 80, at 9. Chapter 11 provides the rules for reorganization—a method that avoids full-scale liquidation of a business’s assets, which allows for the business to keep running. *Id.* at 12. Chapter 13 allows an individual with regular income to restructure and reorganize their debts. *Id.* at 8. The Code is not the only source of bankruptcy law. *Id.* at 2–3. The Federal Rules of Bankruptcy Procedure and jurisdiction-specific additions to these procedural rules also guide bankruptcy proceedings. *Id.*

⁸⁷ 11 U.S.C. § 362(a) (providing for the automatic stay upon petition); RISIUS & ULTZ, *supra* note 81, at 2.

⁸⁸ 11 U.S.C. § 541 (explaining that upon petition, the debtor’s assets become a part of the bankruptcy estate); see COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 541.02 (explaining that the estate includes “all of the debtor’s legal and equitable property interests” at the time of the bankruptcy petition (emphasis omitted)). This estate includes “all legal or equitable interests of the debtor in property,” which extends to any cryptocurrency assets that the debtor possesses. See 11 U.S.C. § 541(a)(1) (mandating that “all legal or equitable interests of the debtor in property as of the commencement of

bankruptcy estate by enjoining creditors and other parties from acting on their claims against the debtor.⁸⁹ The estate is a separate juridical entity, meaning that it has a legal identity separate from that of the debtor, and it contains the pool of assets that the bankruptcy trustee will use to distribute to the creditors.⁹⁰ A bankruptcy trustee is appointed to manage the estate and distribute funds to creditors.⁹¹ The trustee's role often consists of liquidating assets and paying creditors with the proceeds, an action that hinges upon the assets' valuation.⁹²

B. Avoidable Transfers

Although the bankruptcy estate arises at the time of petition, any transfers that the debtor makes to other parties prior to the filing of their petition deplete the estate of assets.⁹³ There are different types of avoidable transfers—preferential transfers and fraudulent transfers among them—but their effect is the same.⁹⁴ An asset that should have been a part of the bankruptcy estate is ab-

the case” are part of the bankruptcy estate); David E. Kronenberg & Daniel Gwen, *Bitcoins in Bankruptcy: Trouble Ahead for Investors and Bankruptcy Professionals?*, 10 PRATT'S J. BANKR. L. 112, 116 (2014) (noting that bitcoins are part of the debtor's estate in bankruptcy); Rayburn, *supra* note 15, at 259 (acknowledging that “it is uncontroversial to conclude that cryptocurrency assets are included within the bankruptcy estate”).

⁸⁹ 11 U.S.C. § 301(a) (providing that a voluntary bankruptcy case begins when the debtor files the bankruptcy petition); COLLIER ON BANKRUPTCY *supra* note 81, ¶ 362.01 (explaining that the automatic stay prevents “litigation, lien enforcement and other actions, judicial or otherwise that are attempts to enforce or collect prepetition claims”); LEWIS, *supra* note 80, at 6; Claudia A. Restrepo, Comment, *A Pro Debtor and Majority Approach to the “Automatic Stay” Provision of the Bankruptcy Code—In re Cowen Incorrectly Decided*, 59 B.C. L. REV. E. SUPP. II.-537, II.-540 (2018), <https://lawdigitalcommons.bc.edu/bclr/vol59/iss9/31/> [<https://perma.cc/V4DC-XHUF>].

⁹⁰ *Bankruptcy Estate*, LAW OFFS. OF BRAD WEIL, <https://bradweillaw.com/home/bankruptcy-estate/> [<https://perma.cc/4W6Z-QRDU>]. In chapter 7 cases the bankruptcy trustee administers the bankruptcy estate, liquidates the estate's assets, and distributes the proceeds to the creditors. 11 U.S.C. § 704(a) (listing the duties of the trustee).

⁹¹ 11 U.S.C. §§ 701–702 (providing for the appointment of the Chapter 7 trustee); *id.* § 704 (listing the duties and responsibilities of the Chapter 7 trustee). In a Chapter 11 case, there is often a debtor in possession (DIP) managing the business, rather than a trustee. *Id.* §§ 1107–1108. The DIP runs the business during the reorganization period and has the same rights, duties, and powers as a trustee to ensure the orderly payments to creditors. *Id.*

⁹² See LEWIS, *supra* note 80, at 9 (explaining that in chapter 7 cases, the trustee sells the property and doles the resulting money out among creditors).

⁹³ 11 U.S.C. § 547 (describing preferential transfers that the trustee may avoid); *id.* § 548 (describing fraudulent transfers that the trustee may avoid). An avoidable transfer occurs when the debtor transfers property that should have been part of the bankruptcy estate to someone else within a certain period, generally ninety days, before the automatic stay. RISIUS & ULTZ, *supra* note 81, at 6 (explaining that the recovery powers generally cover transfers that the debtor made within ninety days prior to filing the bankruptcy petition, regardless of whether the debtor is solvent or insolvent during this period).

⁹⁴ See 11 U.S.C. § 547 (providing a list of avoidable preferences); *id.* § 548 (discussing fraudulent transfers). Preferential transfers are situations where the debtor paid a debt or otherwise transferred property to one of its creditors outside of the ordinary course of business, and that have the effect of depleting the estate at the expense of the debtor's other creditors. *Id.* § 547. Fraudulent transfers occur

sent, reducing the overall pool of assets that the trustee can distribute to the debtor's various creditors.⁹⁵ The Code thereby authorizes the trustee and the bankruptcy court to recover the transferred assets or their value.⁹⁶ This requirement stems from the trustee's goal of maximizing distribution to unsecured creditors: the trustee will recover the value of the property (and liquidate it, if property) and then use this to provide each unsecured creditor with their pro rata share of the bankruptcy estate.⁹⁷

The Code, however, does not explain in which situations the trustee should recover the property and in which situations the trustee should recover the property's value.⁹⁸ Furthermore, the Code does not mandate the date on which the court should value the property if it recovers the value.⁹⁹ For assets

when the debtor transferred property to another party two years prior to filing bankruptcy if the debtor intended to defraud the bankruptcy court or if the debtor received less than the value of the property in exchange. *Id.* § 548. This Note focuses on pre-petition preferential and fraudulent transfers, but the trustee's recovery powers extend beyond these two situations. See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (listing other actions that the trustee may avoid). The trustee's avoidance and recovery powers also extend to certain other liens and classes of post-petition transfers. *Id.* The underlying legal reason for the recovery, however, does not impact the transferee's liability or the trustee's ability to recover once the court has deemed that recovery is appropriate. *Id.* ¶ 550.01.

⁹⁵ Lisa Guerin, *The Clawback Provision and Preferential Transfers*, THEBANKRUPTCYSITE, <https://www.thebankruptcysite.org/resources/bankruptcy/filing-bankruptcy/the-clawback-provision-preferential-transfers.htm> [<https://perma.cc/4A4W-UW3G>]. Because the trustee's overarching goal is to maximize distribution to unsecured creditors, these missing assets raise difficulties in achieving this goal. See *What Are the Main Purposes of Bankruptcy?*, BANKR. RES. (Apr. 9, 2013), <http://bankruptcyresources.org/content/what-are-main-purposes-bankruptcy> [<https://perma.cc/X4Z8-EU4R>] (listing the debtor's fresh start and the "equal treatment of [c]reditors" as the two underlying policies of bankruptcy).

⁹⁶ 11 U.S.C. § 550 (providing that the trustee, in recovering a transfer, may recover the property of the transfer, or, if permitted by the bankruptcy court, the cash value of the transferred property rather than the property itself). When such a transfer occurs, the Code deems the transferred property to be a part of the bankruptcy estate and provides that the trustee may recover the property itself or its value, as of a date chosen by the court, and distributed to creditors. See *id.* (explaining that the trustee may recover transferred property or its value and when the trustee may recover such property as property of the estate). The policy behind this is simple. See RISIUS & ULTZ, *supra* note 81, at 6 (explaining that recovery actions are based on the idea that creditors have an interest in the company that has declared bankruptcy). Normally, an individual or business enters into agreements and transfers its property as it chooses. *Id.* at 5–6. When an entity declares bankruptcy, however, the Code recognizes that creditors have rights to the property and obligations of the debtor, and that a pre-bankruptcy transfer affects those rights. See *id.* (noting that "creditors have a stake in the company that is recognized by the Code . . . with regard to transfers of property and incurring obligations").

⁹⁷ LEWIS, *supra* note 80, at 11 (explaining that an estate with sufficient assets will be able to pay each unsecured creditor its pro rata share); see COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that the recovery cannot benefit the debtor or one creditor—it must go to the payment of all unsecured creditors).

⁹⁸ See 11 U.S.C. § 550 (explaining when the trustee may recover transferred property or its value and when the trustee may recover such property as property of the estate); COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that the Code does not offer guidance on when the court should "permit recovery of the value of the property rather than the property itself").

⁹⁹ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (discussing the different factors courts might consider, such as when the property depreciates or appreciates, when deciding as of what date

whose value fluctuates rapidly, such as cryptocurrencies, the specific date of valuation can have a large impact.¹⁰⁰ Valuation is therefore essential in the context of avoidable transfers that involve cryptocurrencies.¹⁰¹ In general, the trustee converts recovered currencies to U.S. dollars based on the currency's value on the date that the debtor filed for bankruptcy relief.¹⁰² In the case of commodities, the trustee can recover the value of the property (although the trustee must determine the correct valuation date) or the property itself.¹⁰³

III. THE CHALLENGES OF CRYPTOCURRENCY ASSETS IN BANKRUPTCY

Cryptocurrencies and bankruptcy intersect in complicated ways due to the novel challenges that cryptocurrencies' volatility and undefined classification pose.¹⁰⁴ This Part provides a deeper discussion of the specific legal issues that arise when bankruptcy courts must determine the value of cryptocurrency assets in bankruptcy proceedings, providing a basis for the argument that bankruptcy courts should treat cryptocurrencies as commodities.¹⁰⁵ Section A discusses how cryptocurrencies' volatility affects valuation, and why the valuation of assets is important in the context of the commodity-versus-currency debate and avoidable transfers.¹⁰⁶ Section B expands on Section A with an in-depth exploration of the implications of a currency or commodity classification for cryptocurrency assets and avoidable transfers as well as a discussion of the current, limited case law addressing these questions.¹⁰⁷

to value the transferred property); Maginnis, *supra* note 69, at 486 (observing that the Code does not "specify when the property should be valued for purposes of a recovery order").

¹⁰⁰ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (discussing the impact of property appreciation and depreciation on the trustee's recovery powers); Rochester & Lersner, *supra* note 11 (discussing the volatility in cryptocurrency values and explaining how it complicates asset valuation in bankruptcy).

¹⁰¹ See Molinaro & Klaessy, *supra* note 18 (explaining situations in which cryptocurrency value became important when the cryptocurrency itself could not be recovered).

¹⁰² See *id.* (recounting the argument that a currency should be converted into U.S. dollars based on the date of the bankruptcy petition).

¹⁰³ See 11 U.S.C. § 550(a) (providing that the trustee may recover the property or its value); Molinaro & Klaessy, *supra* note 18 (suggesting that in the case of volatile commodities, the trustee can consider fluctuations in value in deciding whether to recover the property itself or the value).

¹⁰⁴ See *supra* notes 1–103 (providing a basic discussion of cryptocurrency characteristics and bankruptcy proceedings). See generally Molinaro & Klaessy, *supra* note 18 (discussing the challenges that arise when parties filing for bankruptcy possess cryptocurrency assets).

¹⁰⁵ See *infra* notes 106–212 and accompanying text.

¹⁰⁶ See *infra* notes 108–138 and accompanying text.

¹⁰⁷ See *infra* notes 139–212 and accompanying text.

A. Cryptocurrency Volatility, Valuation, and Avoidable Transfers

The valuation of cryptocurrencies has proven to be a critical yet tricky issue in bankruptcies that involve cryptocurrency assets.¹⁰⁸ The sheer volatility of cryptocurrencies makes it difficult to pinpoint a single value for any one cryptocurrency at any one time.¹⁰⁹ The general lack of case law on cryptocurrencies in bankruptcy means that bankruptcy courts currently have little guidance on how and when to value cryptocurrency assets.¹¹⁰ Moreover, courts have disagreed on whether to classify Bitcoin and other cryptocurrencies as currencies or as commodities for the purposes of bankruptcy proceedings.¹¹¹ Because of the enormous implications that that classification has for cryptocurrencies' valuation in bankruptcy, particularly in the context of avoidable transfers, the lack of clear classification is proving challenging to courts.¹¹²

1. Cryptocurrency Volatility and Valuation in Bankruptcy

The inherent volatility of many cryptocurrencies stems from their nature—their values lack a tangible source and derive almost entirely from demand.¹¹³ Furthermore, prices for the same cryptocurrency often differ between

¹⁰⁸ Molinaro & Klaessy, *supra* note 18.

