

The Virtual Currency Regulatory Framework in Global Context

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By: Dr. Sharon Brown-Hruska¹ and Trevor Wagener²

Abstract:

Legal Context:

Distinct regulatory frameworks for virtual currencies are taking shape in the United States and other key markets. Contemporaneously, litigation testing regulators' jurisdictional assertions and private plaintiffs' standing is making its way through United States and foreign courts. Potentially incompatible regulatory and legal approaches to virtual currencies across key markets may have enormous implications for the development of virtual currency markets.

Key Points:

- As of July 2018, regulatory, enforcement, and private litigation developments have followed a different path in the United States than in other major jurisdictions around the world. Whereas the United States has attempted to regulate virtual currencies by applying longstanding commodity, securities, and anti-money laundering frameworks, other major jurisdictions have taken very different approaches.
- Starting in late 2017, United States regulators began focusing substantial regulatory attention to virtual currency oversight, resulting in a veritable explosion of regulatory guidance, enforcement actions and class action filings.

¹ Dr. Sharon Brown-Hruska is Managing Director in the Washington, DC office of National Economic Research Associates, Inc. Dr. Brown-Hruska was previously Commissioner and Acting Chairman of the United States Commodity Futures Trading Commission, a federal regulator that has asserted jurisdiction over virtual currency markets. Dr. Brown-Hruska has a Ph.D. in economics from Virginia Polytechnic Institute and State University.

² Trevor Wagener is a Consultant in the Washington, DC office of National Economic Research Associates, Inc. Mr. Wagener was previously a commodities analyst and derivatives trader. Mr. Wagener graduated with an M.S. in applied economics from Johns Hopkins University in 2017 and a B.A. with distinction in ethics, politics, and economics from Yale University in 2011.

- This trend only accelerated further in early 2018. The first three months of 2018 featured more U.S. virtual currency regulatory guidance, enforcement actions, and private action filings than all of 2017.
- In total, NERA has identified 71 U.S. enforcement actions and 38 private civil actions related to virtual currency, including 29 putative class actions. 2018 accounts for an outright majority of all virtual currency enforcement actions, private civil actions, and putative class actions.
- An outright majority of U.S. private actions filed in matters connected to virtual currencies have been securities class actions, and as a result the issues raised have frequently included familiar artificial price and Rule 10b-5 stock-drop elements.
- The unique features of virtual currency and related digital assets like smart contracts raise distinct questions that need to be answered in many matters.
- As of July 2, 2018, virtual currencies are collectively valued at nearly \$300 billion, following a decline from over \$600 billion in December 2017.

Practical Significance:

Depending on how United States courts respond to enforcement actions and private litigation, virtual currency markets may face a wide range of compliance expectations and costs of doing business, with potentially significant implications for further financial technology innovation involving distributed ledger technology. If other key markets' regulators adopt incompatible or burdensome compliance regimes, virtual currency market fragmentation may result, and certain markets may push virtual currencies underground.

1. Introduction

2017 saw an avalanche of regulatory guidance, enforcement actions and class action filings related to virtual currency. This development of a regulatory framework and establishment of enforcement and private litigation trends for virtual currency coincided with a dramatic increase in virtual currency market capitalizations and a wave of initial coin offerings that occurred eight years after the creation of Bitcoin first brought the concept of virtual currency to broad public awareness. As of March 26, 2018, virtual currencies are collectively valued at over \$300 billion.

Although virtual currency market capitalizations have fallen by nearly 50% from their peak in December 2017, regulatory guidance and legal actions have only accelerated since then: the first three months of 2018 featured more virtual currency regulatory guidance, enforcement actions, and private action filings than all of 2017. In total, NERA has identified 46 enforcement actions and 25 private action filings related to virtual currency, with 2018 currently on pace to account for an outright majority of all virtual currency enforcement actions and putative securities class actions.

An outright majority of private actions filed in matters connected to virtual currencies have been securities class actions, and as a result the issues raised have frequently included familiar artificial price and Rule 10b-5 stock-drop elements. However, the unique features of virtual currency and related digital assets like smart contracts create additional distinct questions that need to be answered in many matters.

This article is designed as a primer that introduces readers to the concept and practice of virtual currency and the blockchain. It updates and expands upon a previous study of trends in virtual currency regulation and litigation,³ incorporating the global regulatory frameworks, recent enforcement actions defining the direction in the U.S. markets, and emerging trends in U.S. private virtual currency litigation, particularly securities class actions.

³ Sharon Brown-Hruska and Trevor Wagener, "Recent Trends in Virtual Currency Regulation, Enforcement, and Litigation," May 18, 2018, available at http://www.nera.com/content/dam/nera/publications/2018/PUB_Virtual_Currency_052118.pdf.

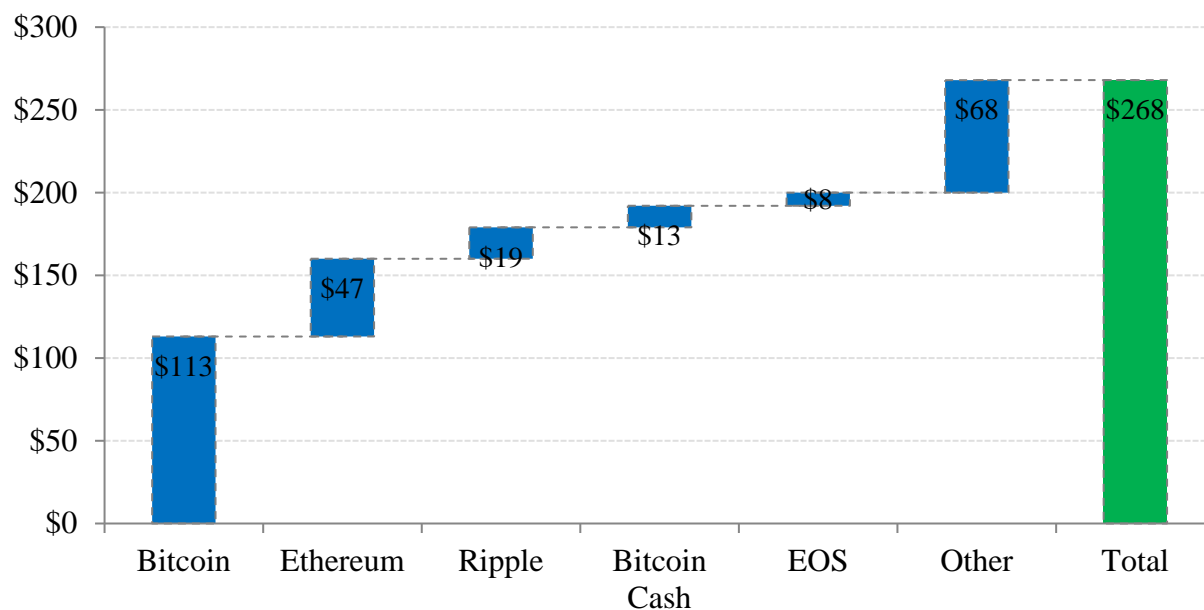
2. Background

Virtual Currencies and Cryptocurrencies

A virtual currency is a digital token “representation of value that functions as a medium of exchange, a unit of account, and/or a store of value,” but “does not have legal tender status.”⁴ If the virtual currency can be readily expressed in or substituted for recognized currencies,⁵ it is called a convertible virtual currency.⁶ Convertible virtual currencies have had volatile total market capitalizations, rising to over \$600 billion on December 18, 2017 and falling to \$268 billion as of July 2, 2018.⁷ These market capitalizations suggest markets have recently considered convertible virtual currencies collectively at least as valuable as Wells Fargo.⁸ Chart 1 below shows the market capitalization of convertible virtual currencies as of February 8, 2018.

Chart 1
Market Capitalization of Convertible Virtual Currencies

Billions of U.S. Dollars



Notes and Sources: Data from Coinmarketcap.com, as of July 2, 2018.

⁴ Internal Revenue Service, “Notice 2014-21,” March 25, 2014, p. 1, available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>, accessed on February 13, 2018.

⁵ E.g., U.S. dollars.

⁶ Internal Revenue Service, “Notice 2014-21,” March 25, 2014, p.1, available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>, accessed on February 13, 2018.

⁷ Coinmarketcap.com, “Cryptocurrency Market Capitalizations,” available at <https://coinmarketcap.com/> and <https://web.archive.org/web/20171218220338/https://coinmarketcap.com>, accessed on March 26, 2018.

⁸ Wells Fargo had a \$257 billion market cap as of March 26, 2018, according to Bloomberg, LP.

The most prominent subset of convertible virtual currencies, as of February 2018, called cryptocurrencies, utilizes “cryptographic proof” rather than trusted third parties such as financial intermediaries, as a basis for electronic payments in the virtual currency.⁹ Bitcoin, the largest convertible virtual currency by market capitalization as of February 2018,¹⁰ is an example of a cryptocurrency that utilizes cryptography and unique digital signatures to allow for decentralized, peer-to-peer electronic payments.¹¹

Although virtual currencies existed prior to Bitcoin,¹² Bitcoin’s introduction in 2009 changed the paradigm for convertible virtual currencies by establishing a robust decentralized architecture for cryptocurrency peer-to-peer payments. This architecture includes public and private keys, the blockchain ledger, and open-source software facilitating the use of decentralized networks of computers, called “miners,” to solve complex mathematical algorithms in order to validate and log peer-to-peer transactions on the blockchain ledger.¹³

Blockchain

Distributed ledger technology, better known as blockchain, generally consists of an open, decentralized ledger that allows each party on the blockchain access to the entire database and provides no party with complete control of the data. Generally this decentralization means a “node” system is used whereby multiple nodes can be used to engage in transactions, and records of those

⁹ Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” October 31, 2008, p. 1, available at <https://bitcoin.org/bitcoin.pdf>, accessed on February 13, 2018.

See also Commodity Futures Trading Commission, “A CFTC Primer on Virtual Currencies,” October 17, 2017, p. 4, available at http://www.cftc.gov/idc/groups/public/documents/file/labcftc_primerurrencies100417.pdf, accessed on February 13, 2018.

¹⁰ Bitcoin’s market capitalization on February 20, 2018 was approximately \$200 billion, more than double the market capitalization of the second largest cryptocurrency, Ethereum. *See* Cryptocurrency Market Capitalizations, available at <https://coinmarketcap.com/all/views/all/>, accessed February 20, 2018.

¹¹ Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” October 31, 2008, p. 1, available at <https://bitcoin.org/bitcoin.pdf>, accessed on February 13, 2018.

See also Commodity Futures Trading Commission, “A CFTC Primer on Virtual Currencies,” October 17, 2017, p. 5, available at http://www.cftc.gov/idc/groups/public/documents/file/labcftc_primerurrencies100417.pdf, accessed on February 13, 2018.

¹² *See, for example*, NEWSBTC, “A Brief History of Digital Currency,” November 1, 2015, available at <https://www.newsbtc.com/2015/11/01/a-brief-history-of-digital-currency/>, accessed on February 13, 2018.

¹³ Miners are compensated via transaction fees and newly created bitcoins that are supplied to the market at a predefined rate. Commodity Futures Trading Commission, “A CFTC Primer on Virtual Currencies,” October 17, 2017, pp. 5-6, available at http://www.cftc.gov/idc/groups/public/documents/file/labcftc_primerurrencies100417.pdf, accessed on February 13, 2018.

See also Satoshi Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” October 31, 2008, pp. 1-8, available at <https://bitcoin.org/bitcoin.pdf>, accessed on February 13, 2018.

transactions are then forwarded to all other nodes. In order to prevent “double spending,”¹⁴ a major concern with virtual currencies, each transaction recorded in the ledger is made unalterable via complex algorithms that ensure each transaction is mathematically linked to every previous transaction. Consequently, an adjustment made to one transaction would require the recalculation of all subsequent transactions, a computationally prohibitive requirement that should, in principle, ensure that all recorded transactions are permanent and inviolable.¹⁵

Virtual Currency Exchanges

In order to purchase units of convertible virtual currencies using legal tender, or to convert units of a convertible virtual currency into legal tender (or units of other convertible virtual currencies that could in turn be converted into legal tender), users transact with a financial institution known as a virtual currency exchange (or cryptocurrency exchange).¹⁶ Virtual currency exchanges have come under increasing regulatory scrutiny as the entry/exit points from cryptocurrencies whose transaction histories are usually largely anonymous. Consequently, financial regulators, such as the Securities and Exchange Commission (“SEC”) and the Commodity Futures Trading Commission (“CFTC”), Bank Secrecy Act/Anti-Money Laundering (“BSA/AML”) authorities like the U.S. Financial Crimes Enforcement Network (“FinCEN”), tax authorities like the Internal Revenue Service (“IRS”), and economic and trade sanctions authorities like the Office of Foreign Assets Control (“OFAC”) have all increasingly focused on virtual currency exchanges as the points on cryptocurrency networks that are most amenable to regulation and scrutiny, investigations, and enforcement actions or collections efforts.¹⁷ The IRS issued guidance in 2014 stating that

¹⁴ Double spending occurs when the owner of a virtual currency attempts to use the same individual unit of the virtual currency twice.

¹⁵ See Marco Iansiti and Karim R. Lakhani, “The Truth About Blockchain,” *Harvard Business Review* (January-February 2017), available at <https://hbr.org/2017/01/the-truth-about-blockchain>, accessed on February 13, 2018.

See also Securities and Exchange Commission, “Investor Bulletin: Initial Coin Offerings,” July 25, 2017, available at https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings, accessed on February 13, 2018.

¹⁶ “A virtual currency exchange is a person or entity that exchanges virtual currency for fiat currency, funds, or other forms of virtual currency. Virtual currency exchanges typically charge fees for these services.” Securities and Exchange Commission, “Investor Bulletin: Initial Coin Offerings,” July 25, 2017, available at https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings, accessed on February 13, 2018.

“In a typical transaction, the buyer of virtual currency provides sovereign currency to a business that either holds value in the form of a desired virtual currency or who upon receipt of sovereign currency executes a purchase of the virtual currency from another source. [...] These transactions are money transmission [...]” Washington State Department of Financial Institutions, “Interim Regulatory Guidance on Virtual Currency Activities,” December 8, 2014, p. 3, available at <https://dfi.wa.gov/documents/money-transmitters/virtual-currency-interim-guidance.pdf>, accessed on February 13, 2018.

See also Financial Crimes Enforcement Network, “Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies,” March 18, 2013, available at <https://www.fincen.gov/resources/statutes-regulations/guidance/application-fincens-regulations-persons-administering>, accessed on February 13, 2018.

¹⁷ See, for example, Financial Crimes Enforcement Network, “Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies,” March 18, 2013, available at <https://www.fincen.gov/resources/statutes-regulations/guidance/application-fincens-regulations-persons-administering>, accessed on February 13, 2018.

convertible virtual currency is “for federal tax purposes, [] treated as property,”¹⁸ but has yet to issue further substantive guidance.

