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Recent Trends in Virtual Currency Regulation, Enforcement, and Litigation

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Executive Summary

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 civil 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 26 March 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 will need to be answered in many matters. In addition, the introduction of Bitcoin futures on regulated exchanges that settle against cash market reference prices creates the potential for litigation alleging manipulation of Bitcoin cash or futures markets. Plaintiffs in such civil actions may utilize the statistical "screen" approaches common in reference rate litigation regarding LIBOR and ISDAFIX.

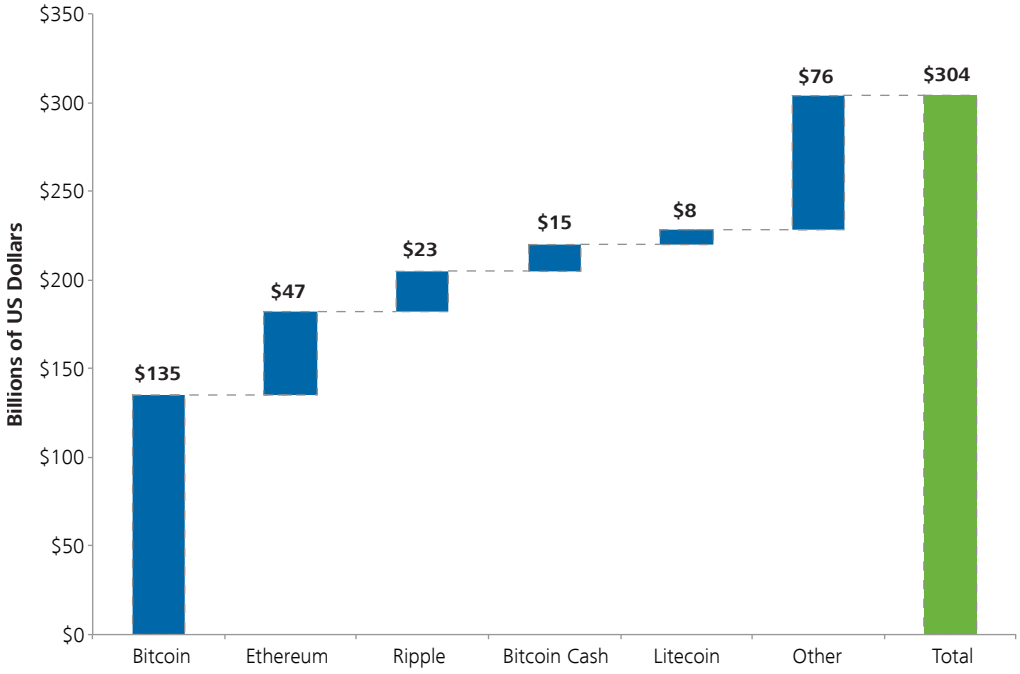
This primer introduces readers to the concept and practice of virtual currency and the blockchain, the regulation thereof, recent trends in related enforcement actions, and emerging trends in private virtual currency litigation, particularly securities class actions.

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."[3] If the virtual currency can be readily expressed in or substituted for recognized currencies,[4] it is called a convertible virtual currency.[5] Convertible virtual currencies have had volatile total market capitalizations, rising to over $600 billion on 18 December 2017 and falling to $304 billion as of 26 March 2018.[6] These market capitalizations put the value of convertible virtual currencies collectively on par with companies as large as Wells Fargo.[7] Figure 1 below shows the market capitalization of convertible virtual currencies as of 8 February 2018.

Figure 1. **Market Capitalization of Convertible Virtual Currencies**



Source: Data from Coinmarketcap.com, as of 26 March 2018.

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.[8] Bitcoin, the largest convertible virtual currency by market capitalization as of February 2018,[9] is an example of a cryptocurrency that utilizes cryptography and unique digital signatures to allow for decentralized, peer-to-peer electronic payments.[10]

Although virtual currencies existed prior to Bitcoin,[11] 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.[12]

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 transactions are then forwarded to all other nodes. In order to prevent "double spending,"[13] 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.[14]

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).[15] 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 US 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, market surveillance, investigations, and enforcement actions or collections efforts.[16] The IRS issued guidance in 2014 stating that "for federal tax purposes, [convertible virtual currency is] treated as property,"[17] 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.[18]

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.[19] 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.[20] As discussed below, the SEC has taken note of the parallels between ICOs and securities Initial Public Offerings (IPOs), and has initially focused its regulatory attention on this area.

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.[21] 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 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.[22]

One prominent example of a decentralized autonomous organization was called The DAO and 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.[23] 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, also known as ether, invested in The DAO.[24] In order to make investors whole, the group behind The DAO endorsed a "hard fork"[25] on the Ethereum blockchain that effectively transferred all funds raised (including those stolen by the attacker) from The DAO to a recovery address, where investors could exchange their DAO Tokens for Ethereum tokens on a new blockchain and avoid any nominal loss of invested Ethereum tokens.[26]

Evolving Regulatory Frameworks

Regulatory 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. However, the US regulatory framework for virtual currencies is starting to take shape. Several prominent federal regulators have articulated particular regulatory frameworks or issued substantial relevant guidance, and several states have promulgated rules and guidance. In addition, consistent patterns of enforcement actions 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:[27]

- 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.