¹⁰⁹ See Tu, *supra* note 10, at 214 (noting that the volatility of cryptocurrency poses problems); Bob Pisani & Todd Haselton, *Here's Why Bitcoin Prices Are Different on Each Exchange*, CNBC (Dec. 12, 2017), <https://www.cnbc.com/2017/12/12/why-bitcoin-prices-are-different-on-each-exchange.html> [<https://perma.cc/HBG7-7R8R>] (observing that different Bitcoin exchanges can provide different prices for bitcoins at the same time); Rochester & Lersner, *supra* note 11 (explaining that the value of cryptocurrencies has been highly volatile).

¹¹⁰ See Justin Steffen & Michael Perich, *The Curious Case of Crypto Valuations*, LAW360 (July 3, 2019), <https://www.law360.com/articles/1174302/the-curious-case-of-crypto-valuations> [<https://perma.cc/L4U3-7EWK>] (observing that because most bankruptcy cases involving cryptocurrency assets are still nascent, no method of valuation has been sufficiently employed in court).

¹¹¹ Molinaro & Klaessy, *supra* note 18.

¹¹² *Id.* (noting that if cryptocurrencies are treated as commodities rather than as currencies, the trustee has the option of recovering the cryptocurrency itself rather than its value in the event of avoidable transfers); Rochester & Lersner, *supra* note 11 (explaining that the commodity-versus-cryptocurrency question is important because currencies enjoy greater protections under the Code than do commodities); see Hashfast Techs. LLC v. Lowe (*In re* Hashfast Techs. LLC), No. 14-30725DM, slip op. at 2 (Bankr. N.D. Cal. 2016) (addressing the issue of whether Bitcoin is a currency or commodity without deciding one way or the other).

¹¹³ See HART ET AL., *supra* note 31, § 25.01 (explaining that “[s]peculation has made Bitcoin’s value tremendously volatile” and “[w]ild fluctuations in the value of Bitcoin means that the buyers and sellers who are transferring funds may not give or receive the amount of wealth for which they bargained”); Arthur Iinuma, *Why Is the Cryptocurrency Market So Volatile: Expert Take*, COINTELEGRAPH (Feb. 27, 2018), <https://cointelegraph.com/news/why-is-the-cryptocurrency-market-so-volatile-expert-take> [<https://perma.cc/3PGG-46T8>] (discussing the general volatility of cryptocurrency markets); Rochester & Lersner, *supra* note 11 (commenting on the volatility of bitcoins and other coins due to their dependence on market behaviors). For example, Bitcoin’s market capitalization was around \$14 billion at the beginning of 2017, but it jumped to approximately \$315 billion by December 18, 2017. *Bitcoin*, COINMARKETCAP, <https://coinmarketcap.com/currencies/bitcoin/> [<https://perma.cc/RA9U-VUNB>] (providing an interactive map of Bitcoin’s market capitalization and price). Just a few days later, on

different exchanges.¹¹⁴ Cryptocurrency transactions occur on exchanges that operate differently to cater to the distinct cryptocurrency needs of different buyers and sellers.¹¹⁵ The actions of these specific buyers and sellers correspondingly determine the price of the cryptocurrency on that exchange.¹¹⁶ Supply and demand at any one moment of time on any one exchange set the price at which cryptocurrencies are bought and sold on that exchange, rather than some intrinsic quality of the cryptocurrencies themselves.¹¹⁷ As a result,

December 24, 2017, Bitcoin's market capitalization was \$223 billion. *Id.* On January 7, 2018, its value had risen to \$270 billion, only to plummet once again to \$140 billion by February 7, 2018. *Id.* A comparison of market capitalization to price demonstrates the practical struggles of such volatility. *See id.* At its highpoint, one bitcoin was worth almost \$19,000, a valuation that dropped to about \$18,300 just a few months later. *Id.* More recently, Bitcoin's value decreased by 7% in a span of just three days, a slump attributed to multiple effects including a Ponzi scheme and a low trading traffic. Theron Mohamed, *Bitcoin's Slump May Have Been Driven by a Billion-Dollar Ponzi Scheme, Miners Cashing Out, and a Volume Slump*, INSIDER: MKTS. INSIDER (Dec. 18, 2019), <https://markets.businessinsider.com/currencies/news/bitcoin-price-slump-blamed-on-ponzi-scheme-miners-selling-thin-volume-1028772968> [<https://perma.cc/MS8D-R9CA>] (delineating several possible reasons for Bitcoin's 2018 volatility). Ethereum has displayed similar volatility, falling from an approximate market capitalization of \$128 billion on January 14, 2018, to \$40 billion on August 3, 2018. *Ethereum*, COINMARKETCAP, <https://coinmarketcap.com/currencies/ethereum/> [<https://perma.cc/8DQG-HRQL>] (providing an interactive map of Ethereum's market capitalization and price). Likewise, Ripple's XRP commanded a market capitalization of over \$20 billion in June 2019 but fell to approximately \$8 billion by the end of December 2020. *XRP*, COINMARKETCAP, <https://coinmarketcap.com/currencies/xrp/> [<https://perma.cc/5FQX-NHTC>] (providing a chart with historical data about XRP's market capitalization).

¹¹⁴ Pisani & Haselton, *supra* note 109; *see also* Sarah Hansen, *Guide to Top Cryptocurrency Exchanges*, FORBES (June 20, 2018), <https://www.forbes.com/sites/sarahhansen/2018/06/20/forbes-guide-to-cryptocurrency-exchanges/#269ece992572> [<https://perma.cc/6PYU-QYK4>] (discussing the differences among cryptocurrency exchanges, which include the types of traders that go to each exchange and the regulations present in each exchange's jurisdiction).

¹¹⁵ Hansen, *supra* note 114; Richard J. Mason, *How Bankruptcy Courts Will Treat Cases Involving Cryptocurrency Exchanges*, LAW J. NEWSLS. (Feb. 2019), <https://www.lawjournalnewsletters.com/2019/02/01/how-bankruptcy-courts-will-treat-cases-involving-cryptocurrency-exchanges/> [<https://perma.cc/Y8DD-RZV4>].

¹¹⁶ *See* Hansen, *supra* note 114 (noting that traders might be different on different exchanges, and could range from novice investors to full-scale lenders); Pisani & Haselton, *supra* note 109 (explaining that different levels of liquidity on each exchange, different methods of pricing Bitcoin, and the difficulties of transferring money between exchanges all contribute to the different Bitcoin prices on each exchange). For example, exchanges in different countries are subject to different and shifting regulatory schemes. Hansen, *supra* note 114. In the United States, exchanges are subject both to federal law and to differing state laws, depending on the state in which they are located. *Id.* Everyday consumers and casual investors frequent some exchanges, whereas larger institutions and career traders conduct business on different exchanges. *Id.* Furthermore, the size of the exchange—large versus small—impacts how many traders use it every day. Pisani & Haselton, *supra* note 109. Larger exchanges have a greater trading volume and thus a greater supply of coins than smaller exchanges, which impacts the price of the cryptocurrencies traded on the exchange. *Id.*

¹¹⁷ *See* Pisani & Haselton, *supra* note 109 (noting that the volume of trading at each exchange can impact the price and that Bitcoin “price is based purely on trading”); Steffen & Perich, *supra* note 110 (explaining that “there is no one-size-fits-all model to value a crypto asset,” that “[h]istorical crypto price data may not be reliable,” and that “[c]ryptocurrency pricing sites . . . use different formulas to arrive at their price estimates”).

there may be no one correct answer as to what a cryptocurrency is worth at any particular time, creating challenges for the bankruptcy courts that must translate a cryptocurrency asset into a set dollar amount.¹¹⁸

2. Commodity Versus Currency: The Effect of Cryptocurrency Classification and Volatility on the Trustee's Avoidance Powers

If bankruptcy courts treat cryptocurrencies like currencies, trustees will recover the U.S. dollar value of the cryptocurrency, as assessed by the court, upon avoidance of a fraudulent transfer.¹¹⁹ The trustee recovering a cryptocurrency-as-currency asset must attempt to attribute a dollar value to the asset that it is seeking to recover, which is complicated by the constantly shifting value of cryptocurrencies.¹²⁰ If bankruptcy courts treat cryptocurrencies as commodities, then the trustee will be permitted to recover the coins themselves, rather than their value.¹²¹ The commodity classification mostly avoids the valuation question, except in cases where the cryptocurrency assets have been lost or stolen, and the trustee must therefore determine and recover their value instead.¹²² In both cases—if cryptocurrencies are currencies or if they are commodities and are stolen—the determinative issue becomes the date on which the court should value the assets.¹²³ There currently are no U.S. bankruptcy court cases that have answered this currency-versus-commodity question definitively.¹²⁴ Furthermore, the Code's minimal guidance on these terms leaves

¹¹⁸ Kira Egorova, *Crypto Exchanges, Explained*, COINTELEGRAPH (July 10, 2018), <https://cointelegraph.com/explained/crypto-exchanges-explained> [<https://perma.cc/Z766-UAFZ>] (observing that one steady price for Bitcoin or other cryptocurrencies cannot possibly exist because their prices are based on a multitude of market factors).

¹¹⁹ Maginnis, *supra* note 69, at 510; Molinaro & Klaessy, *supra* note 18.

¹²⁰ See Molinaro & Klaessy, *supra* note 18 (explaining the problems caused by volatility and noting that cryptocurrency valuation procedures might involve “contested and expensive valuation battle[s].”).

¹²¹ See *id.* (noting that if Bitcoin is a commodity, then courts will have the benefit of choosing the coins or the value of the coins).

¹²² *Id.*

¹²³ See *id.* (arguing that courts should value cryptocurrencies on the petition date if they are currencies, but that if cryptocurrencies are commodities, and if they naturally increase in value, they should arguably be valued as of the date of the recovery action).

¹²⁴ See Rayburn, *supra* note 15, at 261–63 (noting that no court has fully addressed the question and detailing cases, including *Hashfast Technologies LLC v. Lowe (In re Hashfast Technologies LLC)*, in which the court avoided the question); Rochester & Lersner, *supra* note 11 (summarizing the *In re Hashfast Technologies LLC* court's reasoning and noting that the court examined the difference between currencies and commodities in bankruptcy proceedings). *In re Hashfast Technologies LLC* is the only case, as of today, that addresses this question, although it does not answer it directly. *Hashfast Techs. LLC v. Lowe (In re Hashfast Techs. LLC)*, No. 14-30725DM, slip op. at 2 (Bankr. N.D. Cal. 2016); Molinaro & Klaessy, *supra* note 18. In *Securities Exchange Commission v. Shavers*, a 2013 case, the U.S. District Court for the Eastern District of Texas held that “[b]itcoin [was] a currency or form of money.” Fed. Sec. L. Rep. (CCH) ¶ 97,596, at *5 (E.D. Tex. 2013). This was not a bankruptcy case, however. See *generally id.* The court was answering the question of whether Bitcoin

to courts the complex task of determining how to interpret the Code to define these new and volatile cryptocurrency assets.¹²⁵

The significance of this question stormed to the front of crypto-users' and legal practitioners' minds in early February 2014.¹²⁶ Mt. Gox, a highly popular Bitcoin exchange at the time, reported the theft of 750,000 bitcoins belonging to its customers and 100,000 belonging to the exchange itself.¹²⁷ These numbers accounted for seven percent of worldwide bitcoins, worth approximately \$473,000,000 in 2014.¹²⁸ The massive extent of this theft left Mt. Gox little choice but to petition for bankruptcy relief, both in Japan and in the United States.¹²⁹ The result of this incredible loss, however, meant that Mt. Gox lacked the requisite bitcoins needed to pay back all of those who had lost money in the collapse.¹³⁰ During the liquidation process, the bankruptcy trustee sold approximately \$400 million worth of Bitcoin so that the cash proceeds could be distributed to creditors.¹³¹ Some experts link such an enormous sell-off of bitcoins to the drastic price fluctuations of bitcoin in 2017.¹³² The Mt. Gox case subsequently moved from bankruptcy to civil rehabilitation, a differ-

was a security, a finding that requires "an investment of money." *Id.* at *5. The court ultimately concluded that a person who "made a number of solicitations aimed at enticing lenders to invest in Bitcoin-related investment opportunities" had engaged in a security transaction. *Id.* at *2. Notably, however, the SEC has since clarified that Bitcoin is not a security. See Adrian Zmudzinski, *SEC: If Bitcoin Was a Security, It Would 'Raise Substantial Issues,'* COINTELEGRAPH, (Oct. 6, 2019), <https://cointelegraph.com/news/sec-if-bitcoin-was-a-security-it-would-raise-substantial-issues> [<https://perma.cc/XJ6T-5MMD>].