Initial Coin Offerings

In recent years, a substantial number of new virtual currencies have been sold via initial coin offerings (“ICOs”), also called token sales. ICOs typically involve the sale of digital tokens to the public in order to raise capital for projects. The projects intended to be capitalized via ICOs are commonly connected to the new virtual currency, such as the development of a blockchain or open source software to support a network on which the digital tokens can be used, or the creation of a service that is intended to use the virtual currency as an access tool.¹⁹

According to a December 2017 NERA Economic Consulting report on ICOs (the “NERA ICO Report”), ICOs raised more than \$2 billion from January through August of 2017 and commonly involved the sale of digital tokens prior to the creation of the underlying services.²⁰ The NERA ICO Report concluded that ICOs might attract the attention of regulators and private litigants due to the conjunction of large quantities of capital raised via ICOs, negative returns on the median ICO token, and claims that some ICOs have been promoted using white papers that downplay the risks involved.²¹

Smart Contracts and Decentralized Autonomous Organizations

Smart contracts have been defined as programs or systems that automatically move, assign, or transact in digital assets according to pre-specified rules that are enforced by a peer network.²² Many recent smart contract projects are connected to a peer network through distributed ledger technology, and some have attempted to create long-term projects called decentralized

See also, for example, Internal Revenue Service, “Notice 2014-21,” March 25, 2014, pp. 1, 3, available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>, accessed on February 13, 2018.

¹⁸ Internal Revenue Service, “Notice 2014-21,” March 25, 2014, p. 2, available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>, accessed on February 13, 2018.

¹⁹ *See* Securities and Exchange Commission, “Investor Bulletin: Initial Coin Offerings,” July 25, 2017, available at https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings, accessed on February 13, 2018.

²⁰ Timothy McKenna and Sammy Chu, “A Look at Initial Coin Offerings,” *NERA Economic Consulting*, December 12, 2017, p. 1, available at http://www.nera.com/content/dam/nera/publications/2017/PUB_A_Look_at_ICOs_1217.pdf, accessed on February 13, 2018.

²¹ Timothy McKenna and Sammy Chu, “A Look at Initial Coin Offerings,” *NERA Economic Consulting*, December 12, 2017, pp. 1, 6, available at http://www.nera.com/content/dam/nera/publications/2017/PUB_A_Look_at_ICOs_1217.pdf, accessed on February 13, 2018.

²² *See* Kevin Delmolino, et al., “Step by Step Towards Creating a Safe Smart Contract: Lessons and Insights from a Cryptocurrency Lab,” November 18, 2015, p. 1, available at <https://allquantor.at/blockchainbib/pdf/delmolino2015step.pdf>, accessed on March 9, 2018. *See also* Vitalik Buterin, “Ethereum White Paper: A Next Generation Smart Contract & Decentralized Application Platform,” 2014, p. 1, available at https://www.weusecoins.com/assets/pdf/library/Ethereum_white_paper-a_next_generation_smart_contract_and_decentralized_application_platform-vitalik-buterin.pdf, accessed on March 9, 2018.

autonomous organizations (sometimes called “virtual organizations”) that have some analogous features to funds or companies. For example, one white paper for a smart contract project on the Ethereum blockchain described a decentralized autonomous organization as

[A] virtual entity that has a certain set of members or shareholders which, perhaps with a 67% majority, have the right to spend the entity’s funds and modify its code. The members would collectively decide on how the organization should allocate its funds. [...] This essentially replicates the legal trappings of a traditional company or non-profit but using only cryptographic blockchain technology for enforcement.²³

One prominent example of a decentralized autonomous organization was The DAO, which was created with the stated intent to create a lasting smart contract on the Ethereum blockchain that would formalize, automate, and enforce contract terms through software.²⁴ The DAO raised funds from investors in 2016 in exchange for DAO Tokens, but an attacker exploited a vulnerability in The DAO’s code to take control of approximately one-third of the Ethereum tokens invested in The DAO.²⁵ In order to make investors whole, the group behind The DAO endorsed a “hard fork” on the Ethereum blockchain, allowing those investors who switched to the new version of the blockchain to exchange their DAO Tokens for Ethereum tokens.²⁶

3. Contrasting Global Regulatory Approaches

Overview

As convertible virtual currencies have only recently become widespread, most regulators and supervisory authorities around the globe are still developing regulatory frameworks for virtual currencies. Many of these international virtual currency regulatory frameworks are inconsistent and even mutually incompatible, raising the specter of potential market fragmentation. Because there are nuanced differences between the regulatory frameworks of almost all countries, this section will cover regulatory developments in a curated sample of major jurisdictions outside of the United States (“U.S.”): The United Kingdom, Japan, South Korea, and China.

²³ Vitalik Buterin, “Ethereum White Paper: A Next Generation Smart Contract & Decentralized Application Platform,” 2014, pp. 1, 23, available at https://www.weusecoins.com/assets/pdf/library/Ethereum_white_paper-a_next_generation_smart_contract_and_decentralized_application_platform-vitalik-buterin.pdf, accessed on March 9, 2018.

²⁴ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, pp. 1, 3-4, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

²⁵ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, p. 9, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

²⁶ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, pp. 9-10, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

Table 1
Virtual Currency Regulatory Frameworks in Select Countries

Jurisdiction	Tax Framework	Anti-Money Laundering Framework	Securities & Commodities Framework
United Kingdom	Virtual currencies are covered by corporation, income, and capital gains taxes, but not VAT.	Government moving to require AML reporting by virtual currency exchanges. Under EU-wide reforms, AML rules will apply to virtual currency exchanges, platforms, and wallet services.	Virtual currencies are not considered securities or commodities, but virtual currency derivatives are considered financial instruments under MiFID II.
Japan	Consumption taxes on transfers of cryptocurrency were abolished as of 1 July 2017, but capital gains in virtual currency are taxable.	Virtual currency exchanges must register and follow AML requirements like Know Your Customer and suspicious transaction reporting.	Virtual currencies are considered means of payment and not financial products, so exchange-listed virtual currency derivatives are prohibited. platforms must register, meet capital requirements, and follow Japan's means of payment regulations.
South Korea	Capital gains on virtual currency are taxed at 24.2%.	Know Your Customer rules require that virtual currency trading be tied to bank accounts with investors' real names. Banks are required to follow AML policies with respect to those accounts.	ICOs, margin trading in virtual currency, and virtual currency futures were banned in 2017. In 2018, South Korea moved toward removing the ban on domestic ICOs.
China	N/A	China has effectively banned financial institutions from intermediating virtual currency transactions.	China has banned fundraising through ICOs, warned banks not to conduct virtual currency transactions, and effectively banned private provision of virtual currency services.

The United Kingdom

On 3 March 2014, The United Kingdom's HM Revenue and Customs released a policy paper that broadly labeled profits and losses on virtual currencies as subject to the corporation tax, income tax, and capital gains tax, but generally not subject to the value-added tax ("VAT").²⁷ In March 2015, the United Kingdom's Treasury announced that "the government intends to apply anti-money laundering regulation to digital currency exchanges, to support innovation and prevent criminal use."²⁸ On 15 December 2017, the European Commission published a fact sheet on its updated Anti-Money Laundering directive that extended anti-money laundering and counter terrorism financing rules to virtual currency exchanges, platforms, and wallet services.²⁹

On 6 April 2018, the Financial Conduct Authority announced that while cryptocurrencies are not independently regulated and are not considered "currencies or commodities for regulatory purposes," cryptocurrency derivatives like futures, options, and contracts for differences are "capable of being financial instruments under the Markets in Financial Instruments Directive II."³⁰

Japan

On 25 May 2016, Japan passed the Crypto Currency Act, which classified virtual currency as a means of payment and required virtual currency exchange businesses to register, meet capital requirements, follow Know Your Customer rules, report suspicious transactions, submit to periodic audits, separate customer funds from firm funds, and follow Japan's rules for means of payment and settlement. The law went into effect on 1 April 2017.³¹ Because Japan has classified virtual currencies as means of payment and not financial products such as securities, Japan does not allow domestic, exchange-listed virtual currency derivatives.³² However,

²⁷ United Kingdom HM Revenue and Customs, "Revenue and Customs Brief 9 (2014): Bitcoin and other cryptocurrencies," March 3, 2014, available at <https://www.gov.uk/government/publications/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies>.

²⁸ United Kingdom HM Treasury, "Digital currencies: response to the call for information," March 2015, p. 4, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/414040/digital_currencies_response_to_call_for_information_final_changes.pdf.

²⁹ European Commission, "Strengthened EU rules to prevent money laundering and terrorism financing," December 15, 2017, available at http://ec.europa.eu/newsroom/just/document.cfm?action=display&doc_id=48935.

³⁰ United Kingdom Financial Conduct Authority, "FCA statement on the requirement for firms offering cryptocurrency derivatives to be authorized," April 6, 2018, available at <https://www.fca.org.uk/news/statements/cryptocurrency-derivatives>.

³¹ Kazuyuki Shiba, "Enforcement of Japanese Law on Crypto Currency and Future Issues," *Institute for International Monetary Affairs*, April 10, 2017, available at https://www.iima.or.jp/Docs/column/2017/0410_e.pdf; Japan Financial Services Agency, "Crypto Currency Act (A Bill to Revise Some of the Banking Laws and Others to Respond to Environmental Changes Such as Progress in Information and Communication Technology)," available at <https://www.fsa.go.jp/common/diet/190/01/shinkyuu.pdf>.

³² Gareth Allan and Yuki Hagiwara, "Bitcoin Futures Get Cold Shoulder From Japanese Regulator," *Bloomberg*, January 24, 2018, available at <https://www.bloomberg.com/news/articles/2018-01-24/bitcoin-futures-get-cold-shoulder-from-japan-financial-regulator>; Japan Financial Services Agency, "Crypto Currency Act (A Bill to Revise Some of the Banking Laws

according to an analysis by Greenberg Traurig LLP, contracts for differences may be permitted in some circumstances.³³

At least sixteen virtual currency exchanges were registered with Japan's Financial Services Agency as of 7 March 2018, and Japanese authorities have issued public warnings to exchanges who had yet to register and comply with the Crypto Currency Act.³⁴ In addition, Japanese regulators issued multiple punishment notices to exchanges for inadequate controls following a \$530 million theft of virtual currency from the Coincheck virtual currency exchange.³⁵

Consumption taxes on transfers of virtual currency were abolished in 2017.³⁶ However, capital gains on virtual currencies are taxable in Japan.³⁷ As of July 5, 2018, approximately 59% of Bitcoin transaction volume was attributed to Japanese Yen.³⁸

South Korea

In September 2017, South Korea's Financial Services Commission banned ICOs as a fundraising tool and banned margin trading in virtual currencies.³⁹ On 6 December 2017, South Korea's Financial Services Commission followed up on the ICO ban with a new ban on the trading of

and Others to Respond to Environmental Changes Such as Progress in Information and Communication Technology),” available at <https://www.fsa.go.jp/common/diet/190/01/shinkyuu.pdf>.

³³ Makoto Koinuma, Koichiro Ohashi, and Yukari Sakamoto, “New Law & Regulations on Virtual Currencies in Japan,” *Greenberg Traurig LLP*, January 24, 2017, available at <https://www.lexology.com/library/detail.aspx?g=b32af680-1772-4983-8022-a2826878bcd5>.

³⁴ Evelyn Cheng, “Japanese regulator warns major cryptocurrency exchange for operating without a license, bitcoin falls,” *CNBC*, March 23, 2018, available at <https://www.cnn.com/2018/03/23/japanese-regulator-warns-major-cryptocurrency-exchange-for-operating-without-a-license-bitcoin-falls.html>; Japan Financial Services Agency, “Study Group on Virtual Currency Exchange Industry (Part 2) Minutes,” April 27, 2018, available at <https://www.fsa.go.jp/news/30/singi/20180427-2.html>.

³⁵ *Reuters*, “Japanese authorities issue punishments to several cryptocurrency exchanges,” March 7, 2018, available at <https://www.cnn.com/2018/03/07/japanese-authorities-issue-punishments-to-several-cryptocurrency-exchanges.html>; See also Japan Financial Services Agency, “Warning Letters,” available at https://www.fsa.go.jp/policy/virtual_currency02/Binance_keikokushilyo.pdf, <https://www.fsa.go.jp/news/29/20180209.html>, and <https://www.fsa.go.jp/news/30/singi/20180427-2.html>.

³⁶ Kazuyuki Shiba, “Enforcement of Japanese Law on Crypto Currency and Future Issues,” *Institute for International Monetary Affairs*, April 10, 2017, available at https://www.iima.or.jp/Docs/column/2017/0410_e.pdf.

³⁷ Yuko Takeo and Maiko Takahashi, “Crypto Investors Face Tax of Up to 55% in Japan,” *Bloomberg*, February 8, 2018, available at <https://www.bloomberg.com/news/articles/2018-02-08/crypto-investors-in-japan-face-tax-of-up-to-55-on-their-takings>; See also Japan National Tax Agency, “Capital Gains,” available at <https://www.nta.go.jp/law/joho-zeikaishaku/shotoku/shinkoku/171127/01.pdf>.

³⁸ Cryptocompare, “Bitcoin (BTC) Volume by Currency,” July 5, 2018, available at <https://www.cryptocompare.com/coins/btc/analysis/USD>.

³⁹ *Reuters*, “South Korea bans all new cryptocurrency sales,” September 28, 2017, available at <https://www.cnn.com/2017/09/28/south-korea-bans-all-new-cryptocurrency-sales.html>; South Korea Financial Services Commission, “Joint Task force for Virtual Currency-Related Institutions,” available at http://www.fsc.go.kr/info/ntc_news_view.jsp?bbsid=BBS0030&page=1&sch1=&sword=&r_url=&menu=7210100&no=32085.

virtual currency futures arising from South Korea's lack of recognition of virtual currency as a security, commodity, or financial interest that could serve as a futures contract's underlying asset.⁴⁰ However, on 8 March 2018, reports emerged that South Korean regulators were preparing to allow ICOs subject to upcoming regulations,⁴¹ and in May 2018 South Korea's National Assembly officially proposed to allow domestic ICOs.⁴²

In January 2018, South Korean regulators announced Know Your Customer requirements for virtual currency trading and associated bank accounts, effectively subjecting virtual currency trading to anti-money laundering compliance requirements.⁴³ South Korea's government announced it would collect taxes on virtual currency capital gains at a 24.2% tax rate at approximately the same time it imposed the Know Your Customer requirements.⁴⁴

China

In 2013, China barred financial institutions from using Bitcoin.⁴⁵ In March and April 2014, the People's Bank of China warned banks that continued to provide financial services to virtual currency entities to cease and desist, effectively cutting virtual currencies off from domestic

⁴⁰ Yoon Yung Sil, "S. Korean Financial Authorities Ban Bitcoin Futures Trading," *Business Korea*, December 7, 2017, available at <http://www.businesskorea.co.kr/news/articleView.html?idxno=20022>; See also David Dinkins, "In Unexpected Move, South Korean Regulator Suddenly Bans Bitcoin Futures Trading," December 7, 2017, available at <https://cointelegraph.com/news/in-unexpected-move-south-korean-regulator-suddenly-bans-bitcoin-futures-trading>.