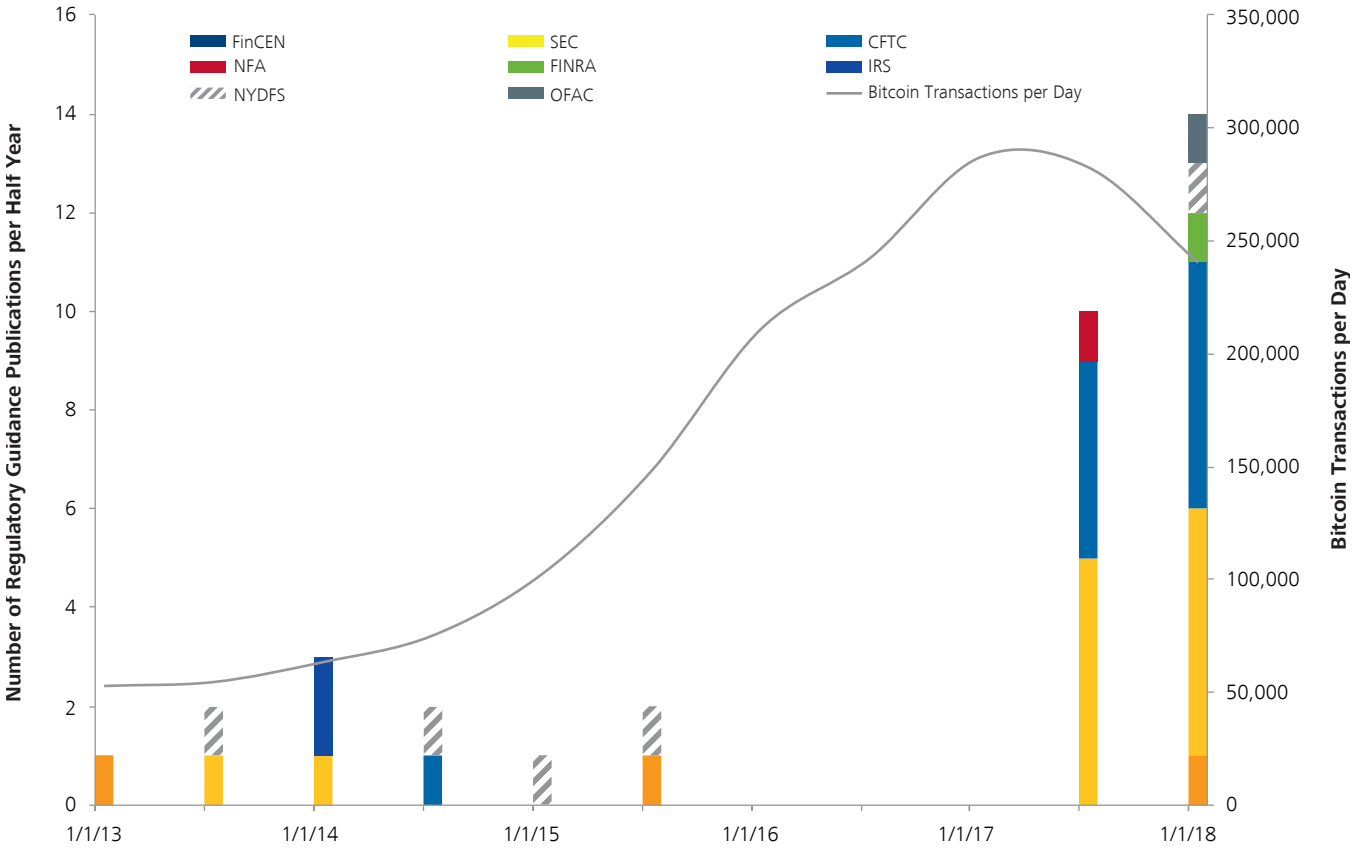
- The IRS treats virtual currencies as property for capital gains tax purposes.

- OFAC treats transactions in virtual currencies issued by sanctioned regimes as potential extensions of credit to sanctioned regimes.

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

As shown in Figure 2 below, several 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).[28] 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.

Figure 2. **Regulatory Guidance by Agency**
H1 2013 through H1 2018, Semi-Annually



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 9 March 2018.

Commodity Futures Trading Commission

The CFTC first took a stance on virtual currencies in December 2014, when then-Chairman Timothy Massad testified before the US 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."[29] In September 2015, the CFTC published its first enforcement action based on the conclusion that virtual currencies were commodities,[30] as explained in more detail in Section III. But it was not until the second half of 2017, shortly after the SEC published the DAO Report, 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."[31] This ruling is explained in more detail below.

On 17 October 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."[32]

On 15 December 2017, the CFTC issued a proposed interpretation[33] 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.[34]

In December 2017, Cboe Futures Exchange and CME Group both announced that they were listing cash-settled Bitcoin futures contracts that settle based on reference prices gathered from virtual currency exchanges.[35] CFTC officials told the press that the CFTC and the exchanges would monitor Bitcoin markets, including the underlying cash market, to make sure the futures contract would not be manipulated.[36] On 4 January 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."[37]

There has been intense media speculation regarding the possibility of manipulation of Bitcoin futures settlements, such as by "banging the close" in underlying cash markets to affect settlement determinations by Bitcoin exchanges. However, as of this writing, no enforcement actions and no civil complaints making such allegations have been identified. Based on the precedent set in reference rate litigation such as LIBOR and ISDAFIX (for which the authors provided expert and economic consulting services), it is quite likely that if any such enforcement actions or civil complaints were filed, they would utilize a "screen" methodology to identify potential pricing and statistical anomalies around the settlement window in the Bitcoin cash or futures markets.

On 19 January 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.[38]

On 24 January 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 US bitcoin futures market and access to data that can facilitate the detection and pursuit of bad actors in underlying spot markets."[39]

On 6 February 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."[40]

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"[41] and complaints the CFTC had received regarding "pump-and-dump schemes"[42] in virtual currency. In the latter advisory, the CFTC advised virtual currency customers and investors that "the CFTC maintains general anti-fraud and manipulation enforcement authority over virtual currency cash markets as a commodity in interstate commerce."[43]

On 6 March 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."[44] 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."[45] 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,"[46] consistent with the CFTC and SEC's published perspectives on their non-exclusive authority over virtual currency under facts and circumstances tests.

The 6 March 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 debate over virtual currency until and unless other courts rule similarly. An open question going forward is whether other courts will agree with the 6 March 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,"[47] 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.

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,[48] 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 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 25 July 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 US 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 US federal securities laws."[49]

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."[50] 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.[51]

The DAO Report explained the SEC's reasoning as follows: DAO Tokens are securities because investors in DAO Tokens invested money when they exchanged another virtual currency for DAO Tokens, and the investors did so with a reasonable expectation of profit derived from the managerial efforts of the team behind The DAO.[52] 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 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.[53]

The SEC followed the DAO Report with a 28 August 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."[54] 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.