¹²⁵ See Rochester & Lersner, *supra* note 11 (pointing out that bankruptcy courts will have to find guidance elsewhere than the Code on this issue because the Code defines neither currency nor commodity).

¹²⁶ See Darryn Pollock, *The Mess That Was Mt. Gox: Four Years On*, COINTELEGRAPH (Mar. 9, 2018), <https://cointelegraph.com/news/the-mess-that-was-mt-gox-four-years-on> [<https://perma.cc/MDN4-AGJ2>] (recounting the events of 2014, when Mt. Gox reported the theft of hundreds of thousands of its customers' bitcoins).

¹²⁷ Chu, *supra* note 11, at 2340–41; Pollock, *supra* note 126. A leading exchange in the early years of the new cryptocurrency era, Mt. Gox was responsible for approximately 80% of Bitcoin exchanges prior to its collapse. Chu, *supra* note 11, at 2340. The bitcoins lost in its collapse totaled a few hundred million dollars of its customers' assets. *Id.* at 2341. Mt. Gox's struggles, which at least one scholar suggests may have been due to its own negligence, meant that upon collapse, it could not adequately compensate its customers for their losses. *Id.* Mt. Gox, as a cryptocurrency exchange, represented one of the highest-level bankruptcy challenges created by cryptocurrencies in bankruptcy—how to handle bankrupt exchanges and the assets of their customers. See *id.* at 2340 (introducing the case of Mt. Gox as an early example of the problems posed by the bankruptcies of cryptocurrency exchanges).

¹²⁸ Pollock, *supra* note 126.

¹²⁹ *Id.*

¹³⁰ Chu, *supra* note 11, at 2341.

¹³¹ Molinaro & Klaessy, *supra* note 16.

¹³² *Id.*

ent type of insolvency proceeding in Japan that permitted the trustee to pay the creditors' claims in bitcoins rather than in cash.¹³³

Because the bankruptcy trustee had originally paid the claims with the cryptocurrencies themselves, this shift to civil rehabilitation raised the question of whether trustees should treat Bitcoin and other cryptocurrency claims as if Bitcoin were a currency, collecting the cash value, or as if Bitcoin were a commodity, collecting the bitcoins themselves.¹³⁴ Those analyzing the Mt. Gox proceedings recognized that paying the claims in cash would effectively freeze their value on the date of Mt. Gox's bankruptcy petition.¹³⁵ The estate, which would retain the bitcoins, would have to come up with the cash to pay each creditor, but would be entitled to any future increases in the value of the bitcoins in its possession.¹³⁶ If the trustee paid the claims in bitcoins, however, it would not deplete the estate of its valuable cash.¹³⁷ The tradeoff would be that the creditors in possession of the coins, rather than the estate, would retain the benefit (and risk) of their investments in the bitcoins.¹³⁸

¹³³ *Id.*; see Hiroko Nakata, *Corporate Bankruptcy, the Japanese Way*, JAPAN TIMES (Apr. 28, 2009), <https://www.japantimes.co.jp/news/2009/04/28/reference/corporate-bankruptcy-the-japanese-way/> [<https://perma.cc/5TXG-9MNB>] (describing civil rehabilitation as one of six types of insolvency proceedings in Japan, and as one of the two types that permit the business to continue operating). In Japan, companies often favor civil rehabilitation because it permits the company to reorganize without replacing its current managing team and because it facilitates creditor's efforts to pursue individual claims. *Id.*

¹³⁴ See Molinaro & Klaessy, *supra* note 16 (noting that if Bitcoin is a currency, the estate will have to recover the cash value of the coins, but that if it is a commodity, the estate could recover the coins themselves).

¹³⁵ See *id.* (explaining that if the court treated Bitcoin as a currency, then it would be "'translated' into the prevailing fiat currency . . . and then paid out in accordance with the value as of the petition date"). Creditors paid in cash would receive the cash value of their coin holdings as of the date that Mt. Gox filed for bankruptcy, but would not get back the coins that they had previously held nor any future appreciation that the coins might accrue. Molinaro & Klaessy, *supra* note 18.

¹³⁶ See *id.* (observing that whether trustees paid creditors' claims in cash as of the date of the petition, or in Bitcoin, greatly influenced creditors' recoveries).

¹³⁷ *Id.*

¹³⁸ See *Hashfast Techs. LLC v. Lowe (In re Hashfast Techs. LLC)*, No. 14-30725DM, slip op. at 2 (Bankr. N.D. Cal. 2016) (explaining how the currency-versus-commodity classification impacts which party obtains the coins themselves); Illman & Cox, *supra* note 14 (explaining the implications of the currency-versus-commodity classification in terms of valuation date and who gets increases in value). Because cryptocurrencies change in value so quickly, parties may sometimes want to keep the coins and part with a lower cash value, or keep a higher cash value and return the depreciating coins to the estate. See Illman & Cox, *supra* note 14 (pointing out that the commodity-versus-commodity and valuation debate is complicated by quickly changing Bitcoin prices).

B. Cryptocurrencies as Currencies or Commodities and the Trustee's Avoidance Powers

An asset's value plays an essential role in the context of fraudulent and preferential transfers.¹³⁹ The trustees' avoidance powers, which allow it to recover assets or their value in response to such transfers, are complicated by cryptocurrency volatility and bankruptcy courts' lack of consensus on whether cryptocurrencies are commodities or currencies.¹⁴⁰ As a result, the cryptocurrency debate centers on whether Bitcoin and other cryptocurrencies are currencies or commodities.¹⁴¹

1. Bankruptcy and District Courts on Whether Cryptocurrencies Are Commodities or Currencies

One of the few bankruptcy court cases discussing the commodity-versus-currency distinction for cryptocurrencies, *Hashfast Technologies LLC v. Lowe* (*In re Hashfast Technologies LLC*), a 2016 case decided by the Bankruptcy Court for the Northern District of California, does not provide an answer.¹⁴² It does, however, allude to the importance of cryptocurrency classification.¹⁴³ In *In re Hashfast Technologies LLC*, the court had to determine whether the debtor had fraudulently transferred its Bitcoin assets to another party, and if so, whether the transferee had to return the coins themselves or their value to the bankruptcy estate.¹⁴⁴

¹³⁹ See 11 U.S.C. § 550 (providing that the trustee may recover the transferred property or the value of the transferred property); Maginnis, *supra* note 69 (describing the impact of Bitcoin's value on the recovery actions in *In re Hashfast Technologies LLC*).

¹⁴⁰ See Molinaro & Klaessy, *supra* note 16 (explaining that the issue of whether to classify Bitcoin as a currency or a commodity first arose when the court had to decide when and how much to pay creditors during the Mt. Gox bankruptcy).

¹⁴¹ Chelsea Deppert, Comment, *Bitcoin and Bankruptcy: Putting the Bits Together*, 32 EMORY BANKR. DEVS. J. 123, 124 (2015) (discussing the commodity-versus-currency debate); Rayburn, *supra* note 15, at 260 (explaining that the outcome of a bankruptcy case might hinge on whether courts classify cryptocurrencies as currencies or commodities). Commodities include items such as wheat, corn, butter, wool, livestock, and "all services, rights, and interests . . . in which contracts for future delivery are presently or in the future traded in." Commodity Exchange Act, 7 U.S.C. § 1a(9) (defining commodities). Currencies are a medium of exchange that a government backs or authorizes. See *What Is Currency?*, THE LAW DICTIONARY, <https://thelawdictionary.org/currency/> [<https://perma.cc/M8A7-TNEE>] (defining currency as items that "are authorized by law [and] . . . circulate from hand to hand as the medium of exchange").

¹⁴² *In re Hashfast Technologies LLC*, slip op. at 2 (explaining that it does not have to decide whether Bitcoin is a currency or a commodity for the purposes of the case in front of it).

¹⁴³ *Id.* (explaining that deciding whether Bitcoin was a currency or a commodity was not necessary to determine whether a fraudulent transfer had occurred); see Rochester & Lersner, *supra* note 11 (summarizing the court's reasoning of *In re Hashfast Technologies LLC* and noting that the court examined the difference between currencies and commodities in bankruptcy proceedings).

¹⁴⁴ *In re Hashfast Techs. LLC*, slip op. at 2; Molinaro & Klaessy, *supra* note 16. The debtor, Hashfast, paid 3,000 bitcoins to the transferee, Lowe, in the months preceding Hashfast's bankruptcy

If the court classified Bitcoin as a currency, the defendant-transferee would have been required to return the cash value of the bitcoins, rather than the actual bitcoins themselves.¹⁴⁵ Significantly, the *In re Hashfast Technologies LLC* court did not decide on which date this cash value would be determined.¹⁴⁶ If the bitcoins were a commodity, in contrast, the transferee would be required to return the bitcoins themselves to the estate, which would confer upon the bankruptcy estate the significant increase in Bitcoin value that had occurred since the transfer.¹⁴⁷ Bitcoin's volatility was central to this debate because the value of the bitcoins at the time of this decision was four hundred percent greater than their value had been at the time the debtor transferred the coins to the defendant-transferee.¹⁴⁸ Although the court ultimately did not have occasion to answer the currency-versus-commodity question in this case, the court did make clear, albeit without further elaboration, that bitcoins are legally distinct from U.S. dollars.¹⁴⁹ Furthermore, *In re Hashfast Technologies LLC* was a significant case because it exposed the interconnection of the currency-versus-commodity question and the cryptocurrency valuation question.¹⁵⁰

A recent district court case further illuminates the classification conundrum.¹⁵¹ In the 2018 case *Commodities Futures Trading Commission v. My Big*

petition. Maginnis, *supra* note 69, at 503. The bankruptcy trustee sought to recover these 3,000 bitcoins under the theory that the transactions between Hashfast and Lowe were preferential or fraudulent transfers. *Id.*

¹⁴⁵ Molinaro & Klaessy, *supra* note 16.

¹⁴⁶ *In re Hashfast Techs. LLC*, slip op. at 2 (holding that if the transferee had to return the value of the bitcoins rather than the bitcoins themselves, then the court would determine on which date to value the bitcoins).

¹⁴⁷ Rochester & Lersner, *supra* note 11.

¹⁴⁸ Molinaro & Klaessy, *supra* note 16. The bitcoins had a value of \$363,861.43 as of the date of the transfer but \$1.3 million as of the date of the bankruptcy petition. Rayburn, *supra* note 15, at 262. Post-petition, during the bankruptcy proceedings, the bitcoins' value subsequently swelled to \$2.3 million. Maginnis, *supra* note 69, at 486.

¹⁴⁹ *In re Hashfast Techs. LLC*, slip op. at 1; see Maginnis, *supra* note 69, at 487 (noting that the parties in *In re Hashfast Technologies LLC* agreed to dismiss the case before the court had a chance to rule on the substantive issues before it); Samuel M. Andre & Nicholas Hankins, *Keeping Your Bankruptcy Practice in the Twenty-First Century: The Expanding Issue of Cryptocurrency*, FREDRIKSON & BYRON, P.A. (Feb. 11, 2020), https://www.fredlaw.com/the_restructuring_report/keeping-your-bankruptcy-practice-in-the-twenty-first-century-the-expanding-issue-of-cryptocurrency/ [<https://perma.cc/7WAD-NJNR>] (pointing out that the *In re Hashfast Technologies LLC* court held that Bitcoin was not equivalent to the U.S. dollar, but that it did not explain its reasoning for this determination).

¹⁵⁰ See Molinaro & Klaessy, *supra* note 16 (explaining the *In re Hashfast Technologies LLC* court's analysis of the currency-versus commodity debate); see also *In re Hashfast Techs. LLC*, slip op. at 2 (hinting at the importance of the commodity-versus-currency distinction for Bitcoin by deciding that the court, on the facts at hand, did not have to determine whether Bitcoin was a commodity or a currency for the purposes of the Code's fraudulent transfer sections).

¹⁵¹ See *Commodity Futures Trading Comm'n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 495–98 (D. Mass. 2018) (discussing Bitcoin's commodity status); see also *Commodity Futures Trading Comm'n v. McDonnell*, 287 F. Supp. 3d 213, 217 (E.D.N.Y. 2018) (holding that virtual currencies are subject to CFTC regulation).