⁴¹ Kim Yoo-chul, "Korea to allow ICOs with new regulations," *The Korea Times*, March 8, 2018, available at https://www.koreatimes.co.kr/www/biz/2018/03/367_245242.html.

⁴² Yoon Young-sil, "National Assembly Calls for Measures to Allow ICOs," *BusinessKorea*, May 29, 2018, available at <http://www.businesskorea.co.kr/news/articleView.html?idxno=22613>.

⁴³ Zheping Huang, "South Korea will require real-name crypto trading by the end of the month," *Quartz*, January 22, 2018, available at <https://qz.com/1186324/south-korea-is-making-real-name-cryptocurrency-trading-mandatory-by-january-30/>; Sarah Aberg and Bochan Kim, "South Korea Steps Up Oversight of Cryptocurrency Exchanges," *Sheppard Mullin Richter & Hampton LLP*, March 30, 2018, available at <https://www.lexology.com/library/detail.aspx?g=81c02b32-cdbf-4e12-beae-91b5a7395872>.

⁴⁴ *Yonhap*, "Gov't to collect 24.2 pct of taxes on income by virtual currency exchanges," January 22, 2018, available at <http://english.yonhapnews.co.kr/news/2018/01/22/0200000000AEN20180122002200320.html>.

⁴⁵ Alex Hern, "Bitcoin plummets as China's largest exchange blocks new deposits," *The Guardian*, December 18, 2013, available at <https://www.theguardian.com/technology/2013/dec/18/bitcoin-plummets-china-payment-processors-digital-cryptocurrency>; People's Bank of China, "Bitcoin related matters answered reporters," December 5, 2013, available at <https://web.archive.org/web/20140420201844/www.pbc.gov.cn/publish/goutongjiaoliu/524/2013/20131205153950799182785/20131205153950799182785.html>.

Chinese financial institutions.⁴⁶ In September 2017, China banned fundraising through ICOs.⁴⁷ In effect, China has banned domestic private sector virtual currency firms, pushing Chinese virtual currency investors to use offshore financial services and virtual currency platforms. However, virtual currency mining remains substantial in China—as much as 70% of Bitcoin mining occurs in China—despite China’s efforts to suppress domestic virtual currency financial services.⁴⁸

International Contrasts

Many of these regulatory frameworks appear to contrast with each other, and some appear internally inconsistent. China and South Korea offer noteworthy examples of apparent internal contradictions:

- China remains a dominant player in virtual currency mining while suppressing domestic virtual currency financial services.
- South Korea’s prohibition on virtual currency futures results from its failure to recognize virtual currency as a security, commodity, or other financial interest, but South Korea’s move toward legalizing ICOs would appear to mark a recognition that virtual currencies can represent financial interests or instruments.

With respect to differences between different jurisdictions’ regulatory frameworks, noteworthy examples include:

- Japan’s and South Korea’s prohibitions on domestic trading of virtual currency futures appear to fragment those markets from others that allow virtual currency derivatives in regulated markets, such as the United Kingdom.
- While the United Kingdom, Japan, and South Korea have all moved to integrate virtual currency services with their financial sectors and apply Know Your Customer and/or anti-money laundering requirements, China has effectively banned its domestic financial

⁴⁶ Michael J. Casey, “Bitcoin Prices Plummet on Reports China to Close Exchange Bank Accounts,” *Wall Street Journal*, March 27, 2014, available at <https://www.wsj.com/articles/bitcoin-prices-plummet-on-reports-china-to-close-exchange-bank-accounts-1395934157>; Sid M. Zagaeski, “Bank of China Issues New Warnings, Bitcoin Price Drops,” *CoinReport*, April 25, 2014, available at <https://coinreport.net/bank-of-china-warns-bitcoin-reacts/>; Lauren Gloudeman, “Bitcoin’s Uncertain Future in China,” U.S.-China Economic and Security Review Commission, May 12, 2014, available at <https://www.uscc.gov/sites/default/files/Research/USCC%20Economic%20Issue%20Brief%20-%20Bitcoin%20-%202005%2012%2014.pdf>.

⁴⁷ Jon Russell, “China has banned ICOs,” *TechCrunch*, September 4, 2017, available at <https://techcrunch.com/2017/09/04/chinas-central-bank-has-banned-icos/>; China Insurance Regulatory Commission, “announcement of the CIRC on the Prevention of the Risk of Subsidy Issuance,” September 4, 2017, available at <https://web.archive.org/web/20171211192655/http://www.circ.gov.cn/web/site0/tab6554/info4080736.htm>.

⁴⁸ Morgan E. Peck, “Why the Biggest Bitcoin Mines Are in China,” *IEEE Spectrum*, October 4, 2017, available at <https://spectrum.ieee.org/computing/networks/why-the-biggest-bitcoin-mines-are-in-china>; Andrew Marshall, “Local Media: Floods in China Heavily Damage Major Crypto Mining Operation,” *Cointelegraph*, July 1, 2018, available at <https://cointelegraph.com/news/local-media-floods-in-china-heavily-damage-major-crypto-mining-operation>.

institutions from providing financial services to virtual currency platforms. In effect, China has prevented the application of Know Your Customer and anti-money laundering rules to virtual currency markets through the traditional financial institution channels used in most other markets.

As will be explored throughout this article, these and other international jurisdictions offer substantial contrasts and even contradictions with the developing U.S. regulatory framework for virtual currencies.

4. The Developing United States Regulatory Framework

United States Regulatory Overview

As of July 2018, the U.S. regulatory framework for virtual currencies has taken shape. Several prominent federal regulators have articulated particular regulatory frameworks or issued substantial relevant guidance, and several states have promulgated rules, guidance, or consistent patterns of enforcement actions that are illustrative of the short- to medium-term shape of regulatory trends for virtual currencies.

Federal and state laws do not currently provide for consolidated, comprehensive oversight of virtual currency markets by a single regulator. However, multiple regulators are increasingly coordinating to provide a “multifaceted, multi-regulatory” approach to virtual currency markets:⁴⁹

- The SEC has asserted authority over virtual currencies that have features consistent with securities, and has asserted its enforcement authority over ICOs and similar capital-raising activities.
- The CFTC has declared virtual currencies to be commodities and thus asserted its full jurisdiction over virtual currency derivatives and derivatives markets, as well as virtual currency spot and cash markets for fraud and manipulation enforcement purposes.
- FinCEN oversees BSA/AML compliance for money transmitters and exchangers of virtual currencies for fiat currency or other virtual currencies. FinCEN generally treats virtual currencies as equivalent to transfers of cash or cash equivalents for reporting purposes.
- The IRS treats virtual currencies as property for capital gains tax purposes.
- OFAC treats transactions in virtual currencies issued by sanctioned regimes as potential extensions of credit to sanctioned regimes.

⁴⁹ Commodity Futures Trading Commission, “CFTC Backgrounder on Oversight of and Approach to Virtual Currency Futures Markets,” January 4, 2018, pp. 1-2, available at http://www.cftc.gov/idx/groups/public/@newsroom/documents/file/backgrounder_virtualcurrency01.pdf, accessed on March 9, 2018.

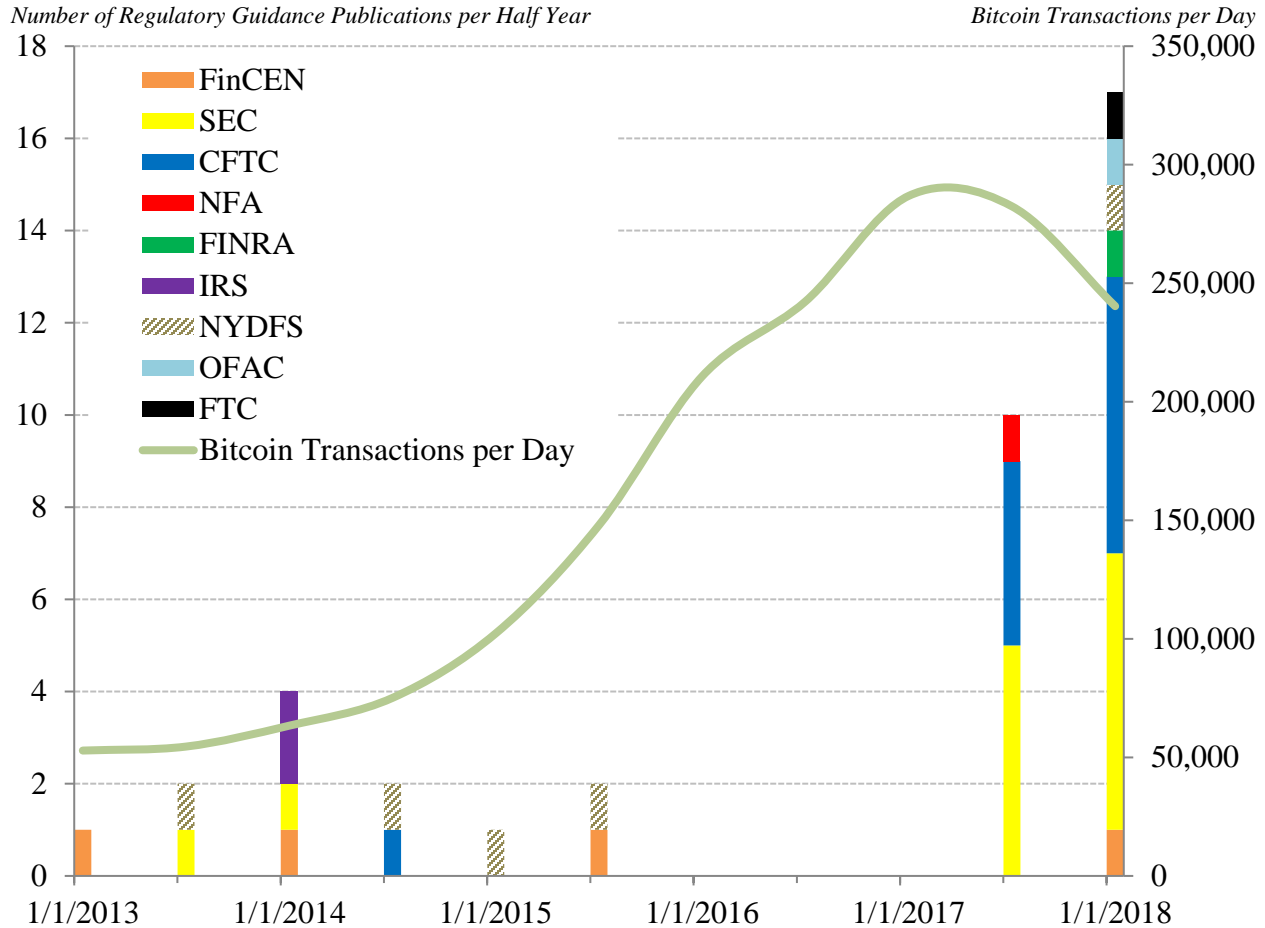
- State banking and financial regulators oversee some virtual currency spot exchanges through state laws governing money transfers.

There are some similarities to the international approaches examined in the previous section. The U.S. BSA/AML framework's application to virtual currencies and the application of Know Your Customer and other AML requirements to virtual currency financial services in the United Kingdom, Japan, and South Korea share many common features, for example. However, there are substantial contrasts as well: U.S. regulators consider virtual currencies commodities and in many cases also securities, whereas the United Kingdom, Japan, and South Korea have not classified virtual currencies as financial products subject to traditional regulatory frameworks. The United Kingdom's decision to classify virtual currency derivatives as financial instruments, but not the underlying virtual currencies themselves, represents a nuanced distinction from the U.S. regulatory approach.

As shown in Chart 2 below, several U.S. regulators have promulgated virtual currency guidance, customer or investor alerts, interpretations with respect to existing regulations, or new rulemakings since 2013. Until 2017, most regulatory publications with respect to virtual currencies came from FinCEN, the IRS, or state regulators such as the New York Department of Financial Services ("NYDFS").⁵⁰ This dynamic changed in the second half of 2017, as the CFTC and SEC began publishing a substantial number of documents on virtual currencies, followed soon after by their respective self-regulatory organizations ("SROs"), the National Futures Association ("NFA") and the Financial Industry Regulatory Authority ("FINRA"). Approximately two-thirds of all substantive regulatory publications on virtual currency have been published since the second half of 2017.

⁵⁰ The SEC published two investor alerts in 2013 and 2014 that did not contain substantive SEC guidance. The 2013 investor alert notified investors of the potential for "Ponzi Schemes Using Virtual Currencies," while the 2014 investor alert informed investors of the Mt. Gox Bitcoin exchange collapse, as well as the IRS' guidance stating that the IRS would treat virtual currencies as property for federal tax purposes. *See* Securities and Exchange Commission, "Ponzi Schemes Using virtual Currencies," July 23, 2013, available at https://www.sec.gov/investor/alerts/ia_virtualcurrencies.pdf, accessed on March 9, 2018. *See also* Securities and Exchange Commission, "Investor Alert: Bitcoin and Other Virtual Currency-Related Investments," May 7, 2014, available at <https://www.investor.gov/additional-resources/news-alerts/alerts-bulletins/investor-alert-bitcoin-other-virtual-currency>, accessed on March 9, 2018.

Chart 2
U.S. Regulatory Guidance Publications by Agency
H1 2013 through H1 2018, Semi-annually



Notes and Sources: Guidance data from NERA research into guidance and regulation on regulatory agency websites. Bitcoin transaction count data from <https://blockchain.info/charts/n-transactions?timespan=all>. Guidance and Bitcoin transaction count data through June 30, 2018.

Securities and Exchange Commission

The SEC and its leadership have stated that most or all virtual currencies offered in ICOs as of early 2018 have been securities in practice,⁵¹ although they have recognized that it is in principle possible for a virtual currency to not be considered a security based on a facts and circumstances test. While the SEC did initiate several enforcement actions in matters related to virtual currencies

⁵¹ See, for example, “When investors are offered and sold securities—which to date ICOs have largely been—they are entitled to the benefits of state and federal securities laws[.]” SEC Chairman Jay Clayton, “Chairman’s Testimony on Virtual Currencies: the Roles of the SEC and CFTC,” February 6, 2018, available at <https://www.sec.gov/news/testimony/testimony-virtual-currencies-oversight-role-us-securities-and-exchange-commission>, accessed on March 9, 2018.

before it published official guidance and interpretations in 2017, those pre-2017 virtual currency-related enforcement actions did not explicitly rely on the conclusions that virtual currencies were securities, that entities issuing virtual currencies were securities issuers, or that platforms facilitating transactions in virtual currencies were exchanges. The pre-2017 SEC enforcement actions are described in more detail in Section III.