On 11 December 2017, Chairman Clayton issued a Statement on Cryptocurrencies and Initial Coin Offerings stating 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."[55] 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 US law," and advised financial market professionals, "including securities lawyers, accountant and consultants" to keep that in mind.[56]

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 19 January 2018 joint statement emphasized that both agencies would focus on the "substance" of virtual currency activities rather than the "form" of such activities.[57]

Three days later, SEC Chairman Clayton presented opening remarks at the Securities Regulation Institute that were directed toward "securities lawyers, accountants, underwriters, and dealers."[58] 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 US securities bar," such as not counseling clients involved in ICOs that "the product they are promoting likely is a security."[59]

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."[60] The op-ed 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."[61]

On 7 March 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 investors as SEC-registered and regulated marketplaces when they are not" by, for example, "refer[ring] to themselves as 'exchanges.'"[62] 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 provided for [alternative trading systems] under SEC Regulation ATS."[63]

The SEC has yet to approve any of several proposed Bitcoin exchange-traded funds (ETFs). However, on 23 March 2018, the SEC issued an order instituting proceedings and requesting public comment on a proposed rule change to list and trade the shares of the ProShares Bitcoin ETF and the ProShares Short Bitcoin ETF at NYSE Arca, an exchange owned by Intercontinental Exchange.[64] On 5 April 2018, the SEC issued a similar order requesting public comment on a proposal to list and trade the shares of the GraniteShares Bitcoin ETF and GraniteShares Short Bitcoin ETF on Cboe BZX Exchange.[65] Both orders reference proposed ETFs with objectives to seek results corresponding to the direct or inverse performance of lead month Bitcoin futures contracts regulated by the CFTC.

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 18 March 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.[66] The guidance further stated that "the definition of a money transmitter does not differentiate between real currencies and convertible virtual currencies."[67] 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.[68]

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. FinCEN's ruling suggests the general principle that FinCEN considers a business involved in exchanges of fiat or virtual currency for transferable digital tokens representing commodity interests to be a money transmitter, because "it is allowing the unrestricted transfer of value from a customer's commodity position to the position of another customer or third-party, […] going beyond the activities of a broker or dealer in commodities and is acting as a convertible virtual currency administrator (with the freely transferable digital certificates being the commodity-backed virtual currency)."[69]

Internal Revenue Service

The IRS in March 2014 issued a notice and news release providing that "virtual currency is treated as property for US federal tax purposes."[70] The notice noted among other details that "mining" 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.[71]

Office of Foreign Assets Control

On 19 January 2018, the Office of Foreign Assets Control (OFAC) of the US 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 backed by Venezuela's oil reserves.[72] 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 US persons dealing in such a virtual currency may be exposed to US sanctions risk under Executive Order 13808.[73] This suggests that for sanctions purposes in general going forward, virtual currencies issued by foreign governments may be considered extensions of credit to those governments by OFAC. On 19 March 2018, the publication of Executive Order 13827 announced the prohibition of all transactions related to Venezuela's virtual currency by US persons.[74]

State Regulatory Frameworks

Some state financial regulators have considered creating regulatory frameworks for virtual currency. New York's NYDFS moved particularly early, publishing a notice of inquiry on new regulatory guidelines specific to virtual currencies in August 2013.[75] NYDFS followed the notice with a 17 July 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).[76] As of 24 June 2015, the final BitLicense Regulatory Framework rules were published in the New York State Register at 23 NYCRR Part 200.[77]

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 accountholders of the licensee.[78] On 22 September 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."[79] As of 7 March 2018, four firms were listed on the NYDFS website as state-regulated virtual currency institutions.[80]

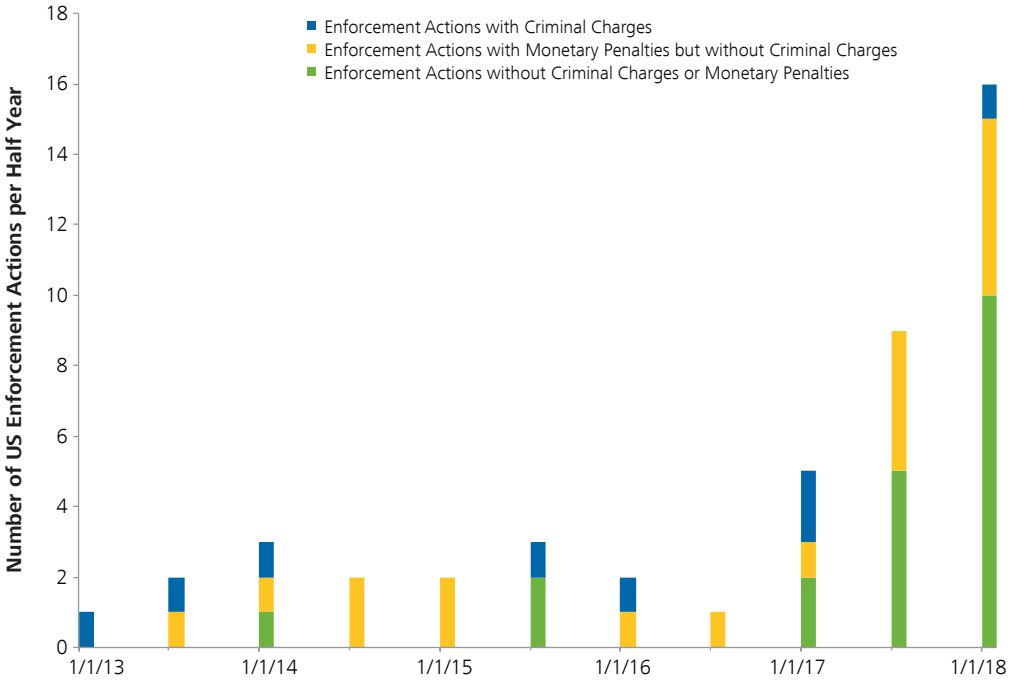
Other states' regulatory approaches have garnered less attention than New York's. Some states have chosen to interpret virtual currency as "money" for the purposes of state money transmitter laws and regulations or have otherwise required virtual currency issuers and/or exchanges to register,[81] while others have not provided any specific guidance.