Coin Pay, Inc., the U.S. District Court for the District of Massachusetts held that the CFTC could regulate the cryptocurrency in question because it qualified as a commodity.¹⁵² In *My Big Coin Pay*, the court found that because there is a futures trading complex for Bitcoin, Bitcoin must be a commodity.¹⁵³ Even though the cryptocurrency that the CFTC sought to regulate in this case was not Bitcoin, the court found that this did not matter—if one type of cryptocurrency is a commodity, the court found, then they all are because the Commodities Exchange Act (CEA) classifies commodities by category rather than by specific type.¹⁵⁴

¹⁵² 334 F. Supp. 3d at 497–98 (finding that the CFTC could regulate the cryptocurrency). Congress originally created the CFTC to oversee the agricultural futures trading market, and the CFTC now regulates all items for which there is a futures trading market. *History of the CFTC, CFTC History in the 1970s*, COMMODITY FUTURES TRADING COMM'N, https://www.cftc.gov/About/HistoryoftheCFTC/history_1970s.html [<https://perma.cc/7YQM-JPBX>]. In a similar case, *Commodity Futures Trading Comm'n v. McDonnell*, the U.S. District Court for the Eastern District of New York found that the defendant's fraudulent activities violated the CEA, and accordingly granted an injunction against the defendant's activities in the CFTC's favor. 287 F. Supp. 3d at 217, 230. The court ruled in the CFTC's favor after a discussion of the "common usage" of virtual currencies and their role in storing value, which is a traditional function of commodities. *Id.* at 224, 230.

¹⁵³ *My Big Coin Pay*, 334 F. Supp. 3d at 496–98. The CFTC typically looks for the presence of a futures trading market in which individuals can buy and sell futures contracts for that item to determine whether a category of asset qualifies as a commodity. See *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Curran*, 456 U.S. 353, 355–56 (1982) (explaining that the CEA is "a comprehensive regulatory structure to oversee the volatile and esoteric futures trading complex" (quoting H. R. REP. NO. 93-975, at 1 (1974))).

¹⁵⁴ See *My Big Coin Pay*, 334 F. Supp. 3d at 497–98 (concluding that the Commodities Exchange Act (CEA) regulates by category rather than by specific type). If bankruptcy courts treat Bitcoin as a commodity following the *My Big Coin Pay* decision, they are likely to treat other cryptocurrencies similarly, including Ethereum's ether and Ripple's XRP, in the same manner. See *id.* (describing the categorical nature of the CEA and CFTC regulation). Due to structural similarities among cryptocurrencies, it is likely that courts will group them together as commodities, although some cryptocurrencies with vastly different structures might fall outside of this grouping. See *Chu, supra* note 11 (observing that a key feature of most cryptocurrencies is that they are "digital assets recorded on a decentralized blockchain."). *My Big Coin Pay* is thus likely to impact bankruptcy courts' treatment of cryptocurrencies going forward, although the extent of this impact is unclear, because this is just the ruling of one district court. See 334 F. Supp. 3d at 498 (holding that the CFTC sufficiently argued that Bitcoin, and thus *My Big Coin Pay*, is a commodity subject to the CFTC's regulation); *Molinaro & Klaessy, supra* note 16 (noting that the *My Big Coin Pay* decision will likely impact this debate). In *My Big Coin Pay*, the court compared cryptocurrencies to natural gas, which the CFTC already regulates as a commodity. 334 F. Supp. 3d at 497–98. *My Big Coin Pay*, despite being a cryptocurrency, did not have much in common with Bitcoin, and did not involve cryptocurrency futures trading. *Id.* The court reasoned that because the CEA defined commodities by category, rather than by specifics, it did not matter whether *My Big Coin Pay* was technically a commodity or not, because Bitcoin clearly constituted a commodity. *Id.* Furthermore, the court analogized cryptocurrencies to natural gas. *Id.* Comparing the facts at hand to those in natural gas cases, the court decided that Bitcoin (and thus *My Big Coin Pay*) constituted a commodity. *Id.* The presence of a Bitcoin futures trading market permitted the CFTC to make this classification. *Id.*

2. Currency Versus Commodity: Why the Distinction Matters to Debtors, Creditors, and Other Interested Parties

In general, currencies receive greater protection under the Code than do many other categories of assets, rendering a currency classification attractive to debtors and creditors alike.¹⁵⁵ If cryptocurrencies are classified as currency, many cryptocurrency transactions may be “swap agreements” under the Code, which include swaps of currency.¹⁵⁶ Essentially, swap agreements are contracts that permit parties to hedge the risk associated with certain financial instruments.¹⁵⁷ In the bankruptcy context, swap agreements are contractual transfers from the debtor to another party that are not hindered by the automatic stay and that the trustee may not draw back into the estate with its avoidance powers.¹⁵⁸ Currency swaps, a category of swap agreements, generally reduce the transaction costs of cross-border parties by mitigating the risk posed by fluctu-

¹⁵⁵ Rayburn, *supra* note 15, at 268; Rochester & Lersner, *supra* note 11; *see* 11 U.S.C. § 546(g) (explaining that the trustee may not avoid transfers made “under or in connection with any swap agreement”); *id.* § 560 (listing protections for swap agreements in bankruptcy).

¹⁵⁶ *See* 11 U.S.C. § 101(53B) (defining “swap agreements”); ERIN JANE ILLMAN & ROBERT A. COX, JR., THOMPSON REUTERS, BITCOIN AND BANKRUPTCY: WHY CREDITORS AND BANKRUPTCY PRACTITIONERS NEED TO UNDERSTAND CRYPTOCURRENCIES 2 (2017) https://www.bradley.com/-/media/files/insights/publications/2017/12/westlaw_journal_bankruptcy_december14.pdf?la=en [<https://perma.cc/38ZP-D8WF>] (explaining that if Bitcoin is a currency under the Code’s definition of the term, the “exchange agreements of bitcoin for cash may be considered ‘swap agreements’” because currency swaps are included in the Code’s definition of currency).

¹⁵⁷ BRETT A. AXELROD & GORDON GOOLSBY, BLOOMBERG L. REPS., SWAPS AND THE BANKRUPTCY CODE 1 (2011), <https://www.foxrothschild.com/content/uploads/2015/05/axelrodgoolsby-swapsandthebankruptcycode.pdf> [<https://perma.cc/ME72-KHFA>] (defining swaps as “financial instruments that are embodied in contracts”); Eleanor Heard Gilbane, *Testing the Bankruptcy Code Safe Harbors in the Current Financial Crisis*, 18 AM. BANKR. INST. L. REV. 241, 244 (2010) (explaining that “swap agreements are by definition hedging instruments”). Swap agreements cover a class of “securities or other financial transactions” and “forward commodities contracts” that Congress determined should be exempt from the automatic stay provisions in the Code. Christopher J. Rubino, Note, *The Ever Expanding Scope of Securities and Commodities Safe Harbors in Bankruptcy*, 20 AM. BANKR. INST. L. REV. 423, 423 (2012); Philip D. Anker et al., *The Outer Bounds of Safe Harbors*, LAW360 (June 25, 2010), <https://www.law360.com/articles/177264/the-outer-bounds-of-safe-harbors> [<https://perma.cc/PGC6-VVTV>].

¹⁵⁸ *See* 11 U.S.C. § 101(53B) (including a broad array of pre-petition transactions, including those involving currency swaps, in the “swap agreement” definition); *id.* § 362(b)(17) (explaining the treatment of swap agreements with regard to the automatic stay); *id.* § 546(g) (discussing the trustee’s inability to avoid transfers made pursuant to swap agreements). In practice, this means that a creditor, pursuant to the swap agreement, may take assets from the debtor after the automatic stay is in place, and this transfer will not violate the automatic stay. *See* AXELROD & GOOLSBY, *supra* note 157, at 1 (noting that a “non-debtor swap counterparty is permitted to terminate the swap and seize its collateral notwithstanding the automatic stay”). Furthermore, the trustee similarly cannot recover assets from transfers that the debtor makes to the creditor in the pre-petition period, as long as the debtor made these transfers subject to a valid swap agreement. *See* ILLMAN & COX, *supra* note 156, at 2 (explaining that the trustee cannot avoid actions that parties make pursuant to swap agreements as fraudulent transfers).

ating currency exchange rates over the course of a deal.¹⁵⁹ If included under the currency umbrella, cryptocurrency transactions would arguably constitute currency swaps, so long as debtors exchange cryptocurrencies for other cryptocurrencies or for fiat currencies.¹⁶⁰

Scholars have noted that designating cryptocurrencies as currencies would facilitate pre-bankruptcy planning because the debtor would be able to fulfill contractual agreements that fall under the swap agreement provisions without the risk that the trustee will avoid the transactions.¹⁶¹ Furthermore, the automatic stay's confines often do not apply to swap agreements.¹⁶² If creditors are not enjoined from acting against the debtor or the debtor's assets the moment the automatic stay falls into place, they will retain their right to pursue contractual and legal remedies against the debtor, without surrendering their autonomy to the control of the bankruptcy trustee.¹⁶³

If cryptocurrencies are classified as commodities under the Code, then transactions in which the debtor transfers cryptocurrency assets to a creditor will receive similar protections only if the contracts underlying their transfer satisfied the Code's definition of "forward contract[s]."¹⁶⁴ A forward contract is a contract for the purchase or sale of a commodity or other asset that has a maturity date two or more days after the date of execution of the contract.¹⁶⁵ For cryptocurrency transactions to meet this definition, they must mature at least two days after the execution of the contract.¹⁶⁶ The Code, however, does

¹⁵⁹ Cory Mitchell, *How Do Currency Swaps Work?*, INVESTOPEDIA (June 23, 2020), <https://www.investopedia.com/ask/answers/042315/how-do-currency-swaps-work.asp> [<https://perma.cc/PR55-SLC6>]. Scholars have noted that if courts deem cryptocurrencies to be currencies in the insolvency context, then "Bitcoin and other crypto transactions [would receive] the same level of bankruptcy protection as transactions involving the exchange of U.S. dollars for other currencies, such as euros or yen." Rayburn, *supra* note 15, at 268.

¹⁶⁰ See Rayburn, *supra* note 15, at 269 (explaining that transactions involving cryptocurrencies would count as swap agreements if they were "bitcoin-for-bitcoin or bitcoin for any other form of currency").

¹⁶¹ *Id.* at 268 (noting that section 546(g) of the Code limits the trustee's ability to avoid prepetition swap agreements).

¹⁶² 11 U.S.C. § 560 (explaining that the trustee cannot avoid swap agreements and detailing additional protections for swap agreements); Rayburn, *supra* note 15, at 268–69.

¹⁶³ See Rayburn, *supra* note 15, at 269 (explaining that creditors can sue to protect their contractual interests without regard to the automatic stay if cryptocurrency transactions fall under the swap agreement protections).

¹⁶⁴ 11 U.S.C. § 101(25)(a) (defining a "forward contract"); ILLMAN & COX, *supra* note 156, at 2.

¹⁶⁵ 11 U.S.C. § 101(25)(a) (defining a "forward contract"). The Code defines a "forward contract" as "a contract . . . for the purchase, sale, or transfer of a commodity . . . with a maturity date more than two days after the date the contract is entered into." *Id.*

¹⁶⁶ See *id.* (defining forward contract and specifying the post-transaction two-day maturity rule); see *Hutson v. E.I. du Pont de Nemours & Co. (In re Nat'l Gas Distributions, LLC)*, 556 F.3d 247, 259–60 (4th Cir. 2009) (discussing the characteristics of commodity agreements that constitute swap agreements within the meaning of the Code).

not define “maturity date.”¹⁶⁷ It is unclear under this vague definition whether cryptocurrency transactions mature more than two days after they are made, although practitioners have noted that they likely do not.¹⁶⁸ Cryptocurrency transactions are therefore unlikely to fall within the forward contract definition, unless they specifically involve trading in cryptocurrency futures.¹⁶⁹ Outside the cryptocurrency context, commodities in general are not afforded swap agreement protections unless they are clearly made pursuant to forward contracts.¹⁷⁰ The commodity classification therefore offers cryptocurrency transactions much less protection against the automatic stay and the trustee’s avoidance powers than would a currency classification, which has no two-day maturity requirement.¹⁷¹

Although a commodity classification would provide different protections for creditors than a currency classification, scholars argue that a commodity classification mostly settles the valuation problem in the event of fraudulent transfers.¹⁷² Section 550 of the Code explains that the trustee may recover either the asset itself or its value from the transferee, leaving the choice between the two to the court’s discretion.¹⁷³ Rather than converting the cryptocurrency into fiat currency, a commodity classification will permit bankruptcy courts to handle cryptocurrencies like other commodities such as natural gas, oil, or gold.¹⁷⁴ Scholars argue that bankruptcy courts are likely to prefer recovery of

¹⁶⁷ Erika del Nido, *Slipping into the Safe Harbor: When Is a Supply Contract a Protected “Forward Contract”?*, WEIL, GOTSHAL & MANGES LLP: BANKR. BLOG (May 26, 2013), <https://business-finance-restructuring.weil.com/avoidance-actions/slipping-into-the-safe-harbor-when-is-a-supply-contract-a-protected-forward-contract/> [<https://perma.cc/DE5W-QJWL>].