The SEC first defined its perspective on virtual currencies as likely securities in its July 25, 2017 Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO (“DAO Report”). In this report, the SEC opined that U.S. securities laws were applicable to “virtual organizations or capital raising entities that use distributed ledger or blockchain technology to facilitate capital raising and/or investment and the related offer and sale of securities,” and that “the automation of certain functions through this technology, ‘smart contracts,’ or computer code, does not remove conduct from the purview of U.S. federal securities laws.”⁵²

The DAO Report described the SEC’s investigation of The DAO, a “decentralized autonomous organization [...] embodied in computer code and executed on a distributed ledger or blockchain” that the SEC concluded was created “with the objective of operating as a for-profit entity that would create and hold a corpus of assets through the sale of DAO Tokens to investors.”⁵³ According to the DAO Report, investors in DAO Tokens could re-sell DAO Tokens on secondary trading platforms or hold on to DAO Tokens in expectation of sharing in anticipated earnings of the assets and projects of The DAO.⁵⁴

The DAO Report explained the SEC’s reasoning as follows: DAO Tokens are securities because the *Howey* test suggests as much, given that investors in DAO Tokens invested money⁵⁵ with a reasonable expectation of profit derived from the managerial efforts of the team behind The DAO.⁵⁶ The SEC concluded more broadly that The DAO was an issuer of securities and should have registered its offers and sales of securities unless an exemption applied; online platforms that

⁵² Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, p. 2, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

⁵³ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, p. 1, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

⁵⁴ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, p. 1, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

⁵⁵ The SEC indicated that it considered the investors’ exchange of another convertible virtual currency for DAO Tokens to be equivalent to an investment of money: “the investment of ‘money’ need not take the form of cash.” Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, p. 11, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

⁵⁶ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, pp. 11-15, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

traded DAO Tokens met the definition of an exchange and thus either had to register or operate pursuant to an exemption from registration; and entities and issuers with similar facts and circumstances to The DAO and DAO Token platforms would likewise have to register or operate pursuant to an exemption.⁵⁷

The SEC followed the DAO Report with an August 28, 2017 Investor Alert entitled “Public Companies Making ICO-Related Claims,” which notified investors that the SEC had recently suspended trading in the common stock of several companies that “made claims regarding their investments in ICOs or touted coin/token related news” in response to concerns such as “a lack of current, accurate, or adequate information about the company,” “questions about the accuracy of publicly available information,” or “questions about trading in the stock.”⁵⁸ Although these suspensions of trading in common stock did not explicitly rely on the conclusion that virtual currencies were securities, they signaled the SEC’s increasing scrutiny of virtual currency issuers. These suspensions are described in more detail in Section III.

The SEC thereafter issued a November 1, 2017 statement that warned investors to be cautious of celebrity-backed ICOs. Notably, the SEC directed investors and virtual currency market participants to review the SEC’s DAO Report and stated that “virtual tokens or coins sold in ICOs may be securities, and those who offer and sell securities in the United States must comply with the federal securities laws.”⁵⁹

The following week, SEC Chairman Jay Clayton gave remarks at the PLI 49th Annual Institute on Securities Regulation in New York that called out virtual currencies and ICOs as a source of concern. After noting that there was “a lack of information about many online platforms that list and trade virtual coins or tokens offered and sold in Initial Coin Offerings,” Chairman Clayton restated the SEC’s position that “instruments, such as ‘tokens,’ offered and sold in ICOs may be securities, and those who offer and sell securities in the United States must comply with the federal securities laws” including registration requirements.⁶⁰

On December 11, 2017, Chairman Clayton issued a Statement on Cryptocurrencies and Initial Coin Offerings that he “directed principally to two groups: ‘Main Street’ investors and market professionals [such as] broker-dealers, investment advisers, exchanges, lawyers and accountants

⁵⁷ Securities and Exchange Commission, “Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO,” July 25, 2017, Release No. 81207, pp. 15-18, available at <https://www.sec.gov/litigation/investreport/34-81207.pdf>, accessed on March 9, 2018.

⁵⁸ Securities and Exchange Commission, “Investor Alert: Public Companies Making ICO-Related Claims,” August 28, 2017, p. 1, available at https://www.sec.gov/oiea/investor-alerts-and-bulletins/ia_ico-relatedclaims, accessed on March 9, 2018.

⁵⁹ Securities and Exchange Commission, “SEC Statement Urging Caution Around Celebrity Backed ICOs,” November 1, 2017, available at <https://www.sec.gov/news/public-statement/statement-potentially-unlawful-promotion-icos>, accessed on March 9, 2018.

⁶⁰ SEC Chairman Jay Clayton, “Governance and Transparency at the Commission and in Our Markets,” November 8, 2017, available at <https://www.sec.gov/news/speech/speech-clayton-2017-11-08>, accessed on March 9, 2018.

[] whose actions impact Main street investors.”⁶¹ Chairman Clayton opined that “any [ICO] activity that involves an offering of securities must be accompanied by the important disclosures, processes and other investor protections that our securities laws require.”⁶² In addition, he stated that “tokens and offerings that incorporate features and marketing efforts that emphasize the potential for profits based on the entrepreneurial or managerial efforts of others continue to contain the hallmarks of a security under U.S. law,” and advised financial market professionals, “including securities lawyers, accountant and consultants” to keep that in mind.⁶³ Chairman Clayton also warned “brokers, dealers and other market participants that allow for payments in cryptocurrencies, allow customers to purchase cryptocurrencies on margin, or otherwise use cryptocurrencies” to treat payments in cryptocurrencies as though they were payments in cash and ensure that “their cryptocurrency activities are not undermining their anti-money laundering and know-your-customer obligations.”⁶⁴

Chairman Clayton’s statement was followed a month later by a brief joint statement from the SEC and CFTC enforcement directors regarding virtual currency enforcement actions. The January 19, 2018 joint statement emphasized that both agencies would focus on the “substance” of virtual currency activities rather than the “form” of such activities:

When market participants engage in fraud under the guise of offering digital instruments – whether characterized as virtual currencies, coins, tokens, or the like – the SEC and the CFTC will look beyond form, examine the substance of the activity and prosecute violations of the federal securities and commodities laws. The Divisions of Enforcement for the SEC and CFTC will continue to address violations and to bring actions to stop and prevent fraud in the offer and sale of digital instruments.⁶⁵

Three days later, SEC Chairman Clayton presented opening remarks at the Securities Regulation Institute that were directed toward “securities lawyers, accountants, underwriters, and dealers.”⁶⁶ He stated that he had “instructed the SEC staff to be on high alert for approaches to ICOs that may be contrary to the spirit of our securities laws and the professional obligations of the U.S. securities

⁶¹ SEC Chairman Jay Clayton, “Statement on Cryptocurrencies and Initial Coin Offerings,” December 11, 2017, available at <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>, accessed on March 9, 2018.

⁶² SEC Chairman Jay Clayton, “Statement on Cryptocurrencies and Initial Coin Offerings,” December 11, 2017, available at <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>, accessed on March 9, 2018.

⁶³ SEC Chairman Jay Clayton, “Statement on Cryptocurrencies and Initial Coin Offerings,” December 11, 2017, available at <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>, accessed on March 9, 2018.

⁶⁴ SEC Chairman Jay Clayton, “Statement on Cryptocurrencies and Initial Coin Offerings,” December 11, 2017, available at <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>, accessed on March 9, 2018.

⁶⁵ Commodity Futures Trading Commission, “Joint Statement from CFTC and SEC Enforcement Directors Regarding Virtual Currency Enforcement Actions,” January 19, 2018, available at <http://www.cftc.gov/PressRoom/SpeechesTestimony/mcdonaldstatement011918>, accessed on March 9, 2018.

⁶⁶ SEC Chairman Clayton, “Opening Remarks at the Securities regulation Institute,” January 22, 2018, available at <https://www.sec.gov/news/speech/speech-clayton-012218>, accessed on March 9, 2018.

bar,” such as not counseling clients involved in ICOs that “the product they are promoting likely is a security.”⁶⁷ He also warned that the SEC “is looking closely at the disclosures of public companies that shift their business models to capitalize on the perceived promise of distributed ledger technology and whether the disclosures comply with the securities laws, particularly in the case of an offering.”⁶⁸

Two days later, SEC Chairman Clayton and CFTC Chairman Christopher Giancarlo published a joint op-ed in the *Wall Street Journal* titled “Regulators Are Looking at Cryptocurrency.” The op-ed stated that “federal authority to police cryptocurrencies is clear” in some areas, such as with respect to the “Bank Secrecy Act and its implementing regulations [that] establish federal anti-money-laundering obligations that apply to most people engaged in the business of accepting and transmitting, selling or storing cryptocurrencies.”⁶⁹ The op-ed also acknowledged some possible limits on the jurisdiction of the SEC over virtual currencies, but noted that “some products that are labeled as cryptocurrencies have characteristics that make them securities” and the SEC “is devoting a significant portion of its resources to the ICO market.” The op-ed warned “market participants, including lawyers, trading venues and financial services firms” that “we are disturbed by many examples of form being elevated over substance, with form-based arguments depriving investors of mandatory protections.”⁷⁰

The testimony of Chairman Clayton before the Senate Committee on Banking, Housing, and Urban Affairs on February 6, 2018 summarized of the documents described above and emphasized Chairman Clayton’s concern regarding public companies that change their business models or names to reflect a focus on distributed ledger technology without adequate disclosures to investors about business model changes and risks involved. It also emphasized that “the SEC and CFTC are collaborating on our approaches to policing these markets for fraud and abuse. We will also continue to work closely with our federal and state counterparts, including the Department of the Treasury, Department of Justice and state attorneys general and securities regulators.”⁷¹

On March 7, 2018, the SEC issued a public statement regarding “Unlawful Online Platforms for Trading Digital Assets” that warned investors “that many online trading platforms appear to

⁶⁷ SEC Chairman Clayton, “Opening Remarks at the Securities regulation Institute,” January 22, 2018, available at <https://www.sec.gov/news/speech/speech-clayton-012218>, accessed on March 9, 2018.

⁶⁸ SEC Chairman Clayton, “Opening Remarks at the Securities regulation Institute,” January 22, 2018, available at <https://www.sec.gov/news/speech/speech-clayton-012218>, accessed on March 9, 2018.

⁶⁹ SEC Chairman Jay Clayton and CFTC Chairman J. Christopher Giancarlo, “Regulators Are Looking at Cryptocurrency,” January 24, 2018, available at <https://www.wsj.com/articles/regulators-are-looking-at-cryptocurrency-1516836363>, accessed on March 9, 2018.

⁷⁰ SEC Chairman Jay Clayton and CFTC Chairman J. Christopher Giancarlo, “Regulators Are Looking at Cryptocurrency,” January 24, 2018, available at <https://www.wsj.com/articles/regulators-are-looking-at-cryptocurrency-1516836363>, accessed on March 9, 2018.

⁷¹ SEC Chairman Jay Clayton, “Chairman’s Testimony on Virtual Currencies: The Oversight Role of the SEC and CFTC,” February 6, 2018, pp. 9-10, available at <https://www.morrisoncohen.com/siteFiles/files/2018-02-06%20-%20SEC%20Clayton-Testimony.pdf>, accessed on March 9, 2018.

investors as SEC-registered and regulated marketplaces when they are not” by, for example, “refer[ring] to themselves as ‘exchanges.’”⁷² The SEC statement recommended that “market participants operating online trading platforms” should “consult with legal counsel to aid in their analysis of federal securities law issues and to contact SEC staff, as needed, for assistance in analyzing the application of the federal securities laws,” such as when a platform “must register as a national securities exchange or operate under an exemption from registration, such as the exemption for [alternative trading systems] under SEC Regulation ATS.”⁷³

On June 14, 2018, William Hinman, the Director of the SEC’s Division of Corporation Finance, gave remarks before the Yahoo Finance All Markets Summit in which he addressed the SEC’s evolving perspective on the application of the *Howey* test to digital assets like convertible virtual currencies. Hinman stated that neither Bitcoin nor Ether appeared to be securities at present given the decentralized structure of both virtual currencies, and that “applying the disclosure regime of the federal securities laws to the offer and resale” of Bitcoin and Ether “would seem to add little value” today.⁷⁴ Hinman also suggested that “the fundraising that accompanied the creation of Ether” did appear to have the characteristics of a securities offering, raising the possibility that some convertible virtual currencies could evolve organically from securities to non-securities under the *Howey* test if they become sufficiently decentralized.⁷⁵

Commodity Futures Trading Commission

The CFTC first took a stance on virtual currencies in December 2014, when then-Chairman Timothy Massad testified before the U.S. Senate Committee on Agriculture, Nutrition & Forestry that virtual currencies like Bitcoin may be commodities. Chairman Massad noted that “the [Commodity Exchange Act] defines the term ‘commodity’ very broadly” and thus “[d]erivative contracts based on a virtual currency represent one area within our [the CFTC’s] responsibility.”⁷⁶ In September 2015, the CFTC published its first enforcement action based on the conclusion that virtual currencies were commodities,⁷⁷ as explained in more detail in Section

⁷² Securities and Exchange Commission, “Statement on Potentially Unlawful Online Platforms for Trading Digital Assets,” March 7, 2018, available at <https://www.sec.gov/news/public-statement/enforcement-tm-statement-potentially-unlawful-online-platforms-trading>, accessed on March 9, 2018.

⁷³ Securities and Exchange Commission, “Statement on Potentially Unlawful Online Platforms for Trading Digital Assets,” March 7, 2018, available at <https://www.sec.gov/news/public-statement/enforcement-tm-statement-potentially-unlawful-online-platforms-trading>, accessed on March 9, 2018.

⁷⁴ SEC Director of the Division of Corporation Finance William Hinman, “Digital Asset Transactions: When *Howey* Met Gary (Plastic),” June 14, 2018, available at <https://www.sec.gov/news/speech/speech-hinman-061418>.

⁷⁵ SEC Director of the Division of Corporation Finance William Hinman, “Digital Asset Transactions: When *Howey* Met Gary (Plastic),” June 14, 2018, available at <https://www.sec.gov/news/speech/speech-hinman-061418>.

⁷⁶ CFTC Chairman Timothy Massad, “Testimony of Chairman Timothy Massad before the U.S. Senate Committee on Agriculture, Nutrition & Forestry,” December 10, 2014, available at <http://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-6>, accessed on March 9, 2018.

⁷⁷ The enforcement action targeted Coinflip, Inc. See Commodity Futures Trading Commission, “CFTC Orders Bitcoin Options Trading Platform Operator and its CEO to Cease Illegally Offering Bitcoin Options and to Cease Operating a

III. But it was not until the second half of 2017 that the CFTC began publishing a large number of regulatory documents related to virtual currencies. Most recently, in March 2018, a federal judge ruled in favor of the CFTC's interpretation that "virtual currencies can be regulated by CFTC as a commodity."⁷⁸ This ruling is explained in more detail below.