Increasing Enforcement Actions

General Enforcement Trends

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: more than half of the 46 total virtual currency enforcement actions have been brought since 1 July 2017. 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 orders and temporary trading suspensions. A breakdown of virtual currency enforcement actions by penalty-type sought is shown below in Figure 3.

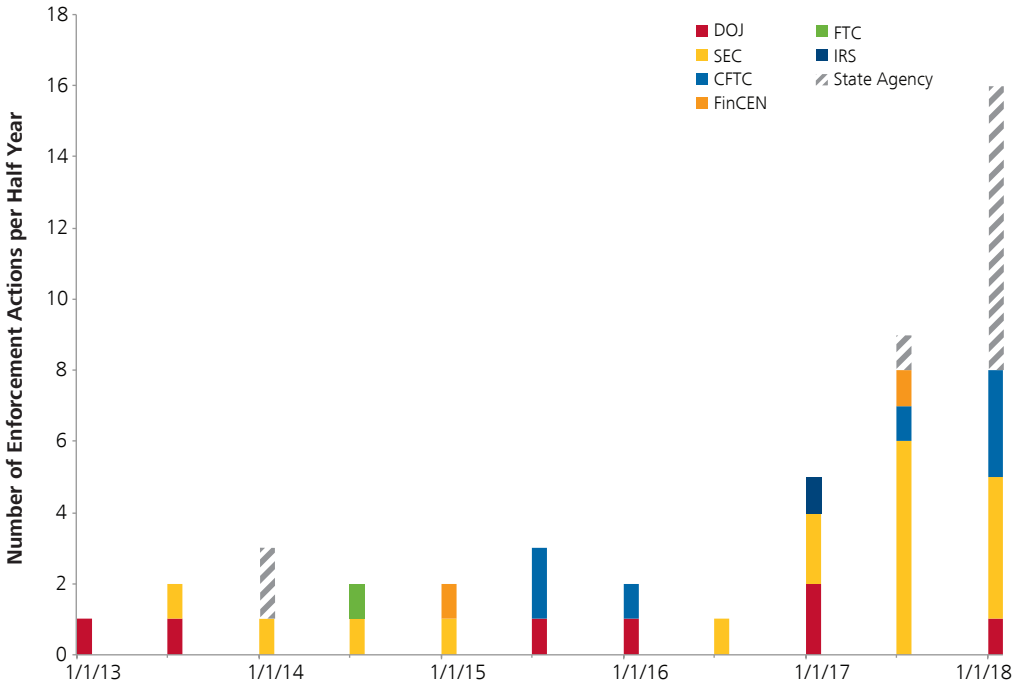
Figure 3. **Number of Virtual Currency Enforcement Actions by Penalty-Type Sought**
H1 2013 through H1 2018, Semi-Annually



Source: Data from NERA research into enforcement actions on enforcement agency websites. H1 2018 data through 9 March 2018.

The SEC has brought the most virtual currency enforcement actions, with at least 17 as of 9 March 2018; state agencies have brought 11; the CFTC and the Department of Justice (DOJ) have brought seven each; FinCEN has brought two; and the IRS and the FTC have each brought one virtual currency enforcement action. Figure 4 below displays a breakdown of enforcement actions by regulatory agency.

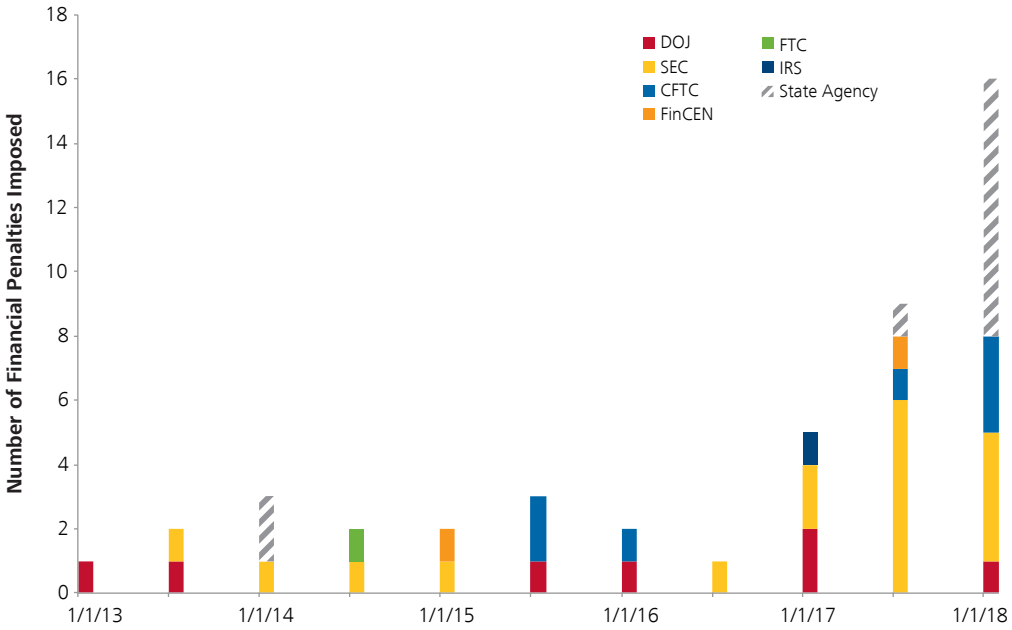
Figure 4. **Number of Virtual Currency Enforcement Actions by Agency**
H1 2013 through H1 2018, Semi-Annually



Source: Data from NERA research into enforcement actions on enforcement agency websites. H1 2018 data through 9 March 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 13 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 Figure 5 below.