¹⁶⁸ See ILLMAN & COX, *supra* note 156, at 2 (noting that Bitcoin contracts will likely be difficult to classify as forward contracts).

¹⁶⁹ See *DeGirolamo v. McIntosh Oil Co. (In re Laurel Valley Oil Co.)*, No. 05-64330, slip op. at 4 (Bankr. N.D. Ohio Mar. 5, 2013) (holding that the maturity date is more than two days post-transaction when the “risk/benefit aspect of the forward contract is not realized at the time of payment, but rather at the time of delivery of the commodity”); ILLMAN & COX, *supra* note 156, at 2 (explaining that “[g]iven the nature of bitcoins, it may be difficult for any transactions or agreements with the transfer of bitcoins to meet the definition of forward contract”); *Bitcoin Futures Trading*, KRAKEN, <https://www.kraken.com/en-us/features/futures> [<https://perma.cc/QQ6N-6LZT>] (explaining that users who engage in Bitcoin futures trading, as opposed to those who engage in other forms of Bitcoin trading, make agreements to receive a certain amount of bitcoins at a certain date in the future, rather than on the date of the contract).

¹⁷⁰ See Rayburn, *supra* note 15, at 270 (noting that unless they are forward contracts, “[c]ommodity contracts are not generally exempted from the automatic stay” and the trustee can therefore avoid transfers made pursuant to commodity contracts).

¹⁷¹ See *id.* at 269–70 (noting that cryptocurrencies as commodities would get much less protection under the Code than would cryptocurrencies as currencies).

¹⁷² See *id.* (explaining different creditor protections depending on whether an asset is a currency or a commodity); Molinaro & Klaessy, *supra* note 18 (noting that having the transferee return bitcoins themselves would avoid valuation issues that would come from a return of cash value).

¹⁷³ 11 U.S.C. § 550(a).

¹⁷⁴ See *Commodity Futures Trading Comm’n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 497–98 (D. Mass. 2018) (comparing cryptocurrencies to natural gas holdings with respect to commod-

the cryptocurrency itself if cryptocurrencies are commodities because this largely precludes valuation issues.¹⁷⁵ Instead of determining the value of the cryptocurrency on the relevant valuation date, the trustee can simply bring the coins themselves back into the estate.¹⁷⁶

3. Fraudulent Transfers in the Unique Context of Cryptocurrencies

In the event of avoidable transfers, issues with valuation arise when recovery of the actual cryptocurrency is not possible, because in this situation the transferee must return the value of the cryptocurrency asset, rather than the asset itself.¹⁷⁷ If the party benefitting from a fraudulent transfer refuses or is unable to transfer back the bitcoins, the bankruptcy trustee will be unable to recover the cryptocurrency itself, which could be its primary objective in the event of commodity classification.¹⁷⁸ In this situation, the bankruptcy trustee must determine the cash value of the cryptocurrency, as they must in cases where cryptocurrencies are treated as currencies.¹⁷⁹

The issues associated with asset recovery in the event of fraudulent and preferential transfers may be particularly prominent with theft-prone cryptocurrency assets.¹⁸⁰ In the first quarter of 2019, cryptocurrency firms estimated that upwards of a billion dollars of cryptocurrency assets disappeared due to theft, malware scams, and other instances of fraud.¹⁸¹ Because cryptocurren-

ity status); *Commodity Futures Trading Comm'n v. McDonnell*, 287 F. Supp. 3d 213, 224 (E.D.N.Y. 2018) (comparing cryptocurrencies to commodities such as gold).

¹⁷⁵ See Molinaro & Klaessy, *supra* note 18 (explaining that one preferable result of the commodity classification is that return of the property itself, rather than its value, will preclude the need for expensive valuation battles in cases where the property is returnable).

¹⁷⁶ See *id.* (noting that the return of Bitcoin could be preferable over a return of value).

¹⁷⁷ See *id.* (remarking on the importance of valuation in cases where the cryptocurrency itself is unrecoverable).

¹⁷⁸ See Balthazor, *supra* note 25, at 1216 (comparing the private key component of Bitcoin to an “Achilles heel” due to their vulnerability to theft); Molinaro & Klaessy, *supra* note 18 (pointing out that the court might prefer the return of the property if it is a commodity).

¹⁷⁹ See Rochester & Lersner, *supra* note 11 (noting that the cash value would be the dollar value of the bitcoins upon the date of the transfer); see also *supra* notes 113–118 and accompanying text (discussing cryptocurrency volatility, the dependency of cryptocurrency price on market factors, and the reasons why different cryptocurrency exchanges might provide different prices for the same cryptocurrency).

¹⁸⁰ See Kirill Bryanov, *Grand Theft Crypto: The State of Cryptocurrency-Stealing Malware and Other Nasty Techniques*, COINTELEGRAPH (June 23, 2019), <https://cointelegraph.com/news/grand-theft-crypto-the-state-of-cryptocurrency-stealing-malware-and-other-nasty-techniques> [https://perma.cc/N9AC-AYB3] (providing an overview of the problem of cryptocurrency theft); Molinaro & Klaessy, *supra* note 18 (introducing the issue of cryptocurrency theft in the case of fraudulent transfers).

¹⁸¹ Bryanov, *supra* note 180. Experts report that cryptocurrency theft and fraud appear to be increasing, due in part to the increasing popularity of cryptocurrencies and the increasing number of crypto-beginners trading cryptocurrency assets and engaging in cryptocurrency transactions. *Id.*

cies are decentralized networks without government backing, there is little help available for those who are victims of cryptocurrency fraud.¹⁸² Furthermore, blockchain transactions cannot be undone once completed, which makes it difficult for victims to recover their stolen cryptocurrency assets.¹⁸³ Once lost or stolen, cryptocurrency assets are exceedingly difficult to recover.¹⁸⁴ As cryptocurrencies continue to increase in popularity, bankruptcy courts are likely to encounter more roadblocks to recovering stolen cryptocurrency assets.¹⁸⁵

A commodity classification does not erase the inherent valuation challenges posed by volatile cryptocurrencies.¹⁸⁶ Valuation will continue to affect recovery actions involving theft or other obstacles that prevent the recovery of the cryptocurrency itself.¹⁸⁷ In such instances, the estate must recover the value of the cryptocurrency, rather than the cryptocurrency itself.¹⁸⁸ Value, in this context, is the fair market value of the asset.¹⁸⁹ For cryptocurrencies, however,

Scammers often obtain cryptocurrencies through ransomware attacks that require victims to pay in cryptocurrencies to unlock their data and other malware attacks. *Id.*

¹⁸² Balthazor, *supra* note 25, at 1209; *see* Bryanov, *supra* note 180 (discussing the difficulty of recovering cryptocurrency assets due to the “irreversible nature of blockchain transactions”).

¹⁸³ Balthazor, *supra* note 25, at 1208–09.

¹⁸⁴ *Id.* Due to cryptocurrencies’ decentralized nature, courts have very few remedies when faced with lost or stolen cryptocurrency assets. *Id.* at 1208. Once someone steals the private key (and thus the cryptocurrency) the thief can easily transfer the assets to another jurisdiction, further complicating legal efforts to recover the stolen property. *Id.* at 1209. Experts have found that Bitcoin users have lost approximately ten percent to theft, altogether. *Id.* at 1210. In the case of fraudulent transfers, one of the only remedies available to the court may be if the transferee uses a cryptocurrency exchange in the court’s jurisdiction. *Id.* at 1225. In this event, the court may be able to bring a recovery action against the exchange itself. *Id.*

¹⁸⁵ *See* Bryanov, *supra* note 180 (identifying the increase in cryptocurrency thefts and the type of malware schemes behind many of these attacks); Molinaro & Klaessy, *supra* note 18 (explaining that stolen cryptocurrency assets might impact fraudulent transfer recovery procedures in bankruptcy). Mt. Gox, which first exposed the importance of the commodity-versus-currency classification, also revealed just how serious the threat of theft is to those with cryptocurrency assets, and the challenges this can pose during bankruptcy proceedings. *See* Molinaro & Klaessy, *supra* note 16 (recounting how the Mt. Gox drama began when hackers stole a significant number of bitcoins from the exchange).

¹⁸⁶ *See* Molinaro & Klaessy, *supra* note 18 (noting that valuation challenges remain when someone steals the property or it is otherwise unrecoverable).

¹⁸⁷ *See id.* (introducing the challenges of cryptocurrency valuation, stolen cryptocurrencies, and fraudulent transfers); Joseph Young, *How Is Bitcoin Actually Stolen? Theft Prevention*, COINTELEGRAPH (Aug. 16, 2016), <https://cointelegraph.com/news/how-is-bitcoin-actually-stolen-theft-prevention> [<https://perma.cc/Z2Y3-FT5B>] (explaining that the theft of private keys is the source of most Bitcoin thefts).

¹⁸⁸ *See* 11 U.S.C. § 550(a) (providing that the asset itself may be recovered, if possible, or that its value may be recovered). Situations such as this reflect the same valuation concerns that apply if cryptocurrencies are currencies because in both the currency context and the theft context, asset value is determinative. *See* RISIUS & ULTZ, *supra* note 81, at 2 (noting the importance of valuation protocols throughout a bankruptcy proceeding); Molinaro & Klaessy, *supra* note 18 (detailing the importance of valuation whether cryptocurrencies are currencies or commodities). Because the Code permits the trustee to recover property or the property’s value, valuation becomes a concern whenever value other than property is recovered, because the court must determine what that value is. *See* 11 U.S.C. § 550(a).

¹⁸⁹ COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02.

the fair market value changes by the day.¹⁹⁰ Therein lies the heart of the question that is currently plaguing bankruptcy courts: what date should they use to determine the value of a cryptocurrency asset?¹⁹¹

4. Choosing the Valuation Date

The Code does not prescribe a specific valuation date, so courts have little guidance when dealing with novel assets.¹⁹² Some courts have used the date on which the debtor transferred the property as the date from which to take the property's value.¹⁹³ Another option is for courts to use the date that the trustee brings the recovery action.¹⁹⁴ A third option is for courts to value the cryptocurrency asset as of the date of the bankruptcy petition.¹⁹⁵

The first option for courts tasked with attributing a single value to an asset with a constantly shifting value is to recover the value of the cryptocurrency asset as of the date that the debtor made the fraudulent or preferential transfer to the transferee.¹⁹⁶ This transfer date approach can be consistent with section 550's restorative purpose, depending on the value of the cryptocurrency asset at the time of the transfer.¹⁹⁷ The trustee is permitted to recover the transferred property or its value because this positions the estate as it should be—where it would be if the debtor had not transferred the property out of the

¹⁹⁰ See Steffen & Perich, *supra* note 110 (analyzing valuation experts' struggle to develop a cryptocurrency valuation system, due in part to cryptocurrency volatility); see also *supra* notes 113–118 and accompanying text (providing an overview of cryptocurrency volatility and the difficulties in determining the prices of cryptocurrencies).

¹⁹¹ See Molinaro & Klaessy, *supra* note 18 (discussing times when either the petition date, the recovery date, or the date of transfer might be used to value the cryptocurrency asset, and the many factors on which this choice of date might depend).

¹⁹² See *Weinman v. Fid. Cap. Appreciation Fund (In re Integra Realty Res., Inc.)*, 354 F.3d 1246, 1266 (10th Cir. 2004) (noting that the Code does not tell courts how or when to value assets).

¹⁹³ See *Drewes v. FM Da-Sota Elevator Co. (In re Da-Sota Elevator Co.)*, 939 F.2d 654, 655 n.2 (8th Cir. 1991) (valuing the elevator contracts at issue in the case at the time of the transfer).

¹⁹⁴ See 11 U.S.C. § 550(a) (supporting the proposition that the trustee could value the transferred property as of the date of the recovery action); Molinaro & Klaessy, *supra* note 18 (recounting the *In re Hashfast Technologies LLC* trustee's argument that cryptocurrencies were commodities that should be valued at the time of recovery, and linking this argument to the fact that bitcoins' value had significantly increased since the date of the transfer).

¹⁹⁵ See 11 U.S.C. § 301 (providing that a voluntary bankruptcy case begins with the filing of the bankruptcy petition); *Falcon Creditor Tr. v. First Ins. Funding Corp. (In re Falcon Prods., Inc.)*, Bankr. L. Rep. (CCH) ¶ 81,434, 2009 WL 10460048, at *7 (Bankr. E.D. Mo., 2009) (holding that the date of the bankruptcy petition is important to the preferential transfer analysis); Molinaro & Klaessy, *supra* note 18 (noting circumstances where the date of valuation is the date of the petition).

¹⁹⁶ See 11 U.S.C. § 547 (explaining when the trustee can avoid a preferential transfer); *id.* § 548 (explaining when the trustee can avoid a fraudulent transfer).