On October 17, 2017, the CFTC published "A CFTC Primer on Virtual Currencies" (the "Primer"). The Primer stated that "Bitcoin and other virtual currencies are properly defined as commodities," and the CFTC's jurisdiction "is implicated when a virtual currency is used in a derivatives contract, or if there is fraud or manipulation involving a virtual currency traded in interstate commerce."⁷⁹

On December 15, 2017, the CFTC issued a proposed interpretation⁸⁰ on virtual currency in retail transactions that would interpret the "actual delivery" exception to CEA section 2(c)(2)(D) to require "physical settlement." One example of "actual delivery" in this context is "a record on the relevant public distributed ledger network or blockchain" indicating that the entire quantity of purchased virtual currency is transferred to the purchaser's blockchain wallet (or "other relevant storage system") that is consistent with the purchaser having full control of and title to the virtual currency and the offeror having no control of, title to, or interests in the virtual currency within 28 days of entering into a transaction.⁸¹ If full control and title are not transferred within 28 days, the CFTC may consider the transaction a futures transaction subject to the full panoply of CFTC regulation and enforcement authority.

On January 4, 2018, the CFTC published a backgrounder on "Oversight of and Approach to Virtual Currency Futures Markets" that stated the CFTC's intent to "assert[] legal authority over virtual currency derivatives in support of the CFTC's anti-fraud and manipulation efforts, including in underlying spot markets" and pursue "robust enforcement" including both "general regulatory and enforcement jurisdiction over virtual currency derivatives markets" and policing "fraud and manipulation in cash or spot markets."⁸²

Facility for Trading or Processing Swaps without Registering," September 17, 2015, available at <http://www.cftc.gov/PressRoom/PressReleases/pr7231-15>, accessed on March 9, 2018.

⁷⁸ Senior United States District Judge Jack B. Weinstein, "Memorandum & Order in *CFTC v. McDonnell and Cabbagetech*," March 6, 2018, pp. 24-25, available at <https://dlbjbjzgnk95t.cloudfront.net/1019000/1019359/https-ecf-nyed-uscourts-gov-doc1-123114051281.pdf>, accessed on March 9, 2018.

⁷⁹ Commodity Futures Trading Commission, "A CFTC Primer on Virtual Currencies," October 17, 2017, p. 11, available at http://www.cftc.gov/idc/groups/public/documents/file/labcftc_primercurrencies100417.pdf, accessed on March 9, 2018.

⁸⁰ The CFTC announced the proposed interpretation on December 15, 2017, but the proposed interpretation was published in the Federal Register on December 20, 2017. Commodity Futures Trading Commission, "CFTC Issues Proposed Interpretation on Virtual Currency 'Actual Delivery' in Retail Transactions," December 15, 2017, available at <http://www.cftc.gov/PressRoom/PressReleases/pr7664-17>, accessed on March 9, 2018.

⁸¹ Commodity Futures Trading Commission, 82 FR 60335, December 20, 2017, at pp. 60339-60340, available at <http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2017-27421a.pdf>, accessed on March 9, 2018.

⁸² Commodity Futures Trading Commission, "CFTC Backgrounder on Oversight of and Approach to Virtual Currency Futures Markets," January 4, 2018, pp. 1-2, available at

On January 19, 2018, the CFTC and SEC enforcement directors issued a brief joint statement on both agencies' intent to look beyond "form" to the "substance" of virtual currency activities for enforcement purposes.⁸³

On January 24, 2018, CFTC Chairman Giancarlo published a joint op-ed with SEC Chairman Clayton on virtual currency regulation. The op-ed noted that with the emergence of bitcoin futures products on CFTC-regulated exchanges, "the CFTC gained oversight over the U.S. bitcoin futures market and access to data that can facilitate the detection and pursuit of bad actors in underlying spot markets."⁸⁴

On February 6, 2018, CFTC Chairman Giancarlo testified before the Senate Banking Committee on virtual currency. In his written testimony, he stated that the "CFTC has sufficient authority under the CEA to protect investors in virtual currency derivatives" but "the CFTC does NOT have regulatory jurisdiction over markets or platforms conducting cash or 'spot' transactions in virtual currencies or over participants on those platforms" except for "enforcement jurisdiction to investigate and, as appropriate, conduct civil enforcement action against fraud and manipulation."⁸⁵

The CFTC also issued customer advisories in late 2017 and early 2018 that warned virtual currency customers and investors about "the risks of virtual currency trading"⁸⁶ and complaints the CFTC had received regarding "pump-and-dump schemes"⁸⁷ in virtual currency. In the latter advisory, the CFTC advised virtual currency customers and investors that "the CFTC maintains general anti-

http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/backgrounder_virtualcurrency01.pdf, accessed on March 9, 2018.

⁸³ Commodity Futures Trading Commission, "Joint Statement from CFTC and SEC Enforcement Directors Regarding Virtual Currency Enforcement Actions," January 19, 2018, available at

<http://www.cftc.gov/PressRoom/SpeechesTestimony/mcdonaldstatement011918>, accessed on March 9, 2018.

⁸⁴ SEC Chairman Jay Clayton and CFTC Chairman J. Christopher Giancarlo, "Regulators Are Looking at Cryptocurrency," January 24, 2018, available at <https://www.wsj.com/articles/regulators-are-looking-at-cryptocurrency-1516836363>, accessed on March 9, 2018.

⁸⁵ CFTC Chairman J. Christopher Giancarlo, "Written Testimony before the Senate Banking Committee," February 6, 2018, available at <http://www.cftc.gov/PressRoom/PressReleases/opagiancarlo37>, accessed on March 9, 2018.

⁸⁶ Commodity Futures Trading Commission, "Customer Advisory: Understand the Risks of Virtual Currency Trading," December 15, 2017, available at http://www.cftc.gov/idc/groups/public/@customerprotection/documents/file/customeradvisory_urvct121517.pdf, accessed on March 9, 2018.

⁸⁷ Commodity Futures Trading Commission, "CFTC Issues First Pump-and-Dump Virtual Currency Customer Protection Advisory," February 15, 2018, available at <http://www.cftc.gov/PressRoom/PressReleases/pr7697-18#PrRoWMBL>, accessed on March 9, 2018.

fraud and manipulation enforcement authority over virtual currency cash markets as a commodity in interstate commerce.”⁸⁸

On March 6, 2018, a federal district court ruled in favor of the CFTC’s jurisdiction over virtual currencies as commodities. According to the memorandum and order, “virtual currencies can be regulated by the CFTC as a commodity” because “virtual currencies are ‘goods’ exchanged in a market for uniform quality and value.”⁸⁹ The order concludes that “the CFTC has standing pursuant to Title 7 U.S.C. § 13a-1(a) to seek injunctive and other relief related to misleading advice, and the fraudulent scheme and misappropriation of virtual currencies” and “the CFTC[’s] [...] expansion into spot trade commodity fraud is justified by statutory and regulatory guidelines.”⁹⁰ The order also notes that “the jurisdictional authority of CFTC to regulate virtual currencies as commodities does not preclude other agencies from exercising their regulatory power when virtual currencies function differently than derivative commodities,”⁹¹ consistent with the CFTC and SEC’s published perspectives on their non-exclusive authority over virtual currency under facts and circumstances tests.

The March 6, 2018 ruling bolsters the CFTC’s position that virtual currencies are commodities under the Commodity Exchange Act. However, as the only ruling affirming the CFTC’s position, it is unlikely to permanently settle the jurisdictional questions about virtual currency until and unless other courts rule similarly. An open question going forward is whether other courts will agree with the March 6, 2018 ruling’s conclusion that “the jurisdictional authority of CFTC to regulate virtual currencies as commodities does not preclude other agencies from exercising their regulatory power when virtual currencies function differently than derivative commodities,”⁹² which may be relevant in cases where both the CFTC and SEC pursue enforcement actions against the same targets, or where private litigants dispute whether virtual currencies are commodities, securities, both, or neither.

⁸⁸ Commodity Futures Trading Commission, “CFTC Issues First Pump-and-Dump Virtual Currency Customer Protection Advisory,” February 15, 2018, available at <http://www.cftc.gov/PressRoom/PressReleases/pr7697-18#PrRoWMBL>, accessed on March 9, 2018.

⁸⁹ Senior United States District Judge Jack B. Weinstein, “Memorandum & Order in *CFTC v. McDonnell and Cabbagetech*,” March 6, 2018, p. 24, available at <https://dlbjbjzgnk95t.cloudfront.net/1019000/1019359/https-ecf-nyed-uscourts-gov-doc1-123114051281.pdf>, accessed on March 9, 2018.

⁹⁰ Senior United States District Judge Jack B. Weinstein, “Memorandum & Order in *CFTC v. McDonnell and Cabbagetech*,” March 6, 2018, pp. 24-25, available at <https://dlbjbjzgnk95t.cloudfront.net/1019000/1019359/https-ecf-nyed-uscourts-gov-doc1-123114051281.pdf>, accessed on March 9, 2018.

⁹¹ Senior United States District Judge Jack B. Weinstein, “Memorandum & Order in *CFTC v. McDonnell and Cabbagetech*,” March 6, 2018, p. 24, available at <https://dlbjbjzgnk95t.cloudfront.net/1019000/1019359/https-ecf-nyed-uscourts-gov-doc1-123114051281.pdf>, accessed on March 9, 2018.

⁹² Senior United States District Judge Jack B. Weinstein, “Memorandum & Order in *CFTC v. McDonnell and Cabbagetech*,” March 6, 2018, p. 24, available at <https://dlbjbjzgnk95t.cloudfront.net/1019000/1019359/https-ecf-nyed-uscourts-gov-doc1-123114051281.pdf>, accessed on March 9, 2018.

Financial Crimes Enforcement Network

Federal BSA/AML regulator FinCEN has issued interpretive guidance and administrative rulings asserting its jurisdiction over virtual currency money services businesses (“MSBs”). Currently, as it stated in guidance issued March 18, 2013, FinCEN considers “administrators” (i.e., issuers or redeemers) of virtual currency and “exchangers” of virtual currency for real currency or other virtual currencies to be MSB “money transmitters” subject to the full range of FinCEN BSA/AML requirements, such as suspicious activity reporting.⁹³ The guidance further stated that “the definition of a money transmitter does not differentiate between real currencies and convertible virtual currencies.”⁹⁴ FinCEN clarified that it considered “an administrator or exchanger that (1) accepts and transmits a convertible virtual currency or (2) buys or sells convertible virtual currency” to be a money transmitter subject to FinCEN regulations, but that FinCEN did **not** consider “a user who obtains convertible virtual currency and uses it to purchase real or virtual goods or services” to be a money transmitter or other MSB absent administration and/or exchange behavior in the virtual currency.⁹⁵

In 2015, FinCEN issued an administrative ruling declaring a company to be a money transmitter (as well as a dealer in precious metals, precious stones, or jewels) for engaging in a business including accepting bitcoins in exchange of issuing physical or digital negotiable certificates of ownership of precious metals. This business involved holding precious metals in custody for buyers by opening a digital wallet for a customer and issuing a digital proof-of-custody certificate that can be linked to a customer’s wallet on the Bitcoin blockchain ledger. The digital proof-of-custody certificates were designed such that the customer could trade or exchange their precious metals holdings at the company by any means through which the customer could trade or exchange bitcoins.⁹⁶

Internal Revenue Service

The IRS in March 2014 issued a notice and news release providing that “virtual currency is treated as property for U.S. federal tax purposes.”⁹⁷ The notice noted among other details that “mining”

⁹³ Financial Crimes Enforcement Network, “Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies,” FIN-2013-G001 , March 18, 2013, pp. 1-3, available at <https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf>, accessed on March 9, 2018.

⁹⁴ Financial Crimes Enforcement Network, “Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies,” FIN-2013-G001 , March 18, 2013, pp. 1-3, available at <https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf>, accessed on March 9, 2018.

⁹⁵ Financial Crimes Enforcement Network, “Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies,” FIN-2013-G001 , March 18, 2013, pp. 2-3, available at <https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf>, accessed on March 9, 2018.

⁹⁶ Financial Crimes Enforcement Network, “Ruling [on the] Application of FinCEN’s Regulations to Persons Issuing Physical or Digital Negotiable Certificates of Ownership of Precious Metals,” FIN-2015-R001, August 14, 2015, available at https://www.fincen.gov/sites/default/files/administrative_ruling/FIN-2015-R001.pdf, accessed on March 9, 2018.

⁹⁷ Internal Revenue Service, “IRS virtual Currency Guidance,” IR-2014-36, March 25, 2014, available at <https://www.irs.gov/newsroom/irs-virtual-currency-guidance>, accessed on March 9, 2018.

virtual currency could count as a form of self-employment, and that “taxpayers may be subject to penalties” for “underpayments attributable to virtual currency transactions” under section 6662 or “failure to timely or correctly report virtual currency transactions” under section 6721 and 6722.⁹⁸

Office of Foreign Assets Control

On January 19, 2018, the Office of Foreign Assets Control (“OFAC”) of the U.S. Department of the Treasury, a federal regulator overseeing sanctions, issued guidance regarding Venezuela’s December 2017 announcement of intent to create a digital or virtual currency. According to the guidance, a virtual currency issued by Venezuela connected to the right to receive commodities at a later date would appear to be an extension of credit to the Venezuelan government, and thus prohibited under Executive Order 13808.⁹⁹ This suggests that for sanctions purposes in general, cryptocurrencies issued by foreign governments may be considered extensions of credit to those governments by OFAC.

On March 19, 2018, President Donald Trump issued Executive Order 13827, “Taking Additional Steps to Address the Situation in Venezuela,” expressly prohibiting “All transactions related to, provision of financing for, and other dealings in, by a United States person or within the United States, any digital currency, digital coin, or digital token, that was issued by, for, or on behalf of the Government of Venezuela on or after January 9, 2018.”¹⁰⁰ While this is one case study, it is reasonable to expect OFAC may apply similar reasoning if other countries subject to sanctions attempt to obtain financing through ICOs or other virtual currency transactions with U.S. persons.

State Regulatory Frameworks

Some state financial regulators have considered creating regulatory frameworks for virtual currency. New York’s NYDFS moved early, publishing a notice of inquiry on new regulatory guidelines specific to virtual currencies in August 2013.¹⁰¹ NYDFS followed the notice with a July 17, 2014 proposed regulatory framework for virtual currency firms called “BitLicense” that required virtual currency firms to comply with a wide range of requirements, including anti-money laundering rules such as “Know your Customer” (i.e., verifying the identity of accountholders).¹⁰²

⁹⁸ Internal Revenue Service, “Notice 2014-21,” March 25, 2014, p. 4, 5-6, available at <https://www.irs.gov/pub/irs-drop/n-14-21.pdf>, accessed on March 9, 2018.

⁹⁹ Office of Foreign Assets Control, “Other FAQs: Other Sanctions Programs,” January 19, 2018, available at https://www.treasury.gov/resource-center/faqs/Sanctions/Pages/faq_other.aspx#551, accessed March 7, 2018.

¹⁰⁰ United States Federal Register, “Executive Order 13827 of March 19, 2018: Taking Additional Steps to Address the Situation in Venezuela,” published on March 21, 2018, available at <https://www.federalregister.gov/documents/2018/03/21/2018-05916/taking-additional-steps-to-address-the-situation-in-venezuela>.

¹⁰¹ New York Department of Financial Services, “Notice of Inquiry on Virtual Currencies,” August 12, 2013, available at http://www.dfs.ny.gov/about/hearings/vc_01282014/notice_20130812_vc.pdf, accessed on March 9, 2018.