Figure 5. **Financial Penalties Imposed by Agency**
H1 2013 through H1 2018, Semi-Annually



Sources: Data from NERA research into enforcement actions on enforcement agency websites. Data through 9 March 2018. Financial penalties include disgorgement, civil money penalties, and all other enforcement agency-reported financial payments 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 FinCEN[82] and the DOJ[83] 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,[84] or (2) that firms or individuals operating online platforms to trade convertible virtual currencies have operated an unregistered exchange or broker-dealer;[85]

- **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,[86] (2) that firms or individuals that have accepted funds and orders in convertible virtual currencies have failed to register as futures commission merchants,[87] or (3) that firms or individuals accepting convertible virtual currencies in exchange for pooled commodity interests have failed to register as commodity pool operators or associated persons of commodity pool operators. platforms to trade convertible virtual currencies have operated an unregistered exchange or broker-dealer.[88]

Fraud-Related Allegations

Enforcement authorities have pursued at least 26 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 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,[89] or temporarily suspended,[90] 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 computers[91] to operating a Ponzi scheme.[92] 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 $950,000, and, notably, in one case a dismissal of all charges in Florida state court in 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.[93]

- **Money Laundering:** The DOJ brought two enforcement actions alleging money laundering activity in connection with the "Silk Road" online marketplace. The better-publicized of the two, against the purported owner and operator of "Silk Road," Ross Ulbricht, alleged in part 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.[94] 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.[95]

Trading Allegations

Enforcement authorities have pursued two enforcement actions relating to virtual currencies that have alleged trading violations:

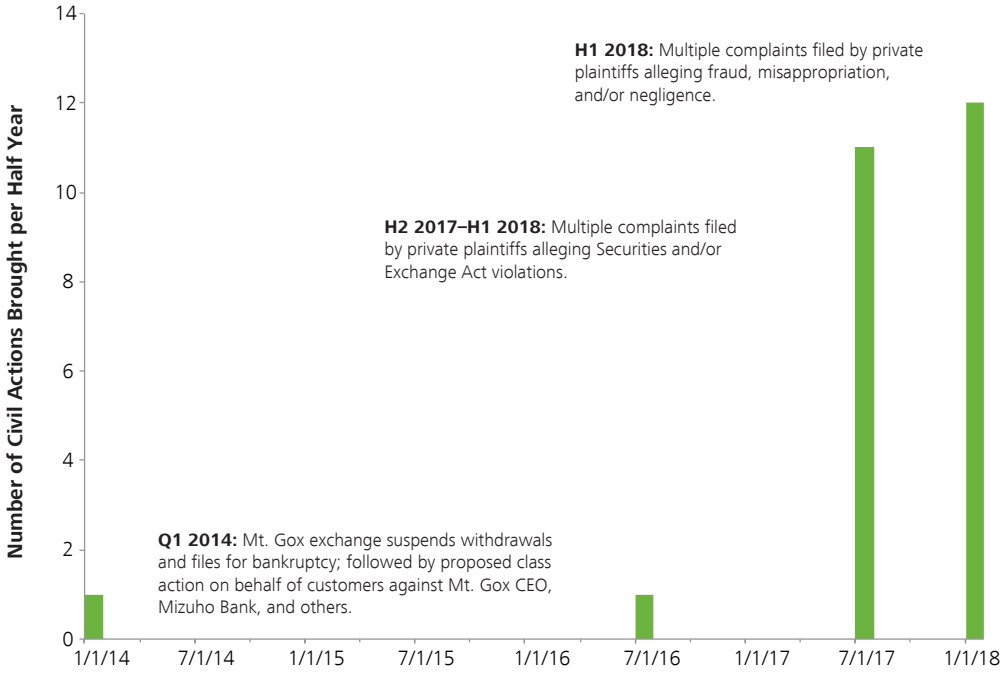
- In 2015, the CFTC issued an order against TeraExchange LLC, a provisionally registered Swap Execution Facility, for purportedly allowing wash trades and prearranged trades on its platform. According to the CFTC, TeraExchange allowed two market participants to trade two "completely offsetting" contracts consisting of non-deliverable forward contracts based on the relative value of Bitcoin and the US 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.[96]

- 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 Trust from shareholders and earned redemption fees 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.[97]

Developing Civil Litigation Trends

Noteworthy civil litigation related to virtual currencies is a very recent trend, with 23 out of 25 noteworthy civil actions identified by NERA brought since July 2017. Figure 6 below shows the temporal distribution of noteworthy civil litigation related to virtual currencies.

Figure 6. **Litigation Count**
H1 2014 through H1 2018, Semi-Annually



Source: From NERA research into litigation focused on virtual currencies. H1 2018 data through 9 March 2018.

Civil litigation has featured recurring categories of allegations:

- Allegations of fraud or misappropriation (11 out of 25 cases);
- Allegations of negligence or breach/rescission of contract (eight out of 25 cases); and
- Allegations of violations of securities laws or regulations (16 out of 25 cases).

As explained below, many virtual currency-related lawsuits have featured more than one category of allegations. Of the 25 identified lawsuits, 21 have been putative class actions.