¹⁹⁷ See *USAA Fed. Sav. Bank v. Thacker (In re Taylor)*, 599 F.3d 880, 890 (9th Cir. 2010) (discussing section 550(a) and its restorative goal (citing *Aalfs v. Wirum (In re Straightline Invs., Inc.)*, 525 F.3d 870, 883 (9th Cir. 2008)); COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (noting that the purpose of section 550 is "restoration" of the estate).

would-be estate.¹⁹⁸ This option is likely to appeal particularly to trustees who must recover the value of cryptocurrency assets that have depreciated significantly since the date of the transfer.¹⁹⁹ Case law suggests that in the case of assets that quickly depreciate in value, the trustee must recover the value of the asset at the time of the transfer in order to fulfill the goal of treating all creditors equally.²⁰⁰ In a 1991 case, *Drewes v. FM Da-Sota Elevator Co. (In re Da-Sota Elevator Co.)*, the Eighth Circuit Court of Appeals held that an elevator contract was a “wasting asset” that depreciated over time as customers left the company.²⁰¹ The time of the transfer marks the point at which the transferee receives the benefit, and the argument for this valuation approach is that the transferee should return this benefit to the estate.²⁰²

A second option is to value the cryptocurrency asset based on the date that the trustee brings the recovery action.²⁰³ In general, courts have discretion

¹⁹⁸ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that section 550’s purpose is “putting the estate back where it would have been but for the transfer”). If the transfer had not occurred, the estate would not have been depleted. See *In re Taylor*, 599 F.3d at 888–89 (observing that if the trustee had not avoided the transfer, the transferee would have received more than it otherwise should have as an unsecured creditor).

¹⁹⁹ See *Drewes v. FM Da-Sota Elevator Co. (In re Da-Sota Elevator Co.)*, 939 F.2d 654, 655 n.2 (8th Cir. 1991) (noting that “[f]airness to creditors requires collection by the trustees of the value of the contracts *at the time of transfer*” in the context of assets that depreciate post-transfer). Of course, the transferee party from whom the trustee recovers the value is likely to be unhappy about all of this, but the trustee’s function is to pay the debtor’s creditors, and this function cannot be carried out if the recipient of an avoidable transfer does not have to return the transferred value. See *In re Taylor*, 599 F.3d at 888–89 (explaining why the transferee did not want the trustee to avoid the transfer); LEWIS, *supra* note 80, at 11 (describing the trustee’s role in distributing value in the estate to the debtor’s creditors).

²⁰⁰ *In re Da-Sota Elevator Co.*, 939 F.2d at 655 n.2. In the 1991 case *Drewes v. FM Da-Sota Elevator Co. (In re Da-Sota Elevator Co.)*, the Eighth Circuit Court of Appeals upheld the district court’s determination that it should value elevator contracts at the time of transfer. *Id.* The Eighth Circuit found that the lower court’s judgment was based on law and fact, and accordingly declined to reexamine the decision or its policy implications. See *id.* at 654–55 (explaining that “where the District Court’s determination is supported by substantial and sufficient evidence, we [the Eight Circuit Court] affirm”).

²⁰¹ *Id.* at 655 n.2 (finding that elevator contracts were wasting assets because they quickly depreciated). In this case, an elevator maintenance company, Da-Sota, sold its elevator maintenance contracts to other elevator companies. *Id.* at 655. A few months later, Da-Sota filed for bankruptcy. *Id.* The Eighth Circuit first held that elevator contracts have value and therefore the bankruptcy court properly included them in the bankruptcy estate, and that their sales to other companies constituted fraudulent transfers. *Id.* at 656. As customers exited their contracts with Da-Sota and moved their business elsewhere, the contracts that Da-Sota had sold decreased in value. *Id.* at 655 n.2. The court ruled that the trustee could recover “the value of the contracts *at the time of transfer*” because this most effectively restored the estate to where it would have been without the fraudulent transfers. See *id.* (explaining that this was the best way to ensure fair treatment of the creditors).

²⁰² *Id.* at 655 n.2 (noting that the transfer date is when the transferee benefited, and that the transferee therefore “should reimburse the estate accordingly”).

²⁰³ See 11 U.S.C. § 550(a) (explaining that in the case of an avoidable transfer, the trustee is entitled to bring an action against the transferee to recover the transferred property or its value, but not specifying a specific valuation date, which gives the trustee options for which date to recover the

to recover the value as of the recovery date when the property “naturally increases in value.”²⁰⁴ The main attraction underlying this approach is that it permits the court to recover any increase in value that occurs after the date of the bankruptcy petition.²⁰⁵ If the cryptocurrency asset had never been transferred, it would have become part of the bankruptcy estate on the date of the debtor’s filing of the bankruptcy petition.²⁰⁶ Based on this reasoning, any post-petition appreciation in value should also be brought into the bankruptcy estate.²⁰⁷ The underlying rationale aligns with the restorative policies supporting use of the date of the transfer as the date of the valuation.²⁰⁸ Although the cryptocurrency asset’s value may appreciate between the petition date and the date of recovery, the general volatility and uncertainty surrounding cryptocurrency values means that the value of the coins might also depreciate significantly during this period.²⁰⁹

Bankruptcy courts also have the option of valuing cryptocurrency assets based on the date on which the debtor files the bankruptcy petition, which is a critical date in the bankruptcy universe.²¹⁰ The bankruptcy petition marks the

asset); Molinaro & Klaessy, *supra* note 18 (summarizing the *In re Hashfast Technologies LLC* trustee’s argument that Bitcoin, if a commodity, should be valued based on the date of recovery).

²⁰⁴ *Heller Ehrman LLP v. Day (In re Heller Ehrman LLP)*, 2014 Bankr. LEXIS 382, at *25–26 (Bankr. N.D. Ca. 2014).

²⁰⁵ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that permitting the trustee to recover this increase in value aligns with section 550’s restorative approach); see also *Today’s Cryptocurrency Prices by Market Cap*, COINMARKETCAP, [https://coinmarketcap.com/\[https://perma.cc/U7S8-68RW\]](https://coinmarketcap.com/[https://perma.cc/U7S8-68RW]) (displaying price charts for the top 100 cryptocurrencies that show the increases and decreases in value over the last seven days, which serve as an indication of cryptocurrency volatility).

²⁰⁶ See 11 U.S.C. § 541(a) (mandating that the filing of the bankruptcy petition gives rise to the bankruptcy estate); *id.* §§ 547–548 (detailing the types of preferential and fraudulent transfers that deprive the bankruptcy estate of its rightful property); COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (providing that the recovery date may best serve the Code’s goal of restoring the estate to its rightful position in cases where the property increases in value).

²⁰⁷ COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (noting that there are some situations wherein the trustee should be able to recover the increase in value); see 11 U.S.C. § 550(e)(1)(B) (detailing the situations in which the trustee is entitled to recover increases in value that came from improvements to the property).

²⁰⁸ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining the restorative purpose of section 550).

²⁰⁹ See Nathan Reiff, *Why Bitcoin Has a Volatile Value*, INVESTOPEDIA (June 16, 2020), <https://www.investopedia.com/articles/investing/052014/why-bitcoins-value-so-volatile.asp> [<https://perma.cc/A44Q-K6RF>] (explaining Bitcoin’s current and historical volatility); *Today’s Cryptocurrencies by Market Cap*, *supra* note 205 (displaying daily price fluctuations in the top one hundred cryptocurrencies by market capitalization).

²¹⁰ See 11 U.S.C. § 550(a) (providing that the trustee may recover the value of the transferred property or the property itself, but not mandating a specific date requirement); Molinaro & Klaessy, *supra* note 18 (observing that currencies may be valued on the date of petition); see also 11 U.S.C. § 301 (providing that a voluntary bankruptcy case begins with the filing of the bankruptcy petition); *id.* § 362 (noting that the filing of the bankruptcy petition gives rise to the automatic stay, which pro-

creation of the bankruptcy estate, a juridical entity of its own that is protected by the wall-like confines of the automatic stay.²¹¹ The moment of petition is the moment that delineates which parties the bankruptcy proceedings will impact, as well as what assets are and are not part of the estate.²¹²

IV. CRYPTOCURRENCIES SHOULD BE HANDLED AS COMMODITIES AND SHOULD BE VALUED ON THE DATE OF PETITION WHEN NECESSARY

Cryptocurrencies are not currencies, based on any traditional understanding of the term, and bankruptcy courts should not classify them as such.²¹³ Bankruptcy courts should classify cryptocurrencies as commodities because this best reflects the reality of cryptocurrency market transactions.²¹⁴ Although a commodity classification largely mitigates issues surrounding the trustee's recovery powers and cryptocurrencies' volatility, bankruptcy courts should value cryptocurrencies as of the date of the bankruptcy petition when they cannot be physically recovered.²¹⁵ Section A of this Part argues that bankruptcy courts should treat cryptocurrencies like commodities in accordance with the functional reality of how cryptocurrencies operate in today's marketplace.²¹⁶ Section B of this Part argues that when the trustee cannot recover a cryptocurrency asset itself through trustee avoidance and recovery powers because the asset has been lost or stolen, the court should recover the cash value of the cryptocurrency as of the date of the bankruptcy petition because this date provides the most certainty to the most parties and best fulfills the goals of the Code.²¹⁷

A. Cryptocurrencies Should Be Classified as Commodities

A commodity classification will allay the significant bankruptcy valuation burden posed by cryptocurrencies' volatility, a burden that poses particular

ffects the bankruptcy estate); *id.* § 541 (providing that the commencement of the bankruptcy case under § 301 gives rise to the bankruptcy estate).

²¹¹ See 11 U.S.C. § 301 (explaining that the filing of the bankruptcy petition marks the commencement of the bankruptcy case, the date that determines who is and is not impacted by the debtor's bankruptcy); *id.* § 541 (providing that the initiation of the bankruptcy case gives rise to the bankruptcy estate, and so it is this date that determines what is and is not part of the estate).

²¹² See *id.* § 362 (detailing the instantaneous force of the automatic stay upon the creation of the bankruptcy estate); *id.* § 541 (discussing the creation of the bankruptcy estate).

²¹³ See Maginnis, *supra* note 69, at 509 (arguing that cryptocurrencies do not fulfill the traditional "medium of exchange" function of currencies).

²¹⁴ See *id.* (noting several functional justifications for the commodity classification for cryptocurrencies).

²¹⁵ See *id.* (explaining that a commodity classification avoids the valuation concerns for cryptocurrencies); Molinaro & Klaessy, *supra* note 18 (noting that even if classified as commodities, valuation issues might still arise in the context of preferential and avoidable transfers).

²¹⁶ See *infra* notes 218–242 and accompanying text.

²¹⁷ See *infra* notes 243–269 and accompanying text.

problems in the context of avoidable transfers.²¹⁸ A currency classification, in contrast, would require the trustee to recover the asset's cash value after any avoidable transfer, spawning costly and inefficient valuation fights over what the cryptocurrency is worth in U.S. dollars and on what date.²¹⁹ By permitting the trustee to recover the coins themselves, a commodity classification will therefore avoid battles over value and valuation date for such uniquely volatile assets.²²⁰

Furthermore, from a functional perspective, Bitcoin and other cryptocurrencies simply act more like commodities than they do currencies.²²¹ In general, central governments, monetary institutions, and commodities—such as gold and silver—back currencies, which people predominately use as mediums of exchange.²²² These characteristics do not apply to most cryptocurrencies, which have no central backing, and whose value stems entirely from the activities of those who buy and sell them.²²³ Bitcoin and other cryptocurrencies store value in much the same way that a commodity such as oil does.²²⁴ Currencies, in contrast, are “secured” against a government’s assurance or against the value of commodities.²²⁵ Although some users use Bitcoin as a currency-like medium of exchange, it is clear that Bitcoin and other cryptocurrencies function

²¹⁸ Illman & Cox, *supra* note 14 (noting that the lack of clarity over the commodity-versus-currency classification affects recovery in cases of fraudulent transfers and preferences, and discussing ways in which Bitcoin’s general volatility will become a problem in bankruptcy proceedings).

²¹⁹ See Molinaro & Klaessy, *supra* note 16 (explaining that a commodity classification would render a return of bitcoins themselves, which would be preferable to “a contested and expensive valuation battle” to determine the cash value of a cryptocurrency).