¹⁰² New York Department of Financial Services, “NY DFS Releases Proposed BitLicense Regulatory Framework for Virtual Currency Firms,” July 17, 2014, available at <http://www.dfs.ny.gov/about/press/pr1407171.htm>, accessed on March 9, 2018.

The final BitLicense Regulatory Framework rules were published in the New York State Register at 23 NYCRR Part 200 in June 2015¹⁰³

The final BitLicense rules required that BitLicense licensees report transactions worth more than \$10,000 in virtual currencies in aggregate in one day that are not subject to federal currency transaction reports to the NYDFS within 24 hours, monitor transactions for suspicious activity and file suspicious activity reports, and collect and maintain information on the identity and physical address of account holders of the licensee.¹⁰⁴ On September 22, 2015, the NYDFS reported that it had approved its first BitLicense application for Circle Internet Financial in a press release that described BitLicense as the “First Comprehensive Regulatory Framework for Firms Dealing in Virtual Currency.”¹⁰⁵ As of March 7, 2018, 4 firms were listed on the NYDFS website as state-regulated virtual currency institutions.¹⁰⁶

Other states’ regulatory approaches have garnered less attention than New York’s. Some states have chosen to interpret virtual currency as “money” for the purposes of state money transmitter laws and regulations or have otherwise required virtual currency issuers and/or exchanges to register,¹⁰⁷ while others have chosen not to, or have yet to take action.

5. Increasing United States Enforcement Actions

General Enforcement Trends

U.S. regulators have pursued enforcement actions related to virtual currencies since at least the first half of 2013, but there has been a substantial increase in enforcement activity from the second half of 2017 onwards: 50 of the 71 total virtual currency enforcement actions through June 30, 2018 were brought since July 1, 2017, and 41 were brought in the first half of 2018 alone. Although total enforcement actions have increased substantially, the largest increase has been in the form of enforcement actions seeking no monetary penalties or criminal charges, such as cease-and-desist

¹⁰³ 23 NYCRR Part 200. *See also* New York Department of Financial Services, “BitLicense Regulatory Framework Final Rules,” June 24, 2015, available at www.dfs.ny.gov/legal/regulations/bitlicense_reg_framework.htm, accessed on March 9, 2018.

¹⁰⁴ 23 NYCRR Part 200, June 24, 2015, Section 200.15 Anti-money laundering program, available at <http://www.dfs.ny.gov/legal/regulations/adoptions/dfsp200t.pdf>, accessed on March 9, 2018.

¹⁰⁵ New York Department of Financial Services, “NYDFS Announces Approval of First BitLicense Application from a Virtual Currency Firm,” September 22, 2015, available at <http://www.dfs.ny.gov/about/press/pr1509221.htm>, accessed on March 9, 2018.

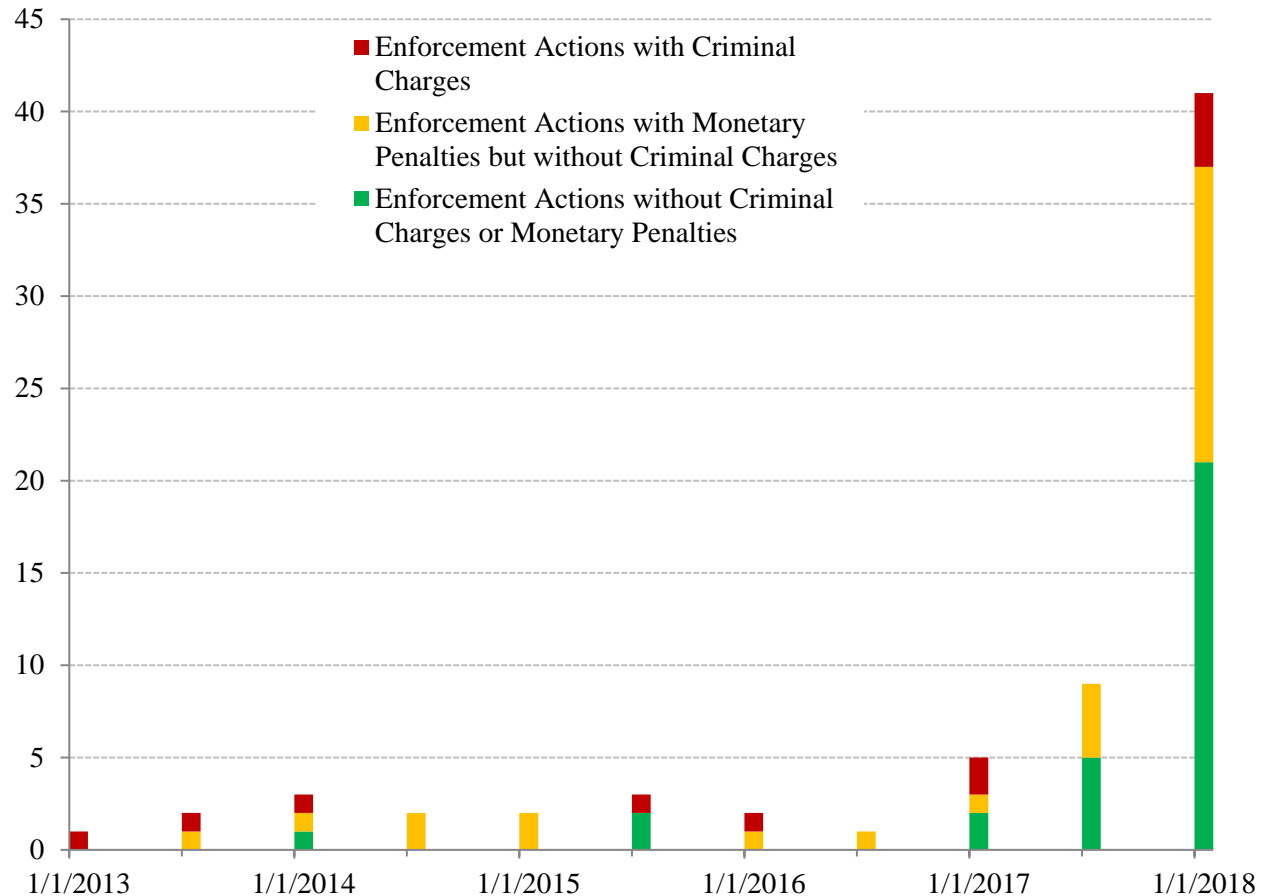
¹⁰⁶ New York Department of Financial Services, “Who We Supervise,” available at <https://myportal.dfs.ny.gov/web/guest-applications/who-we-supervise>, accessed on March 9, 2018.

¹⁰⁷ For example, the Washington State Department of Financial Institutions. Washington State Department of Financial Institutions, “Amendments to Washington’s Money Transmitter Regulations Bring Clarification for Virtual Currency Companies,” June 14, 2017, available at <https://dfi.wa.gov/news/press/virtual-currency-regulation>, accessed on March 9, 2018.

orders and temporary trading suspensions. A breakdown of virtual currency enforcement actions by penalty-type sought through June 30, 2018 is shown below in Chart 3.

Chart 3
Number of Virtual Currency Enforcement Actions by Penalty-Type Sought
H1 2013 through H1 2018, Semi-annually

Number of U.S. Enforcement Actions per Half Year

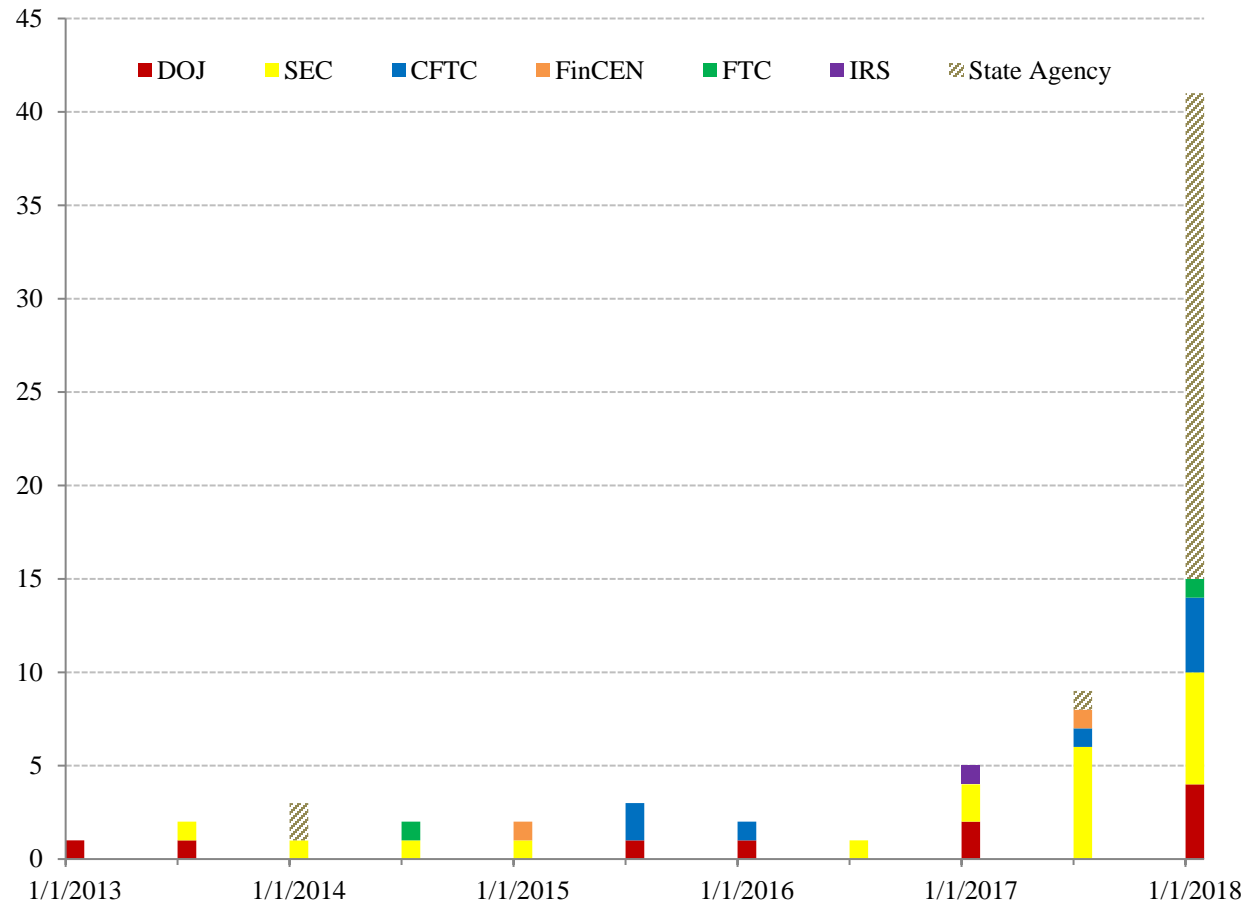


Notes and Sources: Data from NERA research into enforcement actions on enforcement agency websites. H1 2018 data through June 30, 2018.

State regulators collectively brought 29 enforcement actions, but no individual state agency brought more than 10 (Texas). The SEC brought the most virtual currency enforcement actions, with 19 as of June 30, 2018; the Department of Justice (“DOJ”) brought 10; the CFTC brought 8; each; FinCEN and the FTC each brought 2; and the IRS brought 1 virtual currency enforcement action. Chart 4 below displays a breakdown of enforcement actions by regulatory agency.

Chart 4
Number of Virtual Currency Enforcement Actions by Agency
H1 2013 through H1 2018, Semi-annually

Number of Enforcement Actions per Half Year

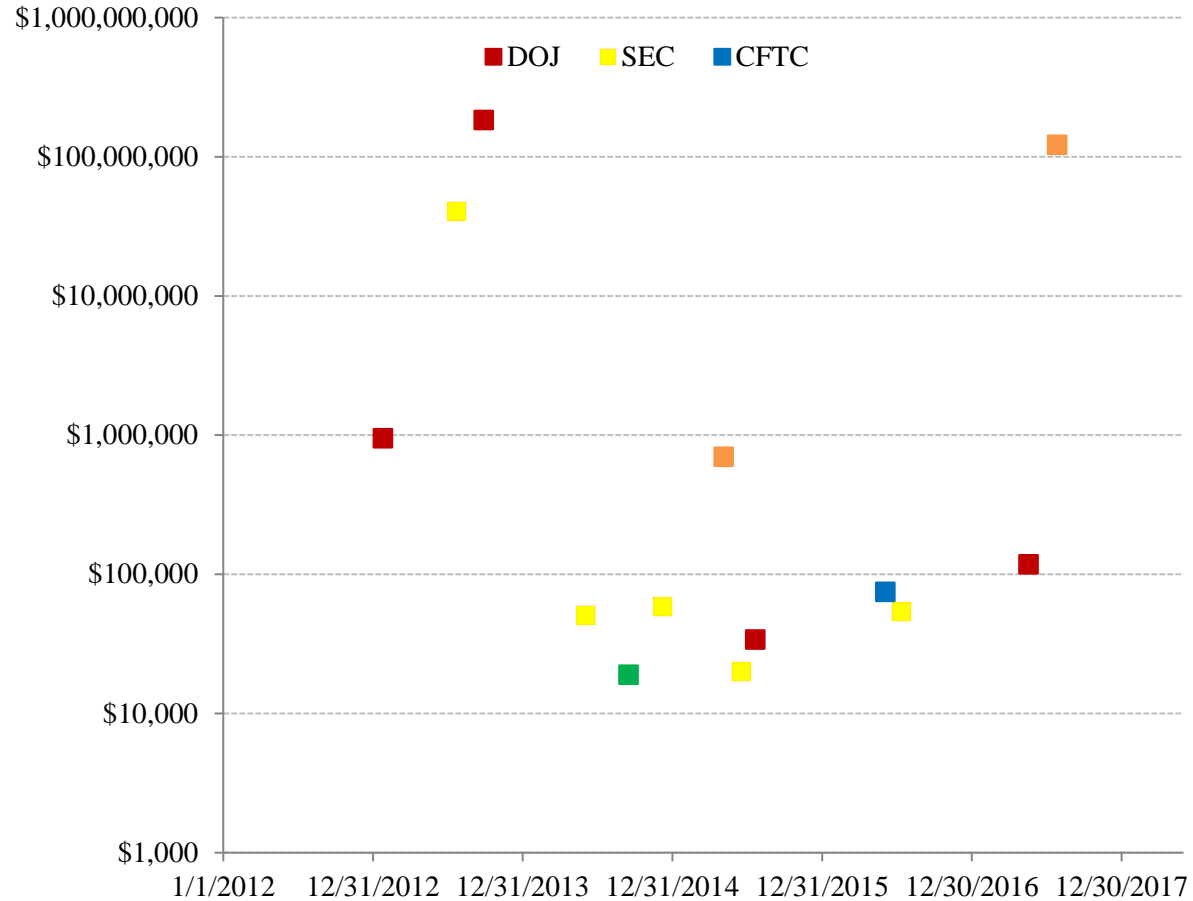


Notes and Sources: Data from NERA research into enforcement actions on enforcement agency websites. H1 2018 data through June 30, 2018.