Allegations of Fraud or Misappropriation in Civil Litigation

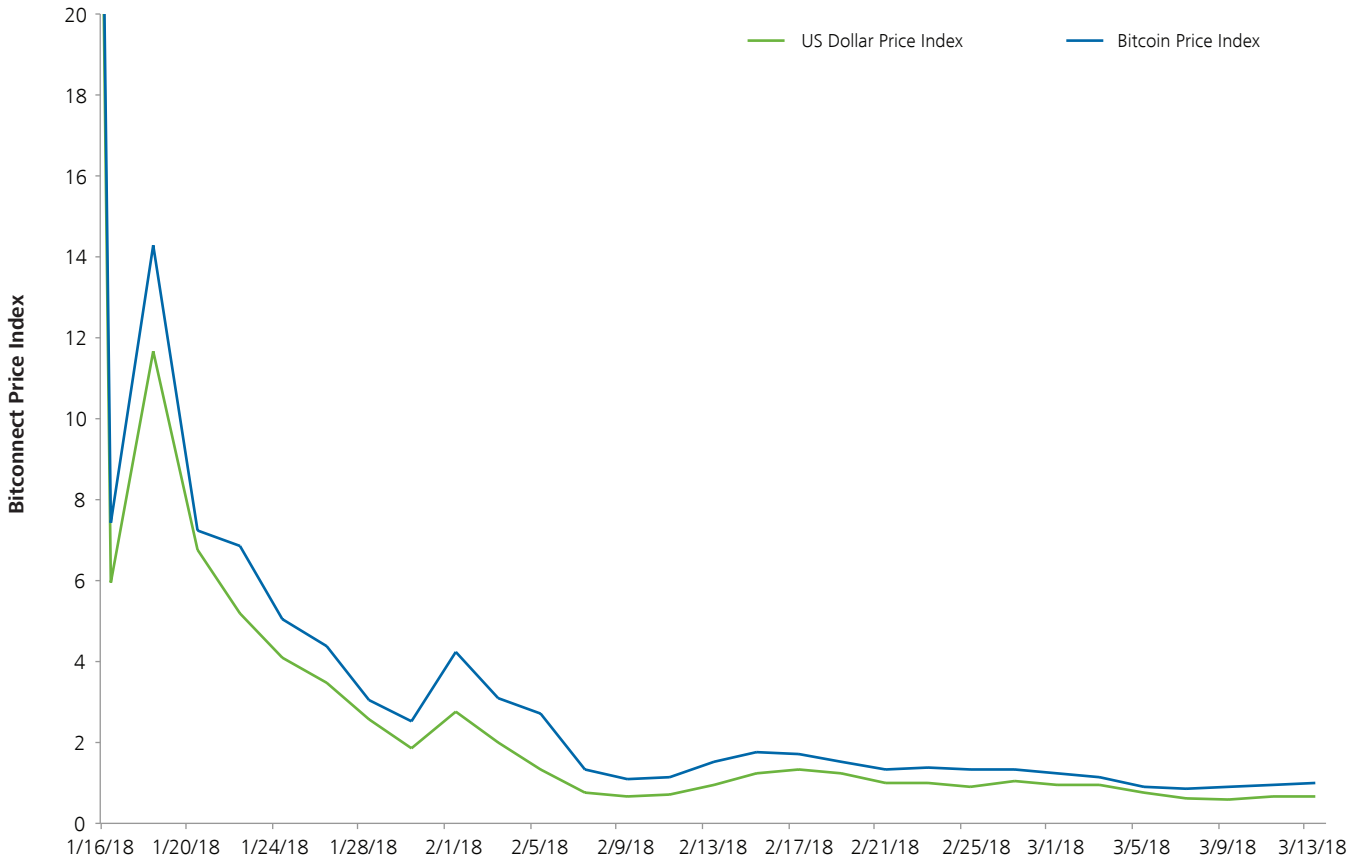
Allegations of fraud or misappropriation have been common in private virtual currency litigation. Such allegations range from claims of misleading promotional or marketing campaigns to allegations of outright theft of customer or investor assets.

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. The case against Mizuho Bank and Mark Karpeles is ongoing.[98]

Numerous lawsuits since then have alleged 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. The putative class action complaints against Bitconnect alleged that Bitconnect 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.[99] The complaints further alleged that on 13 January 2018, after several state authorities had issued cease and desist orders against Bitconnect, Bitconnect's platform ceased operating for several days; when the website came back online, the lending platform was shut down; and investors were repaid their Bitcoin loans at an exchange rate that was far from the market exchange rate, as the price of Bitconnect's "coin" fell by more than 90% between 13 January and 16 January 2018.[100]

As with most virtual currency litigation alleging fraud or misappropriation, the ongoing Bitconnect litigation is likely to involve disputes over questions requiring expert opinions, such as determining the application of relevant commodities and/or securities laws and regulations to particular products and entities, estimating reasonable damages, examining market structures, and analyzing transaction histories. For example, with respect to possible damages, the ongoing Bitconnect litigation may have to determine whether damages, if any, should be calculated based on Bitconnect investors' losses as denominated in US dollars or in Bitcoin, given that Bitconnect was a Bitcoin lending platform. Figure 7 below shows the relative change in the price of Bitconnect in US dollars and in Bitcoin immediately following the price crash.

Figure 7. **Bitconnect Price in US Dollars and Bitcoin**
Indexed to 12 January 2018 Closing Prices=100



Sources: Data from Coinmarketcap.com, as of 26 March 2018. Both prices are indexed from 100 as of the 12 January 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 1 March 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.[101] 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 often contain allegations of artificial prices.

Allegations of Civil 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. Sixteen out of 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 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."[102]

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.[103]

Summary and Conclusions

While the regulatory framework for virtual currency in the US continues to develop, its general outlines have taken shape: the CFTC has defined convertible virtual currencies as commodities; 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 dealing in convertible virtual currencies offered by sanctioned regimes may be prohibited; 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 some other states.

Enforcement actions by regulatory authorities have also established discernable trends. For example, out of 46 total virtual currency enforcement actions identified by NERA, more than half have occurred 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, 26 enforcement actions have alleged registration violations, 26 have alleged fraud-related violations, six have alleged BSA/AML violations, and two have alleged trading violations.

Finally, civil litigation related to virtual currency has been a very recent phenomenon—23 of out 25 total private lawsuits identified by NERA have been brought since July 2017. Moreover, the lawsuits have featured several recurring allegations: 16 of those lawsuits alleged securities violations, 11 alleged fraud or misappropriation, and eight 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.

Notes

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[3] Internal Revenue Service, "Notice 2014-21," 25 March 2014, p. 1, available at https://www.irs.gov/pub/irs-drop/n-14-21.pdf.

[4] For example, US dollars.

[5] Internal Revenue Service, "Notice 2014-21," 25 March 2014, p.1.

[6] Coinmarketcap.com, "Cryptocurrency Market Capitalizations," available at https://coinmarketcap.com/ and https://web.archive.org/web/20171218220338/https://coinmarketcap.com.

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

[8] Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," 31 October 2008, p. 1, available at https://bitcoin.org/bitcoin.pdf. See also Commodity Futures Trading Commission, "A CFTC Primer on Virtual Currencies," 17 October 2017, p. 4, available at http://www.cftc.gov/idc/groups/public/documents/file/labcftc_primercurrencies100417.pdf.