²²⁰ See *id.* (predicting that cryptocurrency valuations are likely to “become a pivot point” in bankruptcy proceedings, but that a commodity classification might avoid this); Steffen & Perich, *supra* note 110 (detailing different cryptocurrency-valuation methods proposed by experts, and pointing out that different methods might be better suited for different cryptocurrencies). These disputes are likely to interfere with the efficiency of bankruptcy proceedings because there are few cryptocurrency valuation experts available to testify in valuation hearings. See Steffen & Perich, *supra* note 110 (noting that parties’ may have trouble finding “crypto-conversant experts” because there are few experts available). Furthermore, it is currently unclear which cryptocurrency valuation model is the most accurate, and the cryptocurrency price information that is available may not be dependable. *Id.*

²²¹ See *Commodity Futures Trading Comm’n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 497–98 (D. Mass. 2018) (analogizing cryptocurrencies to natural gas to determine that the presence of a futures trading complex for a good makes it a commodity subject to the restrictions of the CEA).

²²² See *McDonnell v. Commodity Futures Trading Comm’n*, 287 F. Supp. 3d 213, 224–25 (E.D.N.Y. 2018) (explaining that “a currency is usually secured by a commodity or a government’s ability to tax and defend” (quoting Jeff Currie, *Bullion Beats bitcoin, Not Bitcoin*, GLOBAL INV. RES.: TOP OF MIND (Goldman Sachs), Mar. 11, 2014, at 7, <https://www.dwt.com/files/paymentlawadvisor/2014/01/GoldmanSachs-Bit-Coin.pdf> [<https://perma.cc/FV7T-ZFJZ>])).

²²³ *Making Sense of Bitcoin, Cryptocurrency and Blockchain*, *supra* note 34.

²²⁴ See *McDonnell*, 287 F. Supp. 3d at 224 (explaining that markets typically view commodities as “a store of value” whereas markets view the value of currencies as “secured” against a commodity or a government’s power (citing Currie, *supra* note 222)).

²²⁵ *Id.*

more like commodities.²²⁶ Cryptocurrency prices are entirely based on supply and demand, rather than deriving from some traditional asset such as a government-backed currency.²²⁷ In this way, cryptocurrency pricing closely aligns with the demand-based pricing of other commodities.²²⁸

Moreover, significant futures trading complexes have emerged around Bitcoin and other cryptocurrencies, much as they have for traditional commodities such as agricultural products.²²⁹ Congress enacted the CEA and created the CFTC to address the concerns present in nascent futures trading markets and the assets around which these markets arose.²³⁰ The CFTC has significant experience identifying and regulating commodities.²³¹ Moreover, in recognition of the differences between cryptocurrencies and traditional currencies, both the IRS and the CFTC have rejected a potential currency classification for cryptocurrencies.²³² In part, the IRS regulates Bitcoin as property rather than currency as a reflection of the investment-oriented nature of Bitcoin transactions.²³³ These reasoned decisions by regulatory bodies lend significant support to the argument that bankruptcy courts should follow the lead of the CFTC and IRS and treat cryptocurrencies like commodities.²³⁴

The strongest argument against a commodity classification is that, by largely removing cryptocurrency transactions from the swap agreement umbrella except in the case of cryptocurrency forward contracts, more cryptocur-

²²⁶ *Id.* at 225 (citing Mitchell Prentis, Note, *Digital Metal: Regulating Bitcoin as a Commodity*, 66 CASE W. RES. L. REV. 609, 628–69 (2015)); see Maginnis, *supra* note 69, at 506–10 (explaining that a commodity classification is appropriate for cryptocurrencies based on how currencies and commodities are traditionally defined).

²²⁷ See *McDonnell*, 287 F. Supp. 3d at 225 (noting that commodity pricing is based on the supply of the commodity and the demand of those who purchase it); Maginnis, *supra* note 69, at 507–08 (observing that Bitcoin is not supported by any government in the same way that traditional currencies are).

²²⁸ *McDonnell*, 287 F. Supp. 3d at 225 (explaining that cryptocurrencies are commodities because their prices are based on supply and demand, the same as metals and agricultural goods that are already recognized as commodities).

²²⁹ See *id.* at 252–53 (discussing the small but emerging Bitcoin futures market).

²³⁰ See *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Curran*, 456 U.S. 353, 355–62 (1982) (detailing the history of the CFTC and the CEA and their roles in regulating futures trading markets).

²³¹ See *id.* at 355–67 (discussing the long history of the CFTC in regulating products for which a futures trading market exists).

²³² See *Commodity Futures Trading Comm'n v. My Big Coin Pay, Inc.*, 334 F. Supp. 3d 492, 498 (D. Mass. 2018) (classifying Bitcoin as a commodity subject to CFTC regulations); Lee, *supra* note 1, at 86 (noting that the IRS has classified Bitcoin and other cryptocurrencies as property rather than currency).

²³³ See Lee, *supra* note 1, at 86 (explaining that the IRS decided to classify Bitcoin as property because this incentivizes people to invest in Bitcoin while at the same time permitting the IRS to tax it like other forms of property).

²³⁴ See *My Big Coin Pay*, 334 F. Supp. 3d at 498 (holding that the CFTC sufficiently alleged that cryptocurrencies are commodities subject to CFTC regulation); Lee, *supra* note 1, at 86 (discussing the IRS's decision not to classify cryptocurrencies as currencies); see also 11 U.S.C. § 761(8) (deferring to the CEA's definition of commodity).

rency transactions will be subject to the automatic stay and to the trustee's avoidance powers.²³⁵ The swap agreement provisions play an important role in balancing the interests of debtors and creditors engaged in certain financial transactions, and bankruptcy courts must also consider the practical realities of the financial world in which these parties operate.²³⁶ Swap agreement protections in the Code for certain financial transactions ensure that parties do not avoid entering into certain risk-laden agreements out of fear of bankruptcy.²³⁷ Just because the swap agreement provisions are more likely to apply to cryptocurrencies as currencies, however, does not mean that cryptocurrencies should be classified based on the sole goal of fitting within the definition of swap agreements.²³⁸

²³⁵ See ILLMAN & COX, *supra* note 156, at 2 (explaining that if bankruptcy courts classify Bitcoin as a commodity, the Code's swap agreement protections will only cover Bitcoin transactions if the transaction in question constitutes a forward contract). Another argument against a commodity classification is that Satoshi Nakamoto intended Bitcoin to serve as a currency. See NAKAMOTO, *supra* note 1, at 1 (suggesting that the Bitcoin "electronic payment system" would provide the security of in-person cash transactions to those whose desired "to make payments over a communications channel without a trusted party"); Maginnis, *supra* note 69, at 506 (recounting Satoshi Nakamoto's intention that Bitcoin act as a currency). Intending for Bitcoin to function as a currency does not mean, however, that it does so in reality. See Maginnis, *supra* note 69, at 506 (explaining why Nakamoto's intent does not determine Bitcoin's classification status); Jack Tatar, *Cryptocurrencies Are the New Alternative Investment*, THE BALANCE (Aug. 30, 2020), <https://www.thebalance.com/cryptocurrencies-are-the-new-alternative-investment-4048017> [<https://perma.cc/ZT2N-G4EU>] (observing that investors are increasingly seeking cryptocurrency investments as part of an alternative investment strategy in their portfolios).

²³⁶ See *Hutson v. E. I. du Pont de Nemours & Co. (In re Nat'l Gas Distributions, LLC)*, 556 F.3d 247, 252 (4th Cir. 2009) (discussing how Congress designed the Code to mitigate the commercial disruptions in financial and commodity markets that occur because of bankruptcy proceedings).

²³⁷ See *id.* at 252–53 (citing Edward R. Morrison & Joerg Riegel, *Financial Contracts and the New Bankruptcy Code: Insulating Markets from Bankrupt Debtors and Bankruptcy Judges*, 13 AM. BANKR. INST. L. REV. 641, 642 (2005)) (noting that Congress originally enacted the safe harbor provisions of the Code to protect the types of financial markets that collapse or experience other significant disruptions because of bankruptcy). Congress specifically designed these provisions to protect creditors who engaged in certain agreements with parties who later filed for bankruptcy. *Id.*; see AXELROD & GOOLSBY, *supra* note 157, at 1 (explaining the limited protections that the swap agreement provisions provide creditors whose debtors file for bankruptcy). The parties Congress had in mind with these provisions were those active in the types of financial and commodities markets that "might suffer serious shocks—perhaps even a systemic liquidity crisis, causing markets to collapse—when debtors enter bankruptcy." *Hutson*, 556 F.3d at 252–53 (quoting Morrison & Joerg, *supra*, at 642). Cryptocurrency markets, which are incredibly risk-laden due to their volatility, vulnerability to theft and fraud, and unclear regulatory status, likely were not the type of market Congress deemed necessary to protect from collapse in the event of debtor bankruptcies. See *id.* (discussing the original motivation Congress had in enacting safe harbor provisions in the Code); Bryanov, *supra* note 180 (discussing the risk of cryptocurrency theft and fraud); Illman & Cox, *supra* note 14 (discussing Bitcoin's volatility).

²³⁸ See ILLMAN & COX, *supra* note 156, at 2 (explaining the difference in the application of the swap agreement provisions of the Code depending on whether Bitcoin is a currency or commodity); LEWIS, *supra* note 80, at 1 (discussing the overarching goals of the Code).

Congress designed the Code to help debtors manage their debts and to ensure that creditors get paid in an orderly manner.²³⁹ Congress did not design the Code to make it easier for creditors and debtors to escape the confines of the automatic stay or the reach of the trustee's avoidance powers through the application of swap agreement provisions.²⁴⁰ The swap agreement protections for currency swaps play an important role in ensuring that bankruptcies do not disrupt financial markets, but this alone is unrelated to whether cryptocurrencies are currencies or commodities.²⁴¹ A commodity classification is most consistent with cryptocurrencies' market behavior and will best effectuate the goals of the Code.²⁴²

B. Cryptocurrency Value Should Be Based on the Date of Petition

In general, there are three main dates on which bankruptcy courts could determine asset value: the date that the debtor makes the fraudulent or preferential transfer; the date that the debtor files the petition for bankruptcy relief; or the date that the bankruptcy court brings the recovery action.²⁴³ Notwithstanding commodity classification, cryptocurrency valuation will be necessary in cases in which the trustee cannot recover the cryptocurrency itself due to loss or theft.²⁴⁴ In these cases, bankruptcy courts should recover the cash value of the cryptocurrency based on its value on the date of the bankruptcy peti-

²³⁹ See LEWIS, *supra* note 80, at 1 (detailing the debtor-oriented and creditor-oriented policies that inform the Code); Rubino, *supra* note 157, at 423 (observing that Congress, in enacting the Code, "has attempted to balance the competing interest of maximizing creditor returns in bankruptcy with protecting the greater market from the adverse effects of avoidance actions").

²⁴⁰ See LEWIS, *supra* note 80, at 1 (discussing the debtor's fresh start and fairness to creditors as the two main goals of the Code).

²⁴¹ See *Hutson*, 556 F.3d at 252 (citing the legislative history of the swap agreement provisions as evidence that Congress intended to protect financial markets from the disruptions caused by bankruptcies).

²⁴² See *McDonnell v. Commodity Futures Trading Comm'n*, 287 F. Supp. 3d 213, 224–25 (E.D.N.Y. 2018) (listing arguments about why Bitcoin behaves more like a commodity in today's markets than it does a currency). If cryptocurrencies are classified as currencies and are therefore widely insulated from the trustee's avoidance powers through the currency swap protections, then cryptocurrency assets will benefit one creditor rather than the estate as a whole. See 11 U.S.C. § 546(g) (mandating that the trustee cannot avoid transfers a debtor makes out of the bankruptcy estate if the transfers are pursuant to a swap agreement). This departs from the Code's goals of balancing the interests of the debtor with the interests of all creditors. See Lewis, *supra* note 80, at 1 (noting that the Code seeks to "[m]aximize total creditor return" by paying creditors with bankruptcy estate assets "in an orderly, equitable, and efficient fashion").

²⁴³ See Molinaro & Klaessy, *supra* note 18 (discussing examples of when the petition date, the transfer date, and the recovery date might be appropriate); see also *supra* notes 196–242 and accompanying text; *infra* notes 244–261 and accompanying text.