NERA’s analysis of the financial penalties imposed in resolved enforcement actions that have sought such penalties shows no strong trend over time. Among the thirteen enforcement actions with published penalty amounts, only three have imposed penalties larger than \$1 million, but those were for amounts in the tens or hundreds of millions of dollars, with one large enforcement action each from the DOJ, FinCEN, and the SEC. The large penalties were imposed on the alleged perpetrator of a bitcoin-denominated Ponzi Scheme, Trendon T. Shavers, and his online entity, Bitcoin Savings and Trust; the alleged operator of the “Silk Road” online criminal marketplace, Ross Ulbricht, also known as “Dread Pirate Roberts;” and an unlicensed exchanger of convertible virtual currencies, BTC-e, and its administrator, Alexander Vinnik, who allegedly violated BSA/AML requirements. Financial penalties broken down by enforcement agency and date are displayed in Chart 5 below.

Chart 5
Financial Penalties Imposed by Agency

Total Financial Penalty Imposed, Logarithmic Scale



Notes and Sources: Data from NERA research into enforcement actions on enforcement agency websites. H1 2018 data through June 30, 2018. Financial penalties include civil money penalties, disgorgement, and all other enforcement agency-reported financial payments ordered to be made by targets of enforcement actions.

In the following sections, trends in enforcement activities are analyzed by general category of alleged unlawful behavior: violation of registration requirements; fraud-related allegations; trading violations; and BSA/AML violations.

Alleged Violations of Registration Requirements

Enforcement authorities have pursued at least 26 enforcement actions that have alleged that targets violated registration requirements. Enforcement actions alleging violations of registration requirements tend to fall into a few categories depending on the enforcement agency involved:

- **FinCEN and the DOJ:** Registration requirement enforcement actions by FinCEN¹⁰⁸ and the DOJ¹⁰⁹ have typically alleged that firms or individuals acting as exchangers of convertible virtual currencies have operated unlicensed MSBs;
- **SEC and State Securities Regulators:** Those by the SEC and state securities regulators have typically alleged either (1) that firms or individuals associated with ICOs or digital token sales have offered unregistered securities,¹¹⁰ or (2) that firms or individuals operating online platforms to trade convertible virtual currencies have operated an unregistered exchange or broker-dealer;¹¹¹
- **CFTC:** Those by the CFTC have alleged (1) that firms or individuals offering financed retail transactions in convertible virtual currencies have failed to register as designated contract markets or swap execution facilities,¹¹² or (2) that firms or individuals that have accepted funds and orders in convertible virtual currencies have failed to register as futures commission merchants,¹¹³ or (3) that firms or individuals accepting convertible virtual currencies in exchange for commodity interests have failed to register as commodity pool operators or associated persons of commodity pool operators.¹¹⁴

Fraud-related Allegations

Enforcement authorities have pursued at least 33 enforcement actions that have alleged that targets engaged in or conspired to engage in fraud-related activities ranging from providing insufficient or inaccurate information to prospective investors, to operating a Ponzi-scheme. Fraud-related

¹⁰⁸ See Financial Crimes Enforcement Network, “In the Matter of: BTC-E a/k/a Canton Business Corporation and Alexander Vinnik Assessment of Civil Money Penalty,” July 26, 2017, available at https://www.fincen.gov/sites/default/files/enforcement_action/2017-07-26/Assessment%20for%20BTCeVinnik%20FINAL%20SignDate%2007.26.17.pdf, accessed on March 9, 2018.

¹⁰⁹ See Department of Justice—United States Attorney’s Office for the Western District of Louisiana, “Former Shreveport chiropractor, son plead guilty to operating illegal bitcoin exchange business,” April 20, 2016, available at <https://www.justice.gov/usao-wdla/pr/former-shreveport-chiropractor-son-plead-guilty-operating-illegal-bitcoin-exchange>, accessed on March 9, 2018.

¹¹⁰ See Securities and Exchange Commission, “Company Halts ICO After SEC Raises Registration Concerns,” December 11, 2017, available at <https://www.sec.gov/news/press-release/2017-227>, accessed on March 9, 2018.

¹¹¹ See Securities and Exchange Commission, “SEC Sanctions Operator of Bitcoin-Related Stock Exchange for Registration Violations,” December 8, 2014, available at <https://www.sec.gov/news/press-release/2014-273>, accessed on March 9, 2018.

¹¹² See Commodity Futures Trading Commission, “CFTC Orders Bitcoin Exchange Bitfinex to Pay \$75,000 for Offering Illegal Off-Exchange Financed Retail Commodity Transactions and Failing to Register as a Futures Commission Merchant,” June 2, 2016, available at <https://www.cftc.gov/PressRoom/PressReleases/pr7380-16>, accessed on March 9, 2018.

¹¹³ See Commodity Futures Trading Commission, “CFTC Orders Bitcoin Exchange Bitfinex to Pay \$75,000 for Offering Illegal Off-Exchange Financed Retail Commodity Transactions and Failing to Register as a Futures Commission Merchant,” June 2, 2016, available at <https://www.cftc.gov/PressRoom/PressReleases/pr7380-16>, accessed on March 9, 2018.

¹¹⁴ See Commodity Futures Trading Commission, “CFTC Charges Colorado Resident Dillon Michael Dean and His Company, The Entrepreneurs Headquarters Limited, with Engaging in a Bitcoin and Binary Options Fraud Scheme,” January 19, 2018, available at <https://www.cftc.gov/PressRoom/PressReleases/pr7674-18>, accessed on March 9, 2018.

allegations have been broadly similar across enforcement agencies, and thus are analyzed by the sub-type of activity alleged rather than the enforcement agency involved:

- **Insufficient or Inaccurate Information Provided to Investors:** Enforcement agencies such as the SEC and state securities regulators have issued cease and desist orders to,¹¹⁵ or temporarily suspended,¹¹⁶ firms or individuals on at least 12 occasions in matters alleging insufficient or inaccurate information provided to investors. The cease and desist orders have been targeted at a range of entities and individuals connected to virtual currencies, whereas the temporary suspensions have generally targeted publicly traded companies with recent announcements of projects involving issuing, mining, exchanging, or administering convertible virtual currencies or blockchains. These enforcement actions have generally involved no assessment of monetary penalties.
- **Commercial and Financial Fraud Schemes:** Enforcement agencies have sought injunctions and equitable relief in at least 14 matters alleging behavior amounting to operating fraud schemes, with allegations ranging from failing to deliver advertised and paid-for Bitcoin mining computers¹¹⁷ to operating a Ponzi scheme.¹¹⁸ Enforcement agencies have sought criminal charges, financial penalties, and/or injunctions in cases alleging such fraud schemes.

Bank Secrecy Act/Anti-Money Laundering Allegations

Enforcement authorities have pursued at least six enforcement actions related to virtual currencies that have alleged violations of BSA/AML statutes or regulations. These enforcement actions either alleged that individuals or entities were operating unlicensed or BSA/AML non-compliant money transmitters/MSBs or that they were aiding or engaged in money laundering:

- **Operating Unlicensed or BSA/AML Non-Compliant MSBs:** FinCEN has pursued two enforcement actions against alleged unlicensed money transmitters/MSBs, the DOJ has pursued two such enforcement actions, and the State of Florida has pursued one. Penalties imposed included prison terms in two cases, financial penalties of \$122 million and \$950 thousand, and, notably, in one case a dismissal of all charges in Florida state court in

¹¹⁵ See Texas State Securities Board, “In the Matter of R2B COIN Emergency Cease and Desist Order,” January 24, 2018, available at <https://www.ssb.texas.gov/sites/default/files/ENF-18-CDO-1756.pdf>, accessed on March 9, 2018.

¹¹⁶ See Securities and Exchange Commission, “Release No. 81474,” August 23, 2017, available at <https://www.sec.gov/litigation/suspensions/2017/34-81474.pdf>, accessed on March 9, 2018.

¹¹⁷ See Federal Trade Commission, “At FTC’s Request Court Halts Bogus Bitcoin Mining Operation,” September 23, 2014, available at <https://webcache.googleusercontent.com/search?q=cache:wRszjtWXOkMJ:https://www.ftc.gov/news-events/press-releases/2014/09/ftcs-request-court-halts-bogus-bitcoin-mining-operation+&cd=2&hl=en&ct=clnk&gl=us&client=firefox-b>, accessed on March 9, 2018.

¹¹⁸ See Securities and Exchange Commission, “SEC Charges Texas Man with Running Bitcoin-Denominated Ponzi Scheme,” July 23, 2013, available at <https://www.sec.gov/news/press-release/2013-132>, accessed on March 9, 2018.

2016—the only such total loss in a virtual currency enforcement action—in a ruling that cited the alleged vagueness of the relevant Florida statutes on MSBs.¹¹⁹

- **Money Laundering:** The DOJ brought two money laundering enforcement actions alleging money laundering activity in connection with the “Silk Road” online criminal marketplace. The better-publicized of the two, against the alleged owner and operator of “Silk Road,” Ross Ulbricht, alleged that he engaged in money laundering connected with the sale of drugs and criminal services on “Silk Road.” Ulbricht was sentenced to life in prison and ordered to forfeit nearly \$184 million.¹²⁰ The less-publicized enforcement action targeted two men who allegedly ran a Bitcoin exchange on “Silk Road” to facilitate drug purchases, and resulted in criminal convictions, prison sentences, and nearly \$1 million in financial penalties.¹²¹

Trading Allegations

Enforcement authorities have pursued at least three enforcement actions relating to virtual currencies that have alleged trading violations:

- In 2015, the CFTC issued an order against TeraExchange LLC, a provisionally registered Swap Execution Facility, for purportedly allowing wash trades and prearranged trades on its platform. According to the CFTC, TeraExchange allowed two market participants to trade two “completely offsetting” contracts consisting of non-deliverable forward contracts based on the relative value of Bitcoin and the U.S. dollar, and issued a press release advertising Bitcoin swap trading without disclosing that the sales were pre-arranged wash sales. The settlement involved no financial penalty.¹²²
- In 2016, the SEC settled an enforcement action against Bitcoin Investment Trust, a Delaware trust invested in bitcoins, and SecondMarket, a broker-dealer, alleging violations of Rules 101 and 102 of Regulation M. The SEC alleged that Secondmarket, the sole authorized participant in Bitcoin Investment Trust, purchased shares in Bitcoin Investment

¹¹⁹ *The State of Florida vs. Michell Abner Espinoza*, “Order Granting Defendant’s Motion to Dismiss the Information,” Judge Teresa Pooler, July 22, 2016.

¹²⁰ Department of Justice—U.S. Attorney’s Office for the Southern District of New York, “Ross Ulbricht, A/K/A ‘Dread Pirate Roberts,’ Sentenced in Manhattan Federal Court to Life in Prison,” May 29, 2015, available at <https://www.justice.gov/usao-sdny/pr/ross-ulbricht-aka-dread-pirate-roberts-sentenced-manhattan-federal-court-life-prison>, accessed on March 9, 2018.

¹²¹ Department of Justice, “Former CEO of Bitcoin Exchange Company Sentenced in Manhattan Federal Court to Two Years in Prison for Helping to Sell Nearly \$1 Million in Bitcoins for Drug Buys on Silk Road,” December 19, 2014, available at <https://www.fbi.gov/contact-us/field-offices/newyork/news/press-releases/former-ceo-of-bitcoin-exchange-company-sentenced-in-manhattan-federal-court-to-two-years-in-prison-for-helping-to-sell-nearly-1-million-in-bitcoins-for-drug-buys-on-silk-road>, accessed on March 9, 2018.

¹²² Commodity Futures Trading Commission, “CFTC Settles with TeraExchange LLC, a Swap Execution Facility, for Failing to Enforce Prohibitions on Wash Trading and Prearranged Trading in Bitcoin Swap,” September 24, 2015, available at <https://www.cftc.gov/PressRoom/PressReleases/pr7240-15>, accessed on March 9, 2018.

Trust from shareholders and earned redemption feeds during a continuous distribution, and hence, during the applicable restricted period. The SEC settled with the respondents for \$53,756 in disgorgement and prejudgment interest and agreement to a cease and desist order.¹²³

- In 2018, the CFTC filed a complaint against Blake Kantor, Nathan Mullins, and entities associated with the two, alleging the operation of an unregistered futures commission merchant, the offering of illegal off-exchange retail swaps (binary options), the use of manipulative and deceptive devices in connection with swaps (including the manipulation or fabrication of purported trades in customer accounts to the disadvantage of customers), and the exchange of customer balances for virtual currencies that could not be monetized for the U.S. dollar value reported to customers in an effort to cover up the previous fraud.¹²⁴

6. Developing Private Litigation Trends

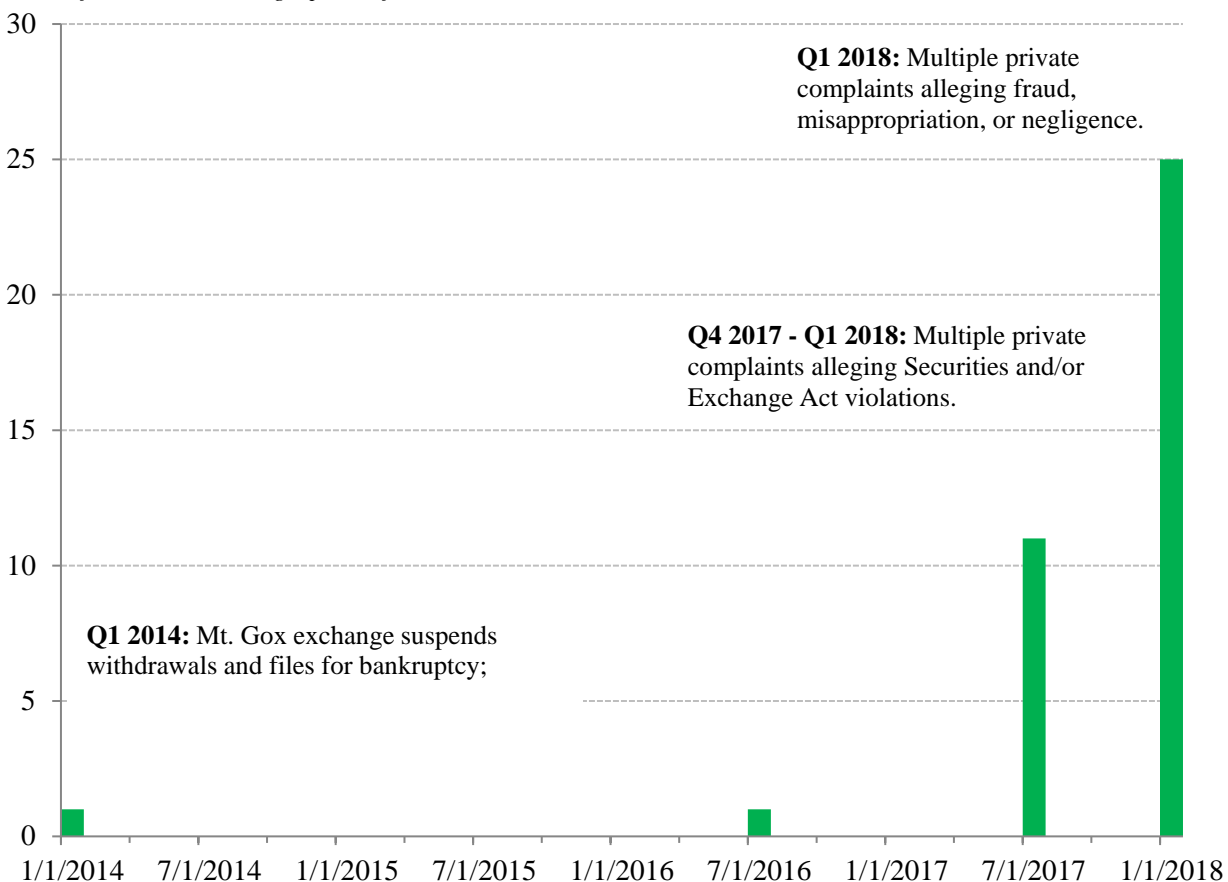
Noteworthy private litigation related to virtual currencies is a very recent trend, with 36 out of 38 noteworthy private actions identified by NERA brought since July 2017. Chart 6 below shows the temporal distribution of noteworthy private litigation related to virtual currencies.