[9] Bitcoin's market capitalization on 20 February 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/.

[10] Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," 31 October 2008, p. 1. See also Commodity Futures Trading Commission, "A CFTC Primer on Virtual Currencies," 17 October 2017, p. 5.

[11] See, for example, NEWSBTC, "A Brief History of Digital Currency," 1 November 2015, available at https://www.newsbtc.com/2015/11/01/a-brief-history-of-digital-currency/.

[12] 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," 17 October 2017, pp. 5–6. See also Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," 31 October 2008, pp. 1–8.

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

[14] 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. See also Securities and Exchange Commission, "Investor Bulletin: Initial Coin Offerings," 25 July 2017, available at https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings.

[15] "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," 25 July 2017. "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," 8 December 2014, p. 3, available at https://dfi.wa.gov/documents/money-transmitters/virtual-currency-interim-guidance.pdf. See also Financial Crimes Enforcement Network, "Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies," 18 March 2013, available at https://www.fincen.gov/resources/statutes-regulations/guidance/application-fincens-regulations-persons-administering.

[16] See, for example, Financial Crimes Enforcement Network, "Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies," 18 March 2013. See also, for example, Internal Revenue Service, "Notice 2014–21," 25 March 2014, pp. 1, 3, available at https://www.irs.gov/pub/irs-drop/n-14-21.pdf.

[17] Internal Revenue Service, "Notice 2014–21," 25 March 2014, p. 2.

[18] See Securities and Exchange Commission, "Investor Bulletin: Initial Coin Offerings," 25 July 2017.

[19] Timothy McKenna and Sammy Chu, "A Look at Initial Coin Offerings," NERA Economic Consulting, 12 December 2017, p. 1, available at http://www.nera.com/content/dam/nera/publications/2017/PUB_A_Look_at_ICOs_1217.pdf.

[20] Ibid, pp. 1, 6.

[21] See Kevin Delmolino, et al., "Step by Step Towards Creating a Safe Smart Contract: Lessons and Insights from a Cryptocurrency Lab," 18 November 2015, p. 1, available at https://allquantor.at/blockchainbib/pdf/delmolino2015step.pdf. 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.

[22] Vitalik Buterin, "Ethereum White Paper: A Next Generation Smart Contract & Decentralized Application Platform," 2014, pp. 1, 23.

[23] Securities and Exchange Commission, "Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO," 25 July 2017, Release No. 81207, pp. 1, 3–4, available at https://www.sec.gov/litigation/investreport/34-81207.pdf.

[24] Ibid, p. 9.

[25] A hard fork is a change in protocol software that creates a divergence from the previous iteration of a blockchain such that transactions on the new blockchain would be regarded as invalid on the old blockchain, and additional transactions on the old blockchain would be regarded as invalid on the new blockchain.

[26] Securities and Exchange Commission, "Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO," 25 July 2017, Release No. 81207, pp. 9–10.

[27] Commodity Futures Trading Commission, "CFTC Backgrounder on Oversight of and Approach to Virtual Currency Futures Markets," 4 January 2018, pp. 1–2, available at http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/backgrounder_virtualcurrency01.pdf.

[28] 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," 23 July 2013, available at https://www.sec.gov/investor/alerts/ia_virtualcurrencies.pdf. See also Securities and Exchange Commission, "Investor Alert: Bitcoin and Other Virtual Currency-Related Investments," 7 May 2014, available at https://www.investor.gov/additional-resources/news-alerts/alerts-bulletins/investor-alert-bitcoin-other-virtual-currency.

[29] CFTC Chairman Timothy Massad, "Testimony of Chairman Timothy Massad before the US Senate Committee on Agriculture, Nutrition & Forestry," 10 December 2014, available at http://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-6.

[30] 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 Facility for Trading or Processing Swaps without Registering," 17 September 2015, available at http://www.cftc.gov/PressRoom/PressReleases/pr7231-15.

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

[32] Commodity Futures Trading Commission, "A CFTC Primer on Virtual Currencies," 17 October 2017, p. 11.

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

[34] Commodity Futures Trading Commission, 82 FR 60335, 20 December 2017, at pp. 60339–60340, available at http://www.cftc.gov/idc/groups/public/@lrfederalregister/documents/file/2017-27421a.pdf.

[35] Cboe Futures Exchange, "XBT-Cboe Bitcoin Futures," available at http://cfe.cboe.com/cfe-products/xbt-cboe-bitcoin-futures; CME Group, "CME Group Self-Certifies Bitcoin Futures to Launch December 18," 1 December 2017, available at http://www.cmegroup.com/media-room/press-releases/2017/12/01/cme_group_self-certifiesbitcoinfuturestolaunchdec18.html.

[36] See, for example, Matthew J. Belvedere, "Government regulator: We're going 'to make sure' new bitcoin futures are not manipulated," CNBC, 6 December 2017, available at https://www.cnbc.com/2017/12/06/government-to-make-sure-new-bitcoin-futures-are-not-manipulated.html.

[37] Commodity Futures Trading Commission, "CFTC Backgrounder on Oversight of and Approach to Virtual Currency Futures Markets," 4 January 2018, pp. 1–2.

[38] Commodity Futures Trading Commission, "Joint Statement from CFTC and SEC Enforcement Directors Regarding Virtual Currency Enforcement Actions," 19 January 2018, available at http://www.cftc.gov/PressRoom/SpeechesTestimony/mcdonaldstatement011918.

[39] SEC Chairman Jay Clayton and CFTC Chairman J. Christopher Giancarlo, "Regulators Are Looking at Cryptocurrency," 24 January 2018, available at https://www.wsj.com/articles/regulators-are-looking-at-cryptocurrency-1516836363.

[40] CFTC Chairman J. Christopher Giancarlo, "Written Testimony before the Senate Banking Committee," 6 February 2018, available at https://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo37.