²⁴⁴ *Hashfast Techs. LLC v. Lowe (In re Hashfast Techs. LLC)*, No. 14-30725DM, slip op. at 2 (Bankr. N.D. Cal. 2016) (noting that future courts will have to determine on what date to value the cryptocurrency asset if the trustee recovers the asset's value rather than the asset itself).

tion.²⁴⁵ The petition date is the best date on which to value the bankruptcy asset because it fairly distributes the risk of volatile cryptocurrency prices while best effectuating the goal of recovering assets that rightfully belong in the bankruptcy estate.²⁴⁶

Because of the volatility of Bitcoin and other cryptocurrencies, choosing either the date of the transfer or the date of the recovery action risks giving the estate either more or less than it is entitled to under the Code.²⁴⁷ Cryptocurrencies decrease and increase in value, often with great and largely unpredictable fluctuations.²⁴⁸ The benefit that the transferee obtains at the moment of transfer is likely to increase or decrease as days, weeks, or months pass.²⁴⁹ Furthermore, the trustee's power to avoid fraudulent transfers extends to transfers made within two years of the petition date.²⁵⁰ In 2017, Bitcoin was at an all-time high—a high that has not yet been reached again, for example.²⁵¹ Forcing the return of the value of Bitcoin when it was at an unusually high point would not restore the estate to the condition that it would be in had the transfer never

²⁴⁵ See 11 U.S.C. § 550(a) (providing that the trustee has the option to recover the property or the value of the property). Although choosing the date of petition is the best option, it does not eliminate the problem of determining what a cryptocurrency is worth at any one moment in time. See Steffen & Perich, *supra* note 110 (noting that even cryptocurrency experts are likely to face difficulties in valuing cryptocurrencies due to unreliable pricing information and competing valuation models). There is currently no court-tested method of evaluating cryptocurrency prices, and it is unclear how dependable the current data we have on cryptocurrency prices is. *Id.*

²⁴⁶ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that the purpose of the trustee's recovery powers are to restore the bankruptcy estate to its rightful position, but that achieving this goal is complicated by the appreciation and depreciation of property); LEWIS, *supra* note 80, at 1 (discussing the fairness-based balancing goals of the Code: (1) to balance the interests of the debtor with those of the debtor's creditors, and (2) to treat all creditors "in an orderly, equitable, and efficient fashion"); see also *infra* notes 247–269 and accompanying text (arguing that the date of valuation should be the date of the bankruptcy petition).

²⁴⁷ See COLLIER ON BANKRUPTCY *supra* note 81, ¶ 550.02 (noting that the purpose of section 550(a) is to restore the estate to the position it would have been in if the transfer had not occurred and that this restoration is limited by the requirement that it be for the benefit of the estate); Rochester & Lersner, *supra* note 11 (commenting on the volatile value of cryptocurrencies).

²⁴⁸ See Reiff, *supra* note 209 (discussing the reasons that explain the drastic volatility of Bitcoin's value).

²⁴⁹ See Molinaro & Klaessy, *supra* note 18 (discussing how Bitcoin's volatility and valuation date were sticking points in *In re Hashfast Technologies LLC*); Reiff, *supra* note 209 (commenting on Bitcoin's great volatility); Rochester & Lersner, *supra* note 11 (noting that cryptocurrency volatility is a challenge in bankruptcy proceedings).

²⁵⁰ 11 U.S.C. § 548(a)(1) (providing that the power to avoid extends to "any transfer . . . made . . . on or within 2 years before the date of the filing of the petition" as long as that transfer qualifies as fraudulent under the section); see also *id.* § 547 (providing that in the context of preferential transfers, the trustee can avoid transfers made ninety days prior to the petition date and one-hundred days prior to the petition date if the transfer was made to an insider).

²⁵¹ See *Bitcoin Days Since All-Time High Chart*, BUY BITCOIN WORLDWIDE, <https://www.buybitcoinworldwide.com/bitcoin-days-since-high/> [<https://web.archive.org/web/20200321141414/https://www.buybitcoinworldwide.com/bitcoin-days-since-high/>] (placing the bitcoin's all-time-high price at \$19,891.00 on February 20, 2017).

happened, because the estate never would have included the cryptocurrency at that peak price in the first place.²⁵² Conversely, if the cryptocurrency asset greatly decreases in value between the date of the transfer and the date of the bankruptcy petition, then the estate will be unable to recover the value it needs in order to be where it would have been had the transfer not occurred.²⁵³ There exists a similar possibility that the estate will not be restored to its rightful condition as a result of depreciation if the court decides to value the cryptocurrency asset on the date of the recovery action.²⁵⁴

Due to the high volatility and uncertainty surrounding the prices of cryptocurrencies, the petition date is best suited to ensure that the estate recovers the amount that it is entitled to, ensuring that both the estate and the transferee are treated fairly.²⁵⁵ Due to the uncertainty that arises from cryptocurrency volatility, there will always be risks of quick appreciation and depreciation of cryptocurrency assets, both for the trustee and the transferee.²⁵⁶ Nonetheless, bankruptcy courts that choose the date of petition as the valuation date will be able to recover large appreciations in value that have occurred since the transfer date, which may have occurred up to two years prior to the filing date.²⁵⁷

There are analogous situations that support this approach wherein the court values a claim or asset based on the petition date.²⁵⁸ In the securities realm, for example, the claims of unsecured creditors are valued based on the

²⁵² See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that the purpose of the recovery power is to bring back into the estate what would have been part of it, had the transfer never occurred).

²⁵³ See *id.* (explaining that the goal of section 550(a) is to restore the estate to where it would be if the transfer had not occurred); HART ET AL., *supra* note 31, § 25.01 (discussing the general volatility of Bitcoin).

²⁵⁴ See COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (discussing the restorative policies behind the trustee's recovery powers); HART ET AL., *supra* note 31, § 25.01 (discussing Bitcoin's volatility); Reiff, *supra* note 209 (discussing the risk of volatile price with Bitcoin and some of the market factors underlying this risk).

²⁵⁵ 11 U.S.C. § 550(a) (explaining that recovery must be for the benefit of the estate); see Rochester & Lersner, *supra* note 11 (pointing out that cryptocurrency values are highly volatile).

²⁵⁶ See Molinaro & Klaessy, *supra* note 18 (discussing the issues of cryptocurrency volatility and valuation in the context of *In re Hashfast Technologies LLC*); Rochester & Lersner, *supra* note 11 (discussing problems posed by cryptocurrency volatility on bankruptcy).

²⁵⁷ See 11 U.S.C. § 547 (providing that the trustee may recover property for a preferential transfer that occurred ninety days prior to the filing of the petition); *id.* § 548 (providing that the trustee may recover property that the debtor fraudulently transferred to a third party up to two years prior to the petition date); Molinaro & Klaessy, *supra* note 18 (noting that in *In re Hashfast Technologies LLC*, the debate centered around the fact that the cryptocurrency had increased in value since the date of the transfer). The bankruptcy petition date, in short, tells creditors and other parties when they may no longer exercise certain out-of-bankruptcy rights against the debtor and the property of the estate. LEWIS, *supra* note 80, at 5–6.

²⁵⁸ See *Falcon Creditor Tr. v. First Ins. Funding Corp. (In re Falcon Prods., Inc.)*, Bankr. L. Rep. (CCH) ¶ 81,434, 2009 WL 10460048, at *7 (Bankr. E.D. Mo. 2009) (holding that the date of the bankruptcy petition is significant in the process of determining whether fraudulent transfer occurred).

date that the company or financial institution petitioned for bankruptcy.²⁵⁹ Courts also use the petition date to evaluate whether a preferential transfer from the debtor to a creditor has occurred.²⁶⁰ The petition date further determines the amount of disputed allowed claims and the debtor's eligibility for certain kinds of bankruptcy relief.²⁶¹ In these situations, it is the significance of this date that makes it the most equitable option in cases involving divergent priorities.²⁶²

A potential drawback to the petition-date approach, however, is apparent in situations where the cryptocurrency asset increases in value after the petition date, because valuing the asset as of the petition date precludes the trustee from recovering this higher post-petition value.²⁶³ Because recovery is meant to benefit the estate, a less-than-maximum recovery might appear to detract from the estate in a way that is contrary to section 550(a) of the Code.²⁶⁴ In situations such as this, however, certainty as to the contents of the estate and efficiency in paying creditors best serve the goals of the Code, as opposed to an approach striving for the highest recovery, and overall adopting the petition date as the date of valuation achieves certainty and efficiency.²⁶⁵

Uncertainty is likely to arise in situations where a transferee suspects that the transferred cryptocurrency asset is teetering on the brink of quick depreciation and attempts to delay the trustee's recovery action in order to return a lower cash value.²⁶⁶ Due to the uncertainty about how bankruptcy protections

²⁵⁹ Molinaro & Klaessy, *supra* note 18.

²⁶⁰ *See In re Falcon Prods. Inc.*, Bankr. L. Rep. (CCH) ¶ 81,434, at *7 (determining the presence of preferential transfers based on the date of the bankruptcy petition).

²⁶¹ 11 U.S.C. § 109(e) (providing that a debtor's total debt amounts determine the debtor's eligibility for Chapter 13 relief); *id.* § 502(b) (explaining that the court will evaluate disputed allowed claims based on the date of the bankruptcy petition).

²⁶² *See id.* § 301 (providing that the bankruptcy petition commences the bankruptcy case); *id.* § 109(e) (explaining debtor eligibility for bankruptcy relief based on the value of the debtor's debts at the time of petition); *id.* § 502(b) (mandating that the date of the bankruptcy petition determines whether the court should allow or disallow a claim).

²⁶³ *See* COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (discussing times when the estate is entitled to an increase in value).

²⁶⁴ *See* 11 U.S.C. § 550(a) (providing that recovery of the property or its value must be for the benefit of the estate).

²⁶⁵ *See* LEWIS, *supra* note 80, at 1 (explaining that the Code aims to wipe clean the debtor's debts and pay creditors "in an orderly, equitable, and efficient fashion," a goal that appears to value certainty over risk). The Code's search for certainty is illuminated by the policies that underlie the highly significant petition date and automatic stay. *See id.* at 7 (examining the policies that Congress considered important when enacting the automatic stay provision). The purpose of the automatic stay is to prevent "the chaos and wasteful depletion" of the estate that would result from frequent, hotly-debated litigation over issues such as valuation. *See id.* (citing *In re Curtis*, 40 B.R. 795, 799 (Bankr. D. Utah 1984)) (explaining why the automatic stay is essential to protecting the assets in the bankruptcy estate). Due in large part to cryptocurrencies' volatility, such chaotic debates are likely to occur frequently. Molinaro & Klaessy, *supra* note 18; Steffen & Perich, *supra* note 110.

²⁶⁶ *See* COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (explaining that bankruptcy courts should consider the goal of restoration when dealing with transferees who hold volatile assets, who

for swap agreements will be applied if courts classify cryptocurrencies as commodities, transferees may be encouraged to raise objections to the trustee's entitlement to recovery, and thereby prevent the trustee from bringing the action until the value of the cryptocurrency in question has significantly decreased.²⁶⁷ If cryptocurrencies are valued as of the date that the debtor files for bankruptcy protection, on the other hand, the value will be frozen at that moment in time and there will be fewer incentives for the transferee to prolong recovery in hopes of depreciation.²⁶⁸ For Bitcoin and other cryptocurrencies, which have no singular or true value and experience great volatility, valuation on the petition date best effectuates the restorative goal of recovery in the face of preferential and fraudulent transfers and the Code's overall focus on certainty and equitable distribution to creditors.²⁶⁹

CONCLUSION

Cryptocurrencies, which are little more than a decade old, have captivated the commercial and investment worlds. These novel assets have rapidly fluctuating values and are prone to theft. Cryptocurrency volatility poses challenges for bankruptcy proceedings, in which valuation protocols are often essential to the recovery of assets subject to preferential and fraudulent transfers. Although classifying cryptocurrencies as a commodity eliminates the need for costly valuation battles when the trustee can recover the transferred cryptocurrency itself, it does little to obviate the need for such valuation when someone steals or loses the cryptocurrency. In these cases, courts should turn to the date that the debtor files the bankruptcy petition as the date on which to value the cryptocurrency assets. Choosing the petition date as the date of valuation provides the most certainty to the greatest number of parties and therefore best effectuates the goals of the Bankruptcy Code.

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might benefit from a “wait and see” approach,” and who might therefore benefit from abusing the system and pushing back the date of recovery).

²⁶⁷ See 11 U.S.C. § 362(b)(17) (identifying protections for swap agreements); *id.* § 546(g) (noting that the trustee may not avoid transfers made pursuant to swap agreements); ILLMAN & COX, *supra* note 156, at 2 (discussing uncertainties regarding swap agreement protections for Bitcoin).

²⁶⁸ See 11 U.S.C. § 550(a) (providing that the court may permit the trustee to recover the value of the transferred property, and declining to define the time at which this must occur); COLLIER ON BANKRUPTCY, *supra* note 81, ¶ 550.02 (noting the problems associated with transferees with volatile assets taking a “wait and see” approach”).

²⁶⁹ See *USAA Fed. Sav. Bank v. Thacker (In re Taylor)*, 599 F.3d 880, 890 (9th Cir. 2010) (citing *Aalfs v. Wirum (In re Straightline Invs., Inc.)*, 525 F.3d 870, 883 (9th Cir. 2008)) (discussing section 550(a) and its goal of “restor[ing] the estate to the financial condition it would have enjoyed if the transfer had not occurred”); LEWIS, *supra* note 80, at 1 (discussing the Code's focus on equitably and efficiently distributing payments to creditors).