¹²³ Securities and Exchange Commission, “SecondMarket, Inc. and Bitcoin Investment Trust (BIT) Settle Charges Relating to Unlawful Redemptions of BIT Shares during a Continuous Distribution,” July 11, 2016, available at <https://www.sec.gov/litigation/admin/2016/34-78282-s.pdf>, accessed on March 9, 2018.

¹²⁴ Commodity Futures Trading Commission, “Complaint for Injunctive Relief, Civil Monetary Penalties and Other Equitable Relief in CFTC v.; Blake Harrison Kantor et al.,” April 16, 2018.

Chart 6 Litigation Count H1 2014 through H1 2018, Semi-annually

Number of Civil Actions Brought per Half Year



Notes and Sources: From NERA research into litigation focused on virtual currencies. H1 2018 data through June 30, 2018.

Private litigation has featured recurring categories of allegations:

- Allegations of fraud or misappropriation (17 out of 38 cases);
- Allegations of negligence or breach/rescission of contract (14 out of 38 cases); and
- Allegations of violations of securities laws or regulations (22 out of 38 cases).

As is explained below, many virtual currency-related lawsuits have featured more than one category of allegations. 29 of the 38 identified lawsuits have been putative class actions.

Allegations of Fraud or Misappropriation

Allegations of fraud or misappropriation have been common in private virtual currency litigation. Such allegations range from claims of misleading promotional or marketing campaigns to allegations of outright theft of customer or investor assets.

The first noteworthy virtual currency litigation was a putative class action alleging fraud and misappropriation of customer assets filed in 2014 against the Bitcoin exchange Mt. Gox, its owner, Mark Karpeles, its bank, Mizuho Bank, and others following the collapse of Mt. Gox in February 2018. Plaintiffs alleged that Mt. Gox's owner either stole customers' bitcoins and fiat currency or negligently failed to safeguard customer assets, and alleged that Mizuho Bank continued to allow customers to deposit funds into Mt. Gox after suspending withdrawals while concealing from customers that it had ceased providing withdrawal services.¹²⁵

Numerous lawsuits since then have alleging fraud or misappropriation. In early 2018, three distinct putative class actions alleging fraud were brought against Bitconnect, a Bitcoin lending platform with its own convertible virtual currency, and individuals and/or entities accused of being affiliates or promoters of Bitconnect. Bitconnect allegedly guaranteed a high rate of return on bitcoins invested in order to attract victims to a Ponzi scheme, achieving a market capitalization above \$2 billion in December 2017.¹²⁶ On January 13, 2018, after several state authorities had issued cease and desist orders against Bitconnect, Bitconnect's platform allegedly ceased operating for several days. When the website came back online, the lending platform was allegedly shut down, and investors were allegedly repaid their Bitcoin loans at an exchange rate that was no longer closer to the market exchange rate, as the price of Bitconnect's "coin" fell by more than 90% between January 13 and January 16, 2018.¹²⁷

As with most virtual currency litigation alleging fraud or misappropriation, the ongoing Bitconnect litigation is likely to involve disputes over expert opinions, such as determining whether Bitconnect was covered by state and federal securities laws and estimating reasonable damages. With respect to damages, the ongoing Bitconnect litigation may have to determine whether damages, if any, should be calculated based on Bitconnect investors' losses as denominated in U.S. dollars or in Bitcoin, given that Bitconnect was a Bitcoin lending platform. Chart 7 below shows the relative change in the price of Bitconnect in U.S. dollars and in Bitcoin immediately following the price crash.

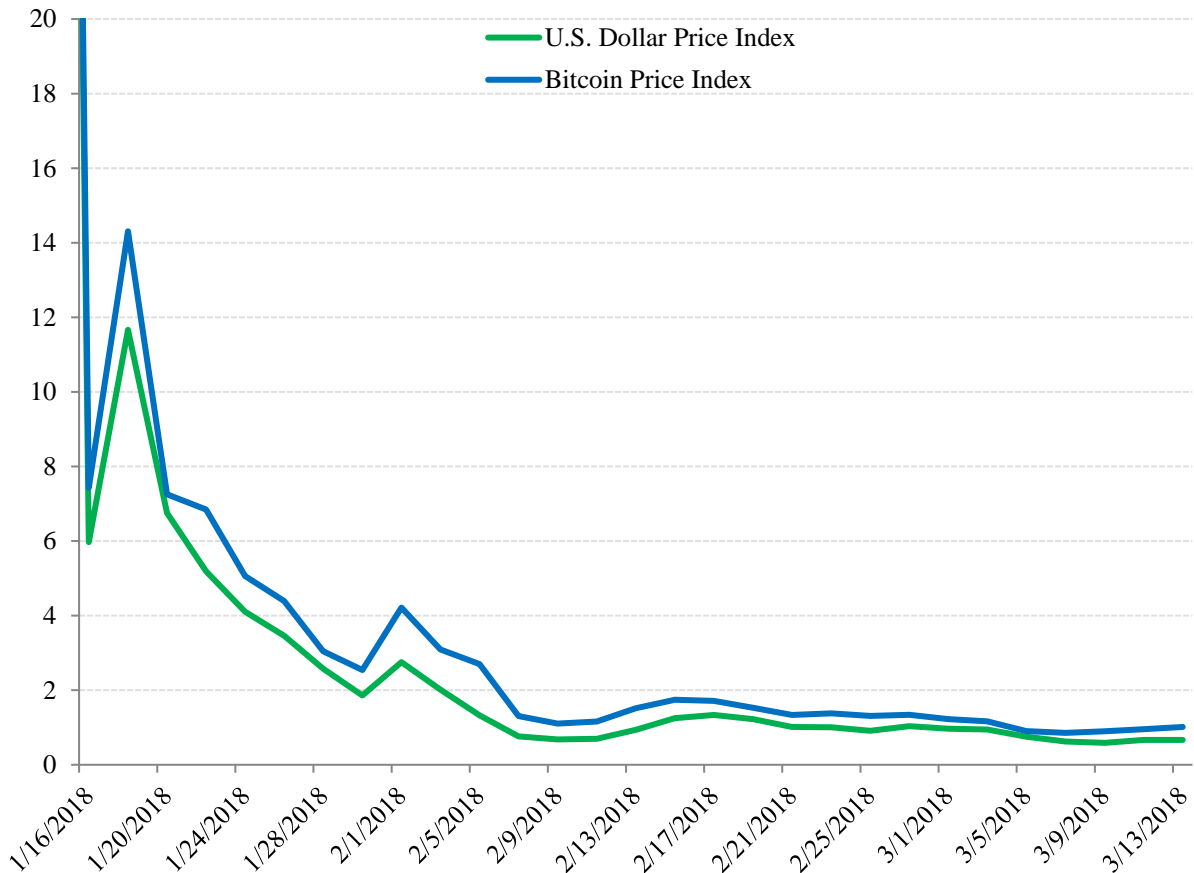
¹²⁵ See First Amended Class Action Complaint in *Greene et al. v. Mtgox Inc. et al.*, March 14, 2014.

¹²⁶ See <https://coinmarketcap.com/currencies/bitconnect/historical-data/>.

¹²⁷ See Class Action Complaints in *Charles Wildes et al. v. Bitconnect International PLC et al.* (Filed January 24, 2018); *Brian Page et al. v. Bitconnect International PLC et al.* (Filed January 29, 2018); and *Andrew Kline et al. v. Bitconnect et al.* (Filed February 7, 2018).

Chart 7
Bitconnect Price in U.S. Dollars and Bitcoin
Indexed to January 12, 2018 Closing Prices = 100

Price Index



Notes and Sources: Data from Coinmarketcap.com, as of March 26, 2018. Both prices are indexed from 100 as of the January 12, 2018 closing price for illustrative purposes.

Allegations of Negligence or Breach/Rescission of Contract

Allegations of negligence or breach/rescission of contract have also featured prominently in virtual currency litigation. Allegations of negligence and breach/rescission of contract have often targeted virtual currency service providers. For example, a putative class action filed on March 1, 2018 against virtual currency exchange Coinbase and two of its executives alleged that Coinbase’s handling of the “hard fork” in the Bitcoin blockchain that produced the new virtual currency Bitcoin Cash had been negligent. The lawsuit alleged that Coinbase negligently allowed employees to engage in insider trading and failed to use reasonable due care in ensuring that Coinbase could handle the large number of Bitcoin Cash transactions that occurred upon the virtual currency’s launch on Coinbase, and claimed that the price of Bitcoin Cash was “artificially manipulated” as

a result, resulting in delayed or incomplete fills of customer orders at higher prices.¹²⁸ Important outstanding questions related to the Coinbase litigation include whether Bitcoin Cash price movements can be attributed to Coinbase, whether putative class action members with distinct orders were similarly situated, and how customers' alleged losses should be quantified. Similar questions are outstanding in many virtual currency lawsuits alleging negligence or breach/rescission of contract, which also often contain allegations of artificial prices.

Allegations of Violations of Securities Laws and Regulations

The most common category of allegations in virtual currency litigation has been violations of securities laws. Most virtual currency litigation followed the SEC's publication of the DAO Report, which suggested the applicability of traditional securities laws to ICOs. 16 of out 25 total lawsuits, and 16 out of 21 total putative class actions, have featured allegations referencing federal or state securities laws or regulations. Some such lawsuits have alleged that unregistered ICOs constituted unregistered securities offerings and/or sales and that the proceeds from such sales should be used to repay ICO investors, whether or not fraud or deception were involved. For example, the 2018 putative class action *Davy v. Paragon Coin, Inc. et al.* argued that proceeds from the \$70 million ParagonCoin ICO should be repaid to investors based on the unregistered nature of the ICO and without reference to any alleged deception because "proof of deceptive activity or calculated deprivation of investors' rights and protections under the federal securities laws is not required or determinative as to Plaintiff's claim."¹²⁹

Other virtual currency lawsuits have made allegations of violations of Section 10(b) of the Exchange Act and Rule 10b-5 related to transactions in stocks and bonds of firms purportedly engaged in virtual currency or blockchain activities. For example, a putative class action against Xunlei Limited, an online storage and cryptocurrency "mining machine" firm, alleged "material misstatements and omissions" in press releases and filings with the SEC related to the firm's blockchain projects and issuance of a virtual currency, followed by negative press and substantial declines in the firm's stock price. The putative class action complaint made loss causation arguments reminiscent of event studies commonly conducted by expert witnesses in stock-drop cases.¹³⁰

7. Conclusions

While the global regulatory framework for virtual currency continues to develop, its general outlines have taken shape in many jurisdictions, including the United States. In the United States:

- The CFTC has defined convertible virtual currencies as commodities;

¹²⁸ Class Action Complaint in *Jeffrey Berk vs. Coinbase Inc., Brian Armstrong, and David Farmer* (Filed March 1, 2018).

¹²⁹ Class Action Complaint in *Davy v. Paragon Coin, Inc. et al.* (Filed January 30, 2018), p. 4.

¹³⁰ Class Action Complaint in *Dookeran v. Xunlei Limited et al.* (Filed January 18, 2018).

- the SEC has indicated that most convertible virtual currencies are securities and most ICOs are securities offerings;
- FinCEN has applied MSB BSA/AML requirements to convertible virtual currency exchanges and administrators;
- the IRS has decided to treat convertible virtual currencies as property for tax purposes;
- OFAC has suggested that convertible virtual currencies offered by sanctioned regimes may be considered extensions of credit to such regimes; and
- state regulators have varied in their treatment of virtual currencies, ranging from a virtual currency-specific licensing framework in New York to broad exemptions from state regulations in other states.

The U.S. regulatory framework contrasts with developments in other major markets around the globe:

- Virtual currencies are not considered either securities or commodities in the United Kingdom, Japan, South Korea, or China.
- The United Kingdom does consider virtual currency derivatives to be financial instruments under MiFID II, and generally allows virtual currency derivatives.
- Japan classifies virtual currencies as means of payment, and because it does not consider virtual currencies to be financial products, it prohibits virtual currency futures.
- South Korea has yet to fully classify virtual currencies, but prohibits futures transactions while allowing virtual currency spot markets.
- One area of general consensus across most markets is in preventing money laundering: The United Kingdom, Japan, and South Korea have moved in the same direction as the United States and pushed to integrate virtual currency platforms with the financial sector. They have all also applied Know Your Customer and anti-money laundering compliance requirements to either the financial institutions serving virtual currency platforms or the virtual currency platforms themselves.
- China, by contrast, has largely banned domestic financial institutions from providing financial services to virtual currency platforms, effectively pushing domestic virtual currency investors to foreign platforms, but tolerates substantial cryptocurrency mining.

Enforcement actions by U.S. regulatory authorities have also established discernable trends. For example, out of 71 total virtual currency enforcement actions identified by NERA, far more than half were brought since July 2017, though a majority of enforcement actions since that time have sought no criminal charges and imposed no financial penalties. In terms of categories of alleged

violations, 49 enforcement actions have alleged registration violations, 33 have alleged fraud-related violations, 6 have alleged BSA/AML violations, and 3 have alleged trading violations.

Finally, private litigation related to virtual currency has been a very recent phenomenon—36 out of 38 total private lawsuits identified by NERA have been brought since July 2017. Moreover, the lawsuits have featured several recurring allegations: 22 of those lawsuits alleged securities violations, 17 alleged fraud or misappropriation, and 4 alleged negligence or breach/rescission of contract. Although some of the lawsuits have featured virtual currency-specific allegations such as misappropriation of digital assets, many have included traditional securities litigation issues, such as Rule 10b-5 stock-drop allegations and artificial price allegations applied to firms with virtual currency or blockchain projects.