[41] Commodity Futures Trading Commission, "Customer Advisory: Understand the Risks of Virtual Currency Trading," 15 December 2017, available at http://www.cftc.gov/idc/groups/public/@customerprotection/documents/file/customeradvisory_urvct121517.pdf.

[42] Commodity Futures Trading Commission, "CFTC Issues First Pump-and-Dump Virtual Currency Customer Protection Advisory," 15 February 2018, available at http://www.cftc.gov/PressRoom/PressReleases/pr7697-18#PrRoWMBL.

[43] Ibid.

[44] Senior United States District Judge Jack B. Weinstein, "Memorandum & Order in CFTC v. McDonnell and Cabbagetech," 6 March 2018, p. 24.

[45] Ibid, pp. 24–25.

[46] Ibid, p. 24.

[47] Ibid, p. 24.

[48] 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," 6 February 2018, available at https://www.sec.gov/news/testimony/testimony-virtual-currencies-oversight-role-us-securities-and-exchange-commission.

[49] Securities and Exchange Commission, "Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO," 25 July 2017, Release No. 81207, p. 2.

[50] Ibid, p. 1.

[51] Ibid, p. 1.

[52] Ibid, pp. 11–15.

[53] Ibid, pp. 15–18.

[54] According to the SEC, "The companies affected by trading suspensions include First Bitcoin Capital Corp., CIAO Group, Strategic Global, and Sunshine Capital." Securities and Exchange Commission, "Investor Alert: Public Companies Making ICO-Related Claims," 28 August 2017, p. 1, available at https://www.sec.gov/oiea/investor-alerts-and-bulletins/ia_icorelatedclaims.

[55] SEC Chairman Jay Clayton, "Statement on Cryptocurrencies and Initial Coin Offerings," 11 December 2017, available at https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11.

[56] Ibid.

[57] Commodity Futures Trading Commission, "Joint Statement from CFTC and SEC Enforcement Directors Regarding Virtual Currency Enforcement Actions," 19 January 2018, available at http://www.cftc.gov/PressRoom/SpeechesTestimony/mcdonaldstatement011918.

[58] SEC Chairman Clayton, "Opening Remarks at the Securities Regulation Institute," 22 January 2018, available at https://www.sec.gov/news/speech/speech-clayton-012218.

[59] Ibid.

[60] SEC Chairman Jay Clayton and CFTC Chairman J. Christopher Giancarlo, "Regulators Are Looking at Cryptocurrency," 24 January 2018.

[61] Ibid.

[62] Securities and Exchange Commission, "Statement on Potentially Unlawful Online Platforms for Trading Digital Assets," 7 March 2018, available at https://www.sec.gov/news/public-statement/enforcement-tm-statement-potentially-unlawful-online-platforms-trading.

[63] Ibid.

[64] Securities and Exchange Commission, "Self-Regulatory Organizations; NYSE Arca, Inc.; Order Instituting Proceedings to Determine Whether to Approve or Disapprove a Proposed Rule Change to List and Trade the Shares of the ProShares Bitcoin ETF and the ProShares Short Bitcoin ETF under NYSE Arca Rule 8.200-E, Commentary .02," 23 March 2018, available at https://www.sec.gov/rules/sro/nysearca/2018/34-82939.pdf.

[65] Securities and Exchange Commission, "Self-Regulatory Organizations; Cboe BZX Exchange, Inc.; Order Instituting Proceedings to Determine Whether to Approve or Disapprove a Proposed Rule Change to List and Trade the Shares of the GraniteShares Bitcoin ETF and the GraniteShares Short Bitcoin ETF under BZX Rule 14.11(f)(4), Trust Issued Receipts," 5 April 2018, available at https://www.sec.gov/rules/sro/cboebzx/2018/34-82995.pdf.

[66] Financial Crimes Enforcement Network, "Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies," FIN-2013-G001, 18 March 2013, pp. 1–3, available at https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf.

[67] Ibid, pp. 1–3.

[68] Ibid, pp. 2–3.

[69] 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, 14 August 2015, available at https://www.fincen.gov/sites/default/files/administrative_ruling/FIN-2015-R001.pdf.

[70] Internal Revenue Service, "IRS virtual Currency Guidance," IR-2014-36, 25 March 2014, available at https://www.irs.gov/newsroom/irs-virtual-currency-guidance.

[71] Internal Revenue Service, "Notice 2014-21," 25 March 2014, p. 4, 5–6, available at https://www.irs.gov/pub/irs-drop/n-14-21.pdf.

[72] Note that Venezuela's government has not specified how the petro cryptocurrency will be backed by oil, and as of 7 March 2018 has not clarified whether the cryptocurrency can be redeemed for any commodity interests. Alexandra Ulmer and Deisy Buitrago, "Enter the 'petro': Venezeula to launch oil-backed cryptocurrency,"*Reuters*, 3 December 2017, available at https://www.reuters.com/article/us-venezuela-economy/enter-the-petro-venezuela-to-launch-oil-backed-cryptocurrency-idUSKBN1DX0SQ.

[73] Office of Foreign Assets Control, "Other FAQS: Other Sanctions Programs," 19 January 2018, available at https://web.archive.org/web/20180201075346/https://www.treasury.gov/resource-center/faqs/Sanctions/Pages/faq_other.aspx.

[74] Federal Register, 83 FR 12469, "Executive Order 13827," 19 March 2018, available at https://www.treasury.gov/resource-center/sanctions/Programs/Documents/13827.pdf.

[75] New York Department of Financial Services, "Notice of Inquiry on Virtual Currencies," 12 August 2013, available at http://www.dfs.ny.gov/about/hearings/vc_01282014/notice_20130812_vc.pdf.

[76] New York Department of Financial Services, "NY DFS Releases Proposed BitLicense Regulatory Framework for Virtual Currency Firms," 17 July 2014, available at http://www.dfs.ny.gov/about/press/pr1407171.htm.

[77] 23 NYCRR Part 200. See also New York Department of Financial Services, "BitLicense Regulatory Framework Final Rules," 24 June 2015, available at www.dfs.ny.gov/legal/regulations/bitlicense_reg_framework.htm.